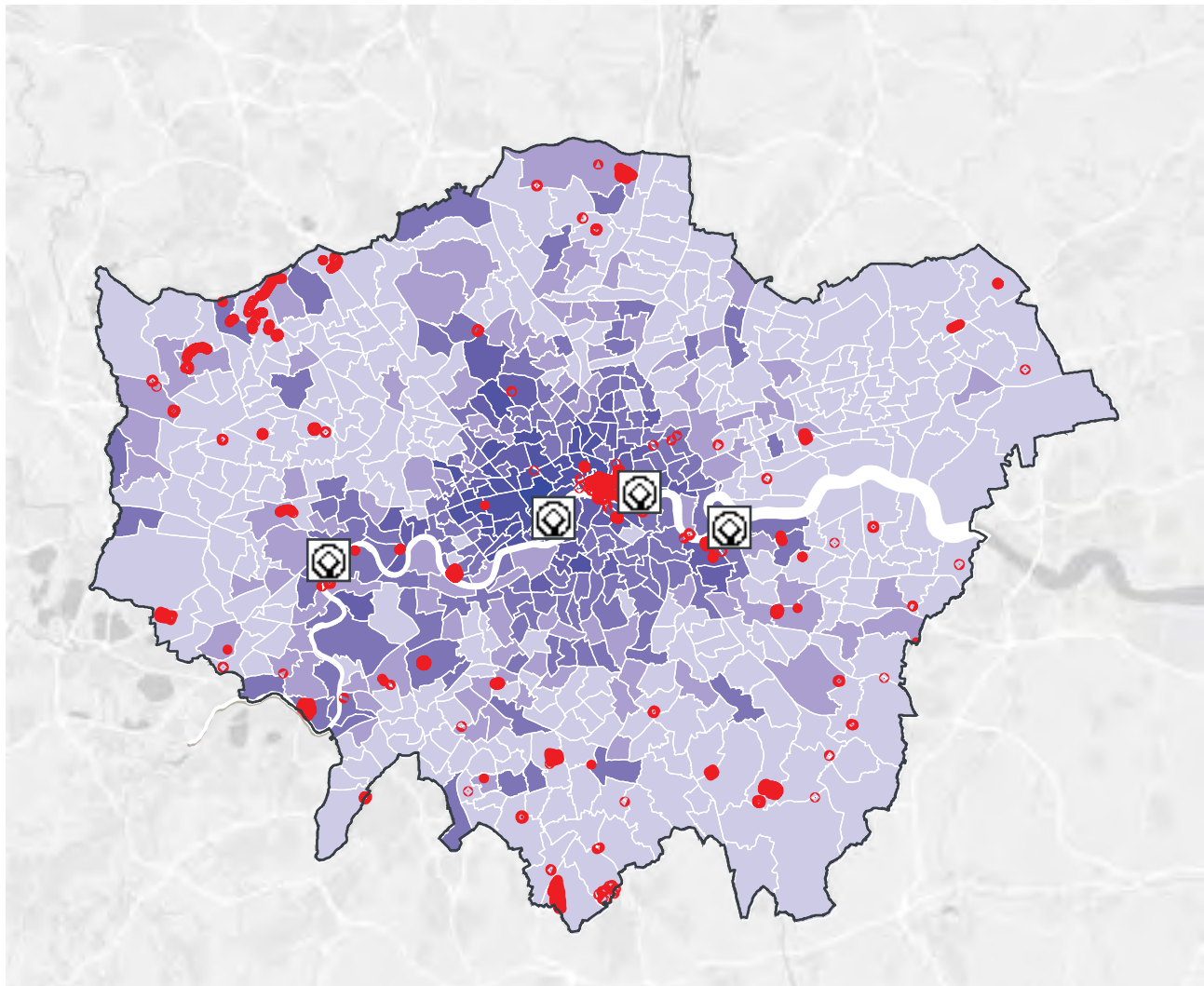


Figure 7.1 - Listed Buildings, Scheduled Monuments and World Heritage Sites



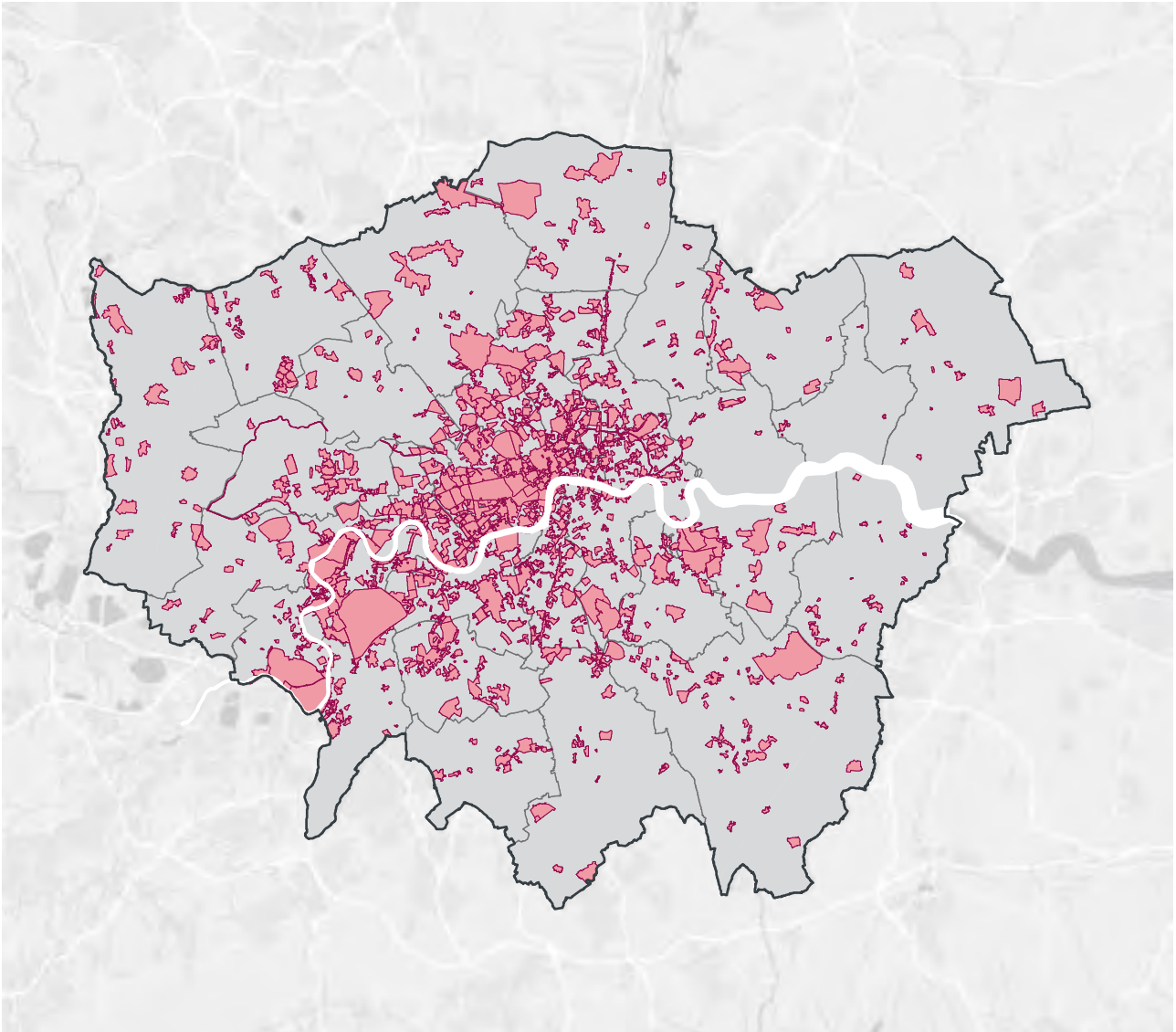
### Listed Buildings per square km

- 350 - 710
- 100 - 349
- 50 - 99
- 10 - 49
- 5 - 9
- 0 - 4

- Scheduled Monuments
- Ⓜ UNESCO World Heritage Sites  
from left to right: Royal  
Botanical Gardens, Kew;  
Westminster;  
Tower of London; and  
Maritime Greenwich

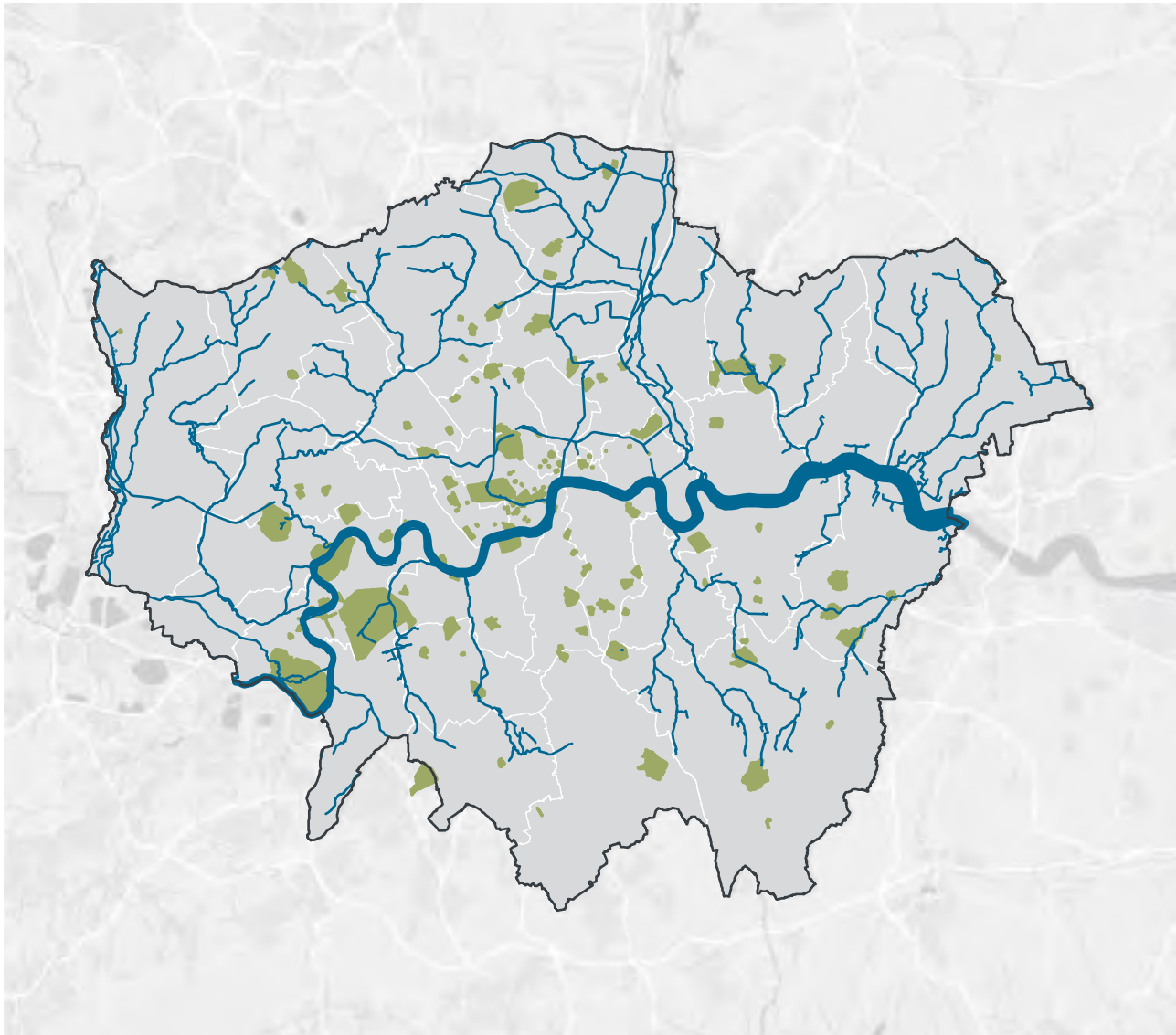
Source: Historic  
England

Contains OS data ©  
Crown copyright and  
database right (2017)

**Figure 7.2 - London's Conservation Areas****London's Conservation Areas**

- Conservation Areas  
London boroughs designate and review

Source: Historic  
England

**Figure 7.3 - London's Waterways and Registered Historic Parks & Gardens**

### London's Waterways and Registered Parks and Gardens

- Registered Historic Parks and Gardens
- Waterways

Source: Historic England

Contains OS data © Crown copyright and database right (2017)

This map shows the spatial distribution of London's Registered Historic Parks and Gardens, which are designated heritage assets. It also shows the extensive network of London's waterways, many of which will have historic significance.

- 7.1.3 Ensuring the **identification and sensitive management of London’s heritage assets**, in tandem with promotion of the highest standards of architecture, will be essential to maintaining the blend of old and new that contributes to the capital’s unique character. London’s heritage reflects the city’s diversity, its people and their impact on its structure. When assessing the significance of heritage assets, it is important to appreciate the influence of past human cultural activity from all sections of London’s diverse community. Every opportunity to bring the story of London to people and improve the accessibility and maintenance of London’s heritage should be exploited. Supporting infrastructure and visitor facilities may be required to improve access and enhance appreciation of London’s heritage assets.
- 7.1.4 Many heritage assets make a significant contribution to local character which should be sustained and enhanced. The Greater London Historic Environment Record (GLHER)<sup>127</sup> is a comprehensive and dynamic resource for the historic environment of London containing over 196,000 entries. In addition to utilising this record, boroughs’ existing **evidence bases**, including character appraisals, conservation plans and local lists should be used as a reference point for plan-making and when informing development proposals.
- 7.1.5 As set out in Policy D1 London’s form, character and capacity for growth, Development Plans and strategies should demonstrate a clear understanding of the heritage values of a building, site or area and its relationship with its surroundings. Through proactive management from the start of the development process, planners and developers should **engage and collaborate with stakeholders** so that the capital’s heritage contributes positively to its future. To ensure a full and detailed understanding of the local historic environment, stakeholders should include Historic England, London’s Parks and Gardens Trust, The Royal Parks, boroughs, heritage specialists, local communities and amenity societies.
- 7.1.6 Historically, London has demonstrated an ability to regenerate itself, which has added to the city’s distinctiveness and diversity of inter-connected places. Today **urban renewal** in London offers opportunities for the creative re-use of heritage assets and the historic environment as well as the enhancement,

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<sup>127</sup> The GLHER is a public record managed by Historic England and can be accessed by visiting the GLHER office and through remote searches that involve the supply of digital GLHER data. More information can be found at: <https://historicengland.org.uk/services-skills/our-planning-services/greater-london-archaeology-advisory-service/>



repair and beneficial re-use of heritage assets that are on the At Risk Register.<sup>128</sup> In some areas, this might be achieved by reflecting existing or original street patterns and blocks, or revealing and displaying archaeological remains; in others, it will be expressed by retaining and reusing buildings, spaces and features that play an important role in the local character of an area. Policy D1 London's form, character and capacity for growth further addresses the issue of understanding character and context.

- 7.1.7 **Heritage significance** is defined as the archaeological, architectural, artistic or historic interest of a heritage asset. This may be represented in many ways, in an asset's visual attributes, such as form, materials, architectural detail, design and setting, as well as through historic associations between people and a place, and where relevant, the historic relationships between heritage assets. Development that affects heritage assets and their settings should respond positively to the assets' significance, local context and character to protect the contribution that settings make to the assets' significance. In particular, consideration will need to be given to mitigating impacts from development that is not sympathetic in terms of scale, materials, details and form.
- 7.1.8 Where there is evidence of **deliberate neglect** of and/or damage to a heritage asset to help justify a development proposal, the deteriorated state of that asset will be disregarded when making a decision on a development proposal.
- 7.1.9 Understanding of **London's archaeology** is continuously developing with much of it yet to be fully identified and interpreted. To help identify sites of archaeological interest, boroughs are expected to develop up-to-date Archaeological Priority Areas for plan-making and decision-taking. Up-to-date Archaeological Priority Areas (APAs) are classified using a tier system recognising their different degrees of archaeological significance and potential as presently understood. Tier 1 APAs help to identify where undesignated archaeological assets of equivalent significance to a scheduled monument – and which are subject to the same policies as designated assets – are known or likely to be present.
- 7.1.10 Across London, Local Plans identify areas that have known archaeological interest or potential. The whole of the City of London has high archaeological sensitivity whilst elsewhere the Greater London **Archaeological Priority Area**

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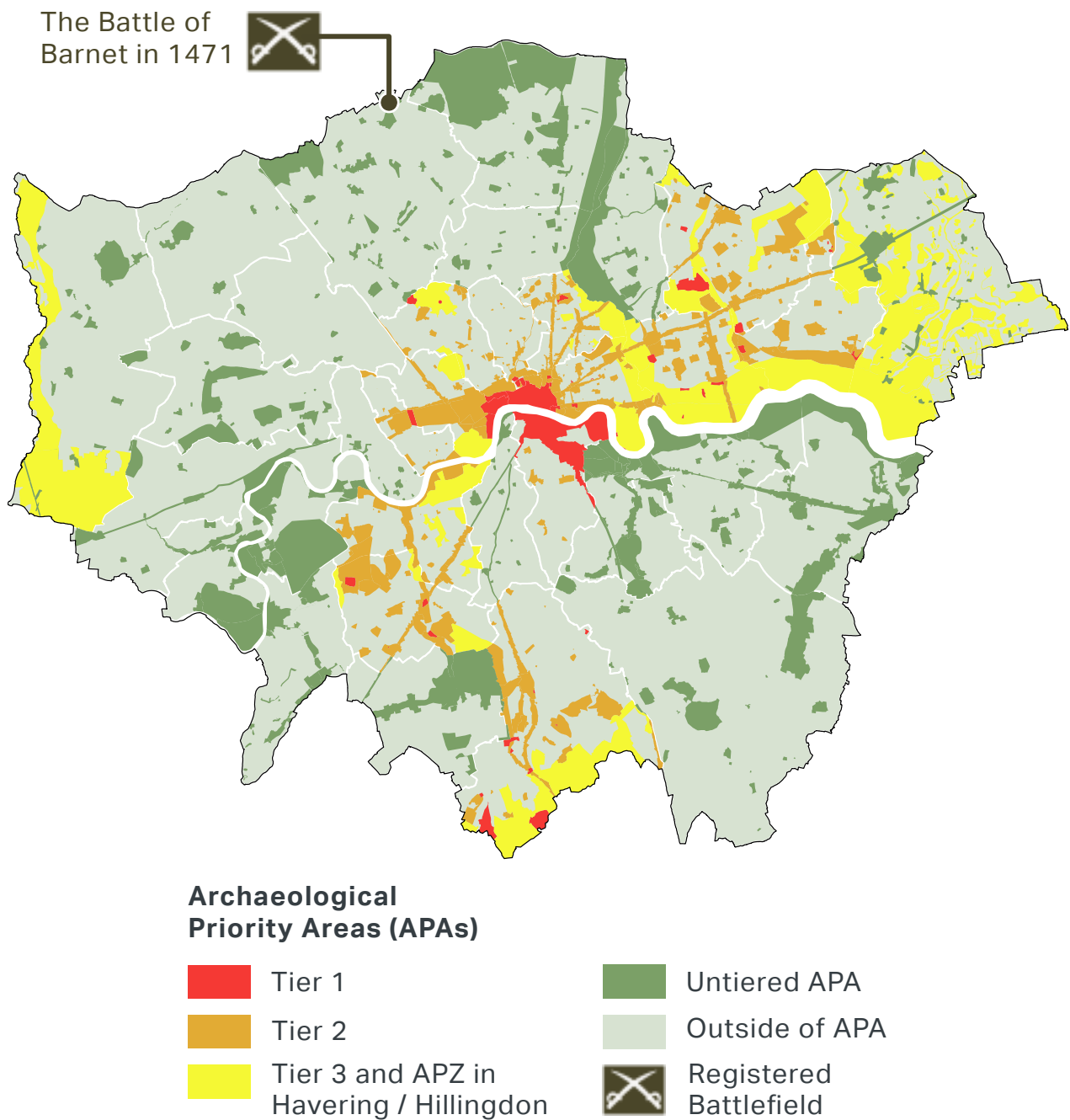
The Heritage at Risk Register is produced annually as part of Historic England's Heritage at Risk programme. The Register includes buildings or structures, places of worship, archaeological sites, battlefields, wrecks, parks and gardens, and conservation area known to be at risk as a result of neglect, decay or inappropriate development. Further information can be found at: <https://historicengland.org.uk/advice/heritage-at-risk/>

**Review Programme** is updating these areas using new consistent London-wide criteria (see [Figure 7.4](#)). Each new APA is assigned to a tier:

- Tier 1 is a defined area which is known, or strongly suspected, to contain a heritage asset of national significance, or which is otherwise of very high archaeological sensitivity.
- Tier 2 is a local area with specific evidence indicating the presence, or likely presence, of heritage assets of archaeological interest.
- Tier 3 is a landscape-scale zone within which there is evidence indicating the potential for heritage assets of archaeological interest to be discovered.
- Tier 4 (outside APA) covers any location that does not, on present evidence, merit inclusion within an Archaeological Priority Area.
- Other APAs which have not yet been reviewed are not assigned to a tier.

7.1.11 Developments will be expected to **avoid or minimise harm to significant archaeological assets**. In some cases, remains can be incorporated into and/or interpreted in new development. The physical assets should, where possible, be made available to the public on-site and opportunities taken to actively present the site's archaeology. Where the archaeological asset cannot be preserved or managed on-site, appropriate provision must be made for the investigation, understanding, recording, dissemination and archiving of that asset, and must be undertaken by suitably-qualified individuals or organisations.

**Figure 7.4 - Archaeological Priority Areas and Registered Battlefield**



## Policy HC2 World Heritage Sites

- A Boroughs with World Heritage Sites, and those that are neighbours to authorities with World Heritage Sites, should include policies in their Development Plans that conserve, promote, actively protect and interpret the Outstanding Universal Value of World Heritage Sites, which includes the authenticity and integrity of their attributes and their management.
- B Development proposals in World Heritage Sites and their settings, including any buffer zones, should conserve, promote and enhance their Outstanding Universal Value, including the authenticity, integrity and significance of their attributes, and support their management and protection. In particular, they should not compromise the ability to appreciate their Outstanding Universal Value, or the authenticity and integrity of their attributes.
- C Development proposals with the potential to affect World Heritage Sites or their settings should be supported by Heritage Impact Assessments. Where development proposals may contribute to a cumulative impact on a World Heritage Site or its setting, this should be clearly illustrated and assessed in the Heritage Impact Assessment.
- D Up-to-date World Heritage Site Management Plans should be used to inform the plan-making process, and when considering planning applications, appropriate weight should be given to implementing the provisions of the World Heritage Site Management Plan.

- 7.2.1 The UNESCO World Heritage Sites at Maritime Greenwich, Royal Botanic Gardens Kew, Palace of Westminster and Westminster Abbey including St Margaret's Church, and the Tower of London are among the most important cultural heritage sites in the world and are a key feature of London's identity as a world city. In ratifying the World Heritage Convention, the UK Government has made a commitment to **protecting, conserving, presenting and transmitting to future generations the Outstanding Universal Value of World Heritage Sites** and to protecting and conserving their settings. Much of this commitment is discharged by local authorities, including the GLA, through their effective implementation of national, regional, and local planning policies for conserving and enhancing the historic environment.
- 7.2.2 The context of each of the four London World Heritage Sites is markedly different and the qualities of each is conditioned by the character and form of its surroundings as well as other cultural, intellectual, spatial or functional

relationships. The **surrounding built environment** must be carefully managed to ensure that the attributes of the World Heritage Sites that make them of Outstanding Universal Value are protected and enhanced, while allowing the surrounding area to change and evolve as it has for centuries.

- 7.2.3 The **setting of London's World Heritage Sites** consists of the surroundings in which they are experienced, and is recognised as fundamentally contributing to the appreciation of a World Heritage Site's Outstanding Universal Value. As all four of London's World Heritage Sites are located along the River Thames, the setting of these sites includes the adjacent riverscape as well as the surrounding landscape. Changes to the setting can have an adverse, neutral or beneficial impact on the ability to appreciate the sites' Outstanding Universal Value. The consideration of **views** is part of understanding potential impacts on the setting of the World Heritage Sites. Many views to and from World Heritage Sites are covered, in part, by the London Views Management Framework (see [Policy HC3 Strategic and Local Views](#) and [Policy HC4 London View Management Framework](#)). However, consideration of the attributes that contribute to their Outstanding Universal Value is likely to require other additional views to be considered. These should be set out in World Heritage Site Management Plans (see below), and supported wherever possible by the use of accurate 3D digital modelling and other best practice techniques.
- 7.2.4 **Policies protecting the Outstanding Universal Value of World Heritage Sites** (WHS) should be included in the Local Plans of those boroughs where visual impacts from developments could occur. It is expected that boroughs' plans (including but not limited to the following) should contain such policies: City of London (Tower of London WHS); Royal Borough of Greenwich (Maritime Greenwich WHS); Hounslow (Royal Botanical Gardens Kew WHS); Lambeth (Westminster WHS); Lewisham (Maritime Greenwich WHS); Richmond (Royal Botanical Gardens Kew WHS); Southwark (Tower of London WHS, Westminster WHS); Tower Hamlets (Tower of London WHS, Maritime Greenwich WHS); Wandsworth (Westminster WHS); City of Westminster (Westminster WHS). Supplementary Planning Guidance will provide further guidance on settings and buffer zones.
- 7.2.5 Boroughs should ensure that their Local Plan policies support the management of World Heritage Sites, details of which can be found in **World Heritage Site Management Plans**. For Outstanding Universal Value, Management Plans should set out:
- the attributes that convey the Outstanding Universal Value, and
  - the management systems to protect and enhance the Outstanding Universal Value of the World Heritage Sites.



- 7.2.6 The Mayor will support steering groups in managing the World Heritage Sites and will actively engage with stakeholders in the development and implementation of World Heritage Management Plans. It is expected that the boroughs with World Heritage Sites, GLA, Historic England and neighbouring boroughs will be part of the **World Heritage Site Steering Groups** that contribute to the management of the sites, including the drafting and adoption of Management Plans.

### Policy HC3 Strategic and Local Views

- A Strategic Views include significant buildings, urban landscapes or riverscapes that help to define London at a strategic level. They are seen from places that are publicly-accessible and well-used. The Mayor has designated a list of Strategic Views (Table 7.1) that he will keep under review. Development proposals must be assessed for their impact on a designated view if they fall within the foreground, middle ground or background of that view.
- B Within the designated views, the Mayor will identify landmarks that make aesthetic, historic, cultural or other contributions to the view and which assist the viewer's understanding and enjoyment of the view.
- C The Mayor will also identify Strategically-Important Landmarks in the views that make a very significant contribution to the image of London at the strategic level or provide a significant cultural orientation point. He will seek to protect vistas towards Strategically-Important Landmarks by designating landmark viewing corridors and wider setting consultation areas. These elements together form a Protected Vista. Each element of the vista will require a level of management appropriate to its potential impact on the viewer's ability to recognise and appreciate the Strategically-Important Landmark. These and other views are also subject to wider assessment beyond the Protected Vista.
- D The Mayor will also identify and protect aspects of views that contribute to a viewer's ability to recognise and appreciate a World Heritage Site's authenticity, integrity, and attributes of Outstanding Universal Value. This includes the identification of Protected Silhouettes of key features in a World Heritage Site.
- E The Mayor has prepared Supplementary Planning Guidance on the management of the designated views – the London View Management

Framework Supplementary Planning Guidance (LVMF SPG). The Mayor will, when necessary, review this guidance.

- F Boroughs should include all designated views, including the protected vistas, in their Local Plans and work with relevant land owners to ensure there is inclusive public access to the viewing location, and that the view foreground, middle ground and background are effectively managed in accordance with the LVMF SPG.
- G Boroughs should clearly identify local views in their Local Plans and strategies. Boroughs are advised to use the principles of [Policy HC4 London View Management Framework](#) for the designation and management of local views. Where a local view crosses borough boundaries, the relevant boroughs should work collaboratively to designate and manage the view.

- 7.3.1 A number of views make a significant contribution to the image and character of London at the strategic level. This could be because of their composition, their contribution to the legibility of the city, or because they provide an opportunity to see key landmarks as part of a broader townscape, panorama or river prospect. The Mayor will seek to **protect the composition and character of these views**, particularly if they are subject to significant pressure from development. New development can make a positive contribution to the views and this should be encouraged, but where development is likely to compromise the setting or visibility of a key landmark it should be resisted. The views that the Mayor has designated are listed in [Table 7.1](#), with [Figure 7.5](#) showing the indicative viewing locations of these designated views.
- 7.3.2 There are three types of Strategic Views designated in the London Plan – **London Panoramas, River Prospects, and Townscape Views** (including Linear Views). Each view can be considered in three parts; the foreground, middle ground and background. The front and middle ground areas are the areas between the viewing place and/or the natural features that form its setting. The background area to a view extends away from the foreground or middle ground into the distance. Part of the background may include built or landscape elements that provide a backdrop to a Strategically-Important Landmark.
- 7.3.3 The Mayor identifies **three Strategically-Important Landmarks** in the designated views: St Paul’s Cathedral, the Palace of Westminster and the Tower of London. Within some views, a Protected Vista to a Strategically-Important Landmark will be defined and used to protect the viewer’s ability to recognise

and appreciate the Strategically-Important Landmark. The **Protected Vista** is composed of two parts:

- Landmark Viewing Corridor – the area between the viewing place and a Strategically-Important Landmark that must be maintained if the landmark is to remain visible from the viewing place.
- Wider Setting Consultation Area – the area enclosing the Landmark Viewing Corridor in the foreground, middle ground and background of the Protected Vista. Development above a threshold height in this area could compromise the viewer’s ability to recognise and appreciate the Strategically-Important Landmark.

7.3.4 The London View Management Framework Supplementary Planning Guidance (LVMF SPG) provides further guidance on the **management of views** designated in this Plan. This includes plans for the management of views as seen from specific assessment points within the viewing places. The SPG provides advice on the management of the foreground, middle ground and background of each view. This guidance identifies viewing places within which viewing locations can be identified. It also specifies individual assessment points from which management guidance and assessment should be derived. Some views are experienced as a person moves through a viewing area and assessment of development proposals should consider this. The SPG provides guidance on the treatment of all parts of the view, and where appropriate the components of the Protected Vista for each view.

**Table 7.1 - Designated Strategic Views**

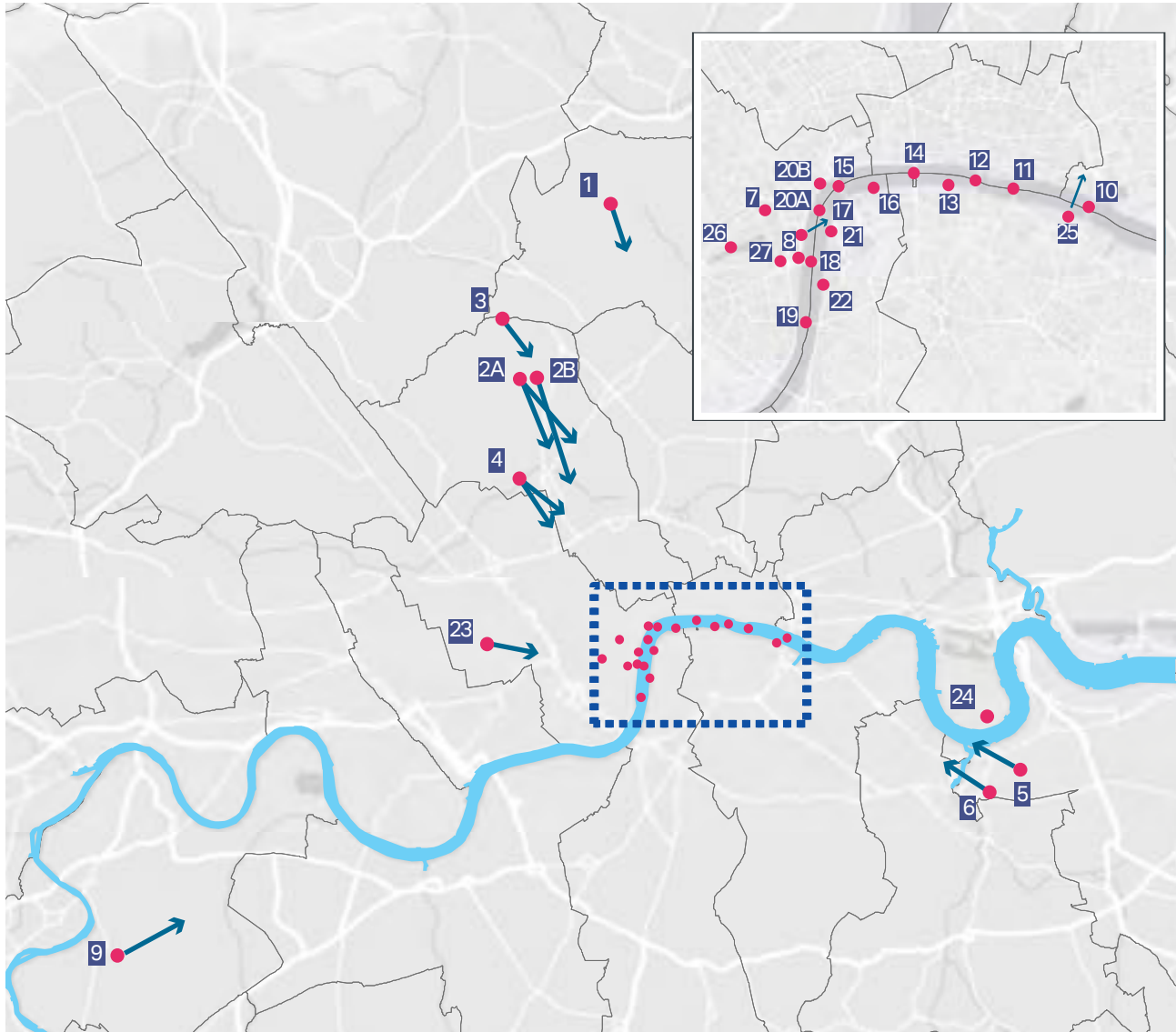
Reference	View
<b>London Panoramas</b>	
1	Alexandra Palace to Central London
2	Parliament Hill to Central London
3	Kenwood to Central London
4	Primrose Hill to Central London
5	Greenwich Park to Central London
6	Blackheath Point to Central London
<b>Linear Views</b>	
7	The Mall to Buckingham Palace
8	Westminster Pier to St Paul's Cathedral
9	King Henry VIII's Mound, Richmond to St Paul's Cathedral
<b>River Prospects</b>	
10	Tower Bridge
11	London Bridge
12	Southwark Bridge
13	Millennium Bridge and Thames side at Tate Modern
14	Blackfriars Bridge
15	Waterloo Bridge
16	The South Bank
17	Golden Jubilee/Hungerford Footbridges
18	Westminster Bridge
19	Lambeth Bridge
20	Victoria Embankment between Waterloo and Westminster Bridges
21	Jubilee Gardens and Thames side in front of County Hall

Reference	View
22	Albert Embankment between Westminster and Lambeth Bridges along Thames Path near St Thomas' Hospital
<b>Townscape Views</b>	
23	Bridge over the Serpentine, Hyde Park to Westminster
24	Island Gardens, Isle of Dogs to Royal Naval College
25	The Queen's Walk to Tower of London
26	St James' Park to Horse Guards Road
27	Parliament Square to Palace of Westminster

- 7.3.5 The Mayor will work with boroughs and landowners of the Protected Vista **viewing locations** to ensure the viewing points are clearly identified. Boroughs and landowners should manage the viewing locations to ensure they are accessible to the public and, where appropriate, mark the viewing location and provide information about landmarks that can be seen in the view. Vegetation in the foreground and middle ground of a view must be regularly maintained in accordance with the LVMF SPG management guidance to ensure the view is not obscured.
- 7.3.6 Clearly identifying **local views** in Local Plans and strategies enables the effective management of development in and around the views. This could take the form of geometrically defining the view requiring protection, in particular the assessment point and direction of the viewing location, through mapping or 3D modelling. Where local views are clearly identified they should be protected and managed in a similar manner as Strategic Views, following the principles of [Policy HC4 London View Management Framework](#).



Figure 7.5 - Designated Strategic Views



### London's Designated Strategic Views

- Strategic Views  
References refer to table 7.1

This map shows the indicative viewing locations of the designated strategic views, but not all the assessment points within the viewing places. The arrows indicate the direction of the view for the protected vistas. Please refer to the LVMF SPG for full details of the assessment points.

Source: GLA Planning

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## Policy HC4 London View Management Framework

- A Development proposals should not harm, and should seek to make a positive contribution to, the characteristics and composition of Strategic Views and their landmark elements. They should also preserve and, where possible, enhance viewers' ability to recognise and to appreciate Strategically-Important Landmarks in these views and, where appropriate, protect the silhouette of landmark elements of World Heritage Sites as seen from designated viewing places.
- B Development in the foreground, middle ground and background of a designated view should not be intrusive, unsightly or prominent to the detriment of the view.
- C Development proposals and external illumination of structures in the background of a view should give context to landmarks and not harm the composition of the view as a whole. Where a silhouette of a World Heritage Site is identified by the Mayor as prominent in a designated view, and well-preserved within its setting with clear sky behind, it should not be altered by new development appearing in its background. Assessment of the impact of development in the foreground, middle ground or background of the view or the setting of a Strategically-Important Landmark should take into account the effects of distance and atmospheric or seasonal changes.
- D Development proposals in designated views should comply with the following:
- 1) London Panoramas should be managed so that development fits within the prevailing pattern of buildings and spaces, and should not detract from the panorama as a whole. The management of views containing Strategically-Important Landmarks should afford them an appropriate setting and prevent a canyon effect from new buildings crowding in too close to the Strategically-Important Landmark in the foreground, middle ground or background where appropriate
  - 2) River Prospects should be managed to ensure that the juxtaposition between elements, including the river frontages and key landmarks, can be appreciated within their wider London context
  - 3) Townscape and Linear Views should be managed so that the ability to see specific buildings, or groups of buildings, in conjunction with the surrounding environment, including distant buildings within views, is preserved.

- E Viewing places should be accessible and managed so that they enhance people's experience of the view.
- F Where there is a Protected Vista:
- 1) development that exceeds the threshold height of a Landmark Viewing Corridor should be refused
  - 2) development in the Wider Setting Consultation Area should form an attractive element in its own right and preserve or enhance the viewer's ability to recognise and to appreciate the Strategically-Important Landmark. It should not cause a canyon effect around the Landmark Viewing Corridor
  - 3) development in the background should not harm the composition of the Protected Vistas, nor the viewer's ability to recognise and appreciate the Strategically-Important Landmark, whether the development proposal falls inside the Wider Setting Consultation area or not
  - 4) development in the foreground of the wider setting consultation area should not detract from the prominence of the Strategically-Important Landmark in this part of the view.

7.4.1 **Protected Vistas** are designed to preserve the viewer's ability to recognise and appreciate a Strategically-Important Landmark from a designated viewing place. Development that exceeds the threshold plane of the Landmark Viewing Corridor will have a negative impact on the viewer's ability to see the Strategically-Important Landmark and is therefore contrary to the London Plan. Development in the foreground, middle ground or background of a view can exceed the threshold plane of a Wider Setting Consultation Area if it does not damage the viewer's ability to recognise and to appreciate the Strategically-Important Landmark and if it does not dominate the Strategically-Important Landmark in the foreground or middle ground of the view. Development in the background of a Protected Vista that is inside or outside of the Wider Setting Consultation area should not harm the composition of the Protected Vistas.

7.4.2 Development should make a positive contribution and where possible **enhance the viewer's ability to recognise Strategically-Important Landmarks**. Where existing buildings currently detract from or block the view, this should not be used as justification for new development to likewise exceed the threshold height of the Landmark Viewing Corridor.

- 7.4.3 Opportunities to **reinstate Landmark Viewing Corridors** arising as a result of redevelopment and demolition of existing buildings that exceed Landmark Viewing Corridor threshold height should be taken whenever possible.

### Policy HC5 Supporting London's culture and creative industries

- A The continued growth and evolution of London's diverse cultural facilities and creative industries is supported. Development Plans and development proposals should:
- 1) protect existing cultural venues, facilities and uses where appropriate and support the development of new cultural venues in town centres and places with good public transport connectivity. To support this, boroughs are encouraged to develop an understanding of the existing cultural offer in their areas, evaluate what is unique or important to residents, workers and visitors and develop policies to protect those cultural assets and community spaces
  - 2) identify and promote new, or enhance existing, locally-distinct clusters of cultural facilities, venues and related uses defined as Cultural Quarters, especially where they can provide an anchor for local regeneration and town centre renewal
  - 3) identify, protect and enhance strategic clusters of cultural attractions
  - 4) consider the use of vacant properties and land for pop-ups or meanwhile uses for cultural and creative activities during the day and at night-time to stimulate vibrancy and viability and promote diversity in town centres, Cultural Quarters and other areas
  - 5) seek to ensure that Opportunity Areas and large-scale mixed-use developments include new cultural venues and/or facilities and spaces for outdoor cultural events.
- B Boroughs are encouraged to work with the Mayor and relevant stakeholders to identify Creative Enterprise Zones in Local Plans:
- 1) in areas that have emerging or existing clusters of creative industries; or
  - 2) in areas of identified demand and more deprived areas where there is evidence that the designation of a Creative Enterprise Zone will enhance the local economy and provide facilities and workspace for the creative industries.

- C Where a Creative Enterprise Zone has been identified, Local Plan policies should:
- 1) develop, enhance, protect and manage new and existing creative workspace, providing flexibility for changing business needs, and an attractive business environment including related ancillary facilities
  - 2) support existing, and the development of new, cultural venues within the Creative Enterprise Zone
  - 3) help deliver spaces that are suitable, attractive and affordable for the creative industries, taking into account the particular requirements of established and emerging creative businesses in the Creative Enterprise Zone in accordance with [Policy E2 Providing suitable business space](#), [Policy E4 Land for industry, logistics and services to support London's economic function](#) and [Policy E8 Sector growth opportunities and clusters](#)
  - 4) encourage the temporary use of vacant buildings (including heritage assets) and sites for creative workspace and activities
  - 5) integrate public transport, digital and other infrastructure, and services such as leisure, recreation, education and community facilities in the establishment and development of the Creative Enterprise Zone
  - 6) support a mix of uses which derive mutual benefits from, and do not compromise, the creative industries and cultural facilities in the Creative Enterprise Zone in line with the Agent of Change principle (see [Policy D13 Agent of Change](#))
  - 7) contribute to the achievement of wider objectives for the business location such as the economic vitality and diversity of a town centre or the intensification of an industrial area.

7.5.1 London's **rich cultural offer** includes visual and performing arts, music, spectator sports, festivals and carnivals, pop-ups and street markets, and a diverse and innovative food scene, which is important for London's cultural tourism. The vibrancy of London's culture is integrally linked to the diverse communities of the city, and grassroots venues and community projects are as important as London's famous cultural institutions in providing opportunities for all Londoners to experience and get involved in culture.



- 7.5.2 The capital's cultural offer is often informed, supported and influenced by the work of the creative industries such as advertising, architecture, design, fashion, publishing, television, video games, radio and film. Cultural facilities and venues include premises for cultural production and consumption such as performing and visual arts studios, creative industries workspace, museums, theatres, cinemas, libraries, music, spectator sports, and other entertainment or performance venues, including pubs and night clubs. Although primarily serving other functions, the public realm, community facilities, places of worship, parks and skate-parks can provide important settings for a wide range of arts and cultural activities.
- 7.5.3 London's culture sector and the creative industries deliver both **economic and social benefits** for the capital. In 2015, the Gross Value Added (GVA) of the creative industries in London was estimated at £42 billion, accounting for just under half of the UK total from these industries, and contributing 11.1 per cent to London's total GVA. Cultural tourism supported 80,000 jobs and contributed £3.2 billion of GVA to London in 2013, just under a third of the overall contribution from the tourism sector as a whole. As well as being one of London's most dynamic sectors, culture also plays a role in building strong communities, increasing healthy life outcomes and generating civic pride.
- 7.5.4 Despite this positive general picture, London's competitive land market means that the industry is struggling to find sufficient venues to grow and thrive, and is **losing essential spaces and venues** for cultural production and consumption including pubs, night clubs, venues that host live or electronic music and rehearsal facilities. Creative businesses and artists also struggle to find workspace and secure long-term financing and business support as their activities are perceived to be 'risky' or of non-commercial value.
- 7.5.5 Boroughs are encouraged to develop an understanding of the existing cultural offer in their areas, **evaluate what is unique or important to residents, workers and visitors** and develop policies to protect those cultural assets and community spaces. Boroughs should draw on the Mayor's forthcoming Cultural Infrastructure Plan to assess and develop their cultural offer. Boroughs should also consider how the cultural offer serves different groups of people (such as young people, BAME groups and the LGBT+ community), and where the cultural offer is lacking for particular groups. Boroughs should put in place policies and strategies to ensure that cultural facilities catering for such groups and communities are protected, especially facilities that are used in the evening and night time.
- 7.5.6 The loss of cultural venues, facilities or spaces can have a detrimental effect on an area, particularly when they serve a local community function. Where

possible, boroughs should protect such cultural facilities and uses, and support alternative cultural uses, particularly those with an evening or night-time use, and consider nominations to designate them as **Assets of Community Value**. Where a development proposal leads to the loss of a venue or facility, boroughs should consider requiring the replacement of that facility or use.

- 7.5.7 Boroughs are encouraged to support opportunities to use vacant buildings and land for flexible and temporary **meanwhile uses or 'pop-ups'** especially for alternative cultural day and night-time uses. The use of temporary buildings and spaces for cultural and creative uses can help stimulate vibrancy, vitality and viability in town centres by creating social and economic value from vacant properties. Meanwhile uses can also help prevent blight in town centres and reduce the risk of arson, fly tipping and vandalism. The benefits of meanwhile use also include short-term affordable accommodation for SMEs and individuals, generating a short-term source of revenue for the local economy and providing new and interesting shops, cultural and other events and spaces, which can attract longer-term business investment. Parameters for any meanwhile use, particularly its longevity and associated obligations, should be established from the outset and agreed by all parties.
- 7.5.8 Events and activities such as festivals, seasonal markets, exhibitions, performances, outdoor concerts and busking are not always dependent on using a dedicated cultural facility or venue and can make use of a range of **outdoor spaces** including streets, parks and other public areas. These types of activities, which are often free, offer a way for everyone to experience and participate in London's rich cultural life. The opportunity to incorporate these uses should be identified and facilitated through careful design and consideration of the impacts, for example on residents, visitors and biodiversity.
- 7.5.9 As well as protecting existing venues and facilities, boroughs should also work with a range of partners to develop and promote clusters of cultural activities and related uses and define them in their Local Plan. A successful **Cultural Quarter** should build on the existing cultural character of an area and encourage a mix of uses, including cafés, restaurants and bars alongside cultural assets and facilities, to attract visitors and generate interest. A Cultural Quarter can be used to form the basis for sustained cultural activity but may also include temporary activities and uses such as festivals, markets, exhibitions, performances and other cultural events.
- 7.5.10 Where appropriate, boroughs should use Cultural Quarters to seek **synergies between cultural provision, schools, and higher and further education** which can be used to nurture volunteering, new talent and audiences. This can include

partnerships with a range of cultural organisations, such as libraries, museums, galleries, music venues, dance studios, and theatres.

- 7.5.11 Boroughs should maximise opportunities for developing **Cultural Quarters in Opportunity Areas, other Areas for Regeneration and large-scale developments**. The inclusion of new cultural venues and facilities can assist with place-making, creating an attractive and vibrant area for residents, workers and visitors, as well as helping to form the character and distinctiveness of a new place.
- 7.5.12 London is internationally-renowned for its historic environment and cultural institutions, which are major visitor attractions as well as making an enormous contribution to the capital's culture and heritage. There are many areas in London which are rich in cultural heritage and have a unique cultural offer. These act as key visitor hubs for Londoners and domestic and international tourists and as such should be protected and promoted. They include: clusters of museums such as the South Kensington museums complex; the theatres, concert halls and galleries of the Southbank/Bankside/London Bridge area; the theatres and cinemas of the West End; Wembley Stadium and Wembley Arena; the Greenwich Riverside and O2 Centre; the Olympic Park; and London's Arcadia including Kew Gardens, parks, historic buildings and landscapes between Hampton Court and Kew along the River Thames. Boroughs should identify these and other **strategic clusters of cultural attractions** in their Local Plans.
- 7.5.13 Creative industries play an important role in London's economy and its cultural offer; and as a sector are growing at a faster rate than any other area of the economy. As part of his support for the creative industries, the Mayor is committed to working with boroughs and other relevant stakeholders to identify and set up **Creative Enterprise Zones (CEZs)**. Setting up a CEZ can help boost the local economy of more deprived areas and support their regeneration. CEZs will support the provision of dedicated small industrial and creative workspaces and will seek to address issues of affordability and suitability of workspaces for artists and creative businesses.
- 7.5.14 CEZs should seek to **protect, develop and deliver new spaces the creative industries need** to produce, manufacture, design, rehearse and create cultural goods, as well as ancillary facilities where they can meet clients, network, share knowledge and showcase their work. Boroughs will be responsible for defining these areas in their Local Plans and developing policies to provide the workspace the industries need. This should include protecting existing workspace and encouraging new workspaces for the creative industries, ensuring that suitable business space and affordable workspace is made available in accordance with [Policy E2 Providing suitable business space](#),

Policy E3 Affordable workspace and Policy E8 Sector growth opportunities and clusters, and encouraging the temporary use of vacant buildings for creative uses. In developing policies and strategies for CEZs, Boroughs should engage with local CEZ consortiums, communities and businesses.

### Policy HC6 Supporting the night-time economy

- A Boroughs should develop a vision for the night-time economy, supporting its growth and diversification, in particular within strategic areas of night-time activity (see [Table A1.1](#) and [Figure 7.6](#)), building on the Mayor’s Vision for London as a 24-Hour City.<sup>129</sup>
- B In Development Plans, town centre strategies and planning decisions, boroughs should:
- 1) promote the night-time economy, where appropriate, particularly in the Central Activities Zone, strategic areas of night-time activity, and town centres where public transport such as the Night Tube and Night Buses are available
  - 2) improve access, inclusion and safety, and make the public realm welcoming for all night-time economy users and workers
  - 3) diversify the range of night-time activities, including extending the opening hours of existing daytime facilities such as shops, cafés, libraries, galleries and museums
  - 4) address the cumulative impact of high concentrations of licensed premises on anti-social behaviour, noise pollution, health and wellbeing and other issues for residents and nearby uses, and seek ways to diversify and manage these areas
  - 5) ensure night-time economy venues are well-served with safe and convenient night-time transport
  - 6) protect and support evening and night-time cultural venues such as pubs, night clubs, theatres, cinemas, music and other arts venues.
- C Promoting management of the night-time economy through an integrated approach to planning and licensing, out-of-hours servicing and deliveries, safety and security, and environmental and cleansing services should

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<https://www.london.gov.uk/what-we-do/arts-and-culture/arts-and-culture-publications/londons-first-ever-24-hour-vision>

be supported. Boroughs should work closely with stakeholders such as neighbouring boroughs, the police, local businesses, patrons, workers and residents.

- 7.6.1 The **night-time economy** refers to all economic activity taking place between the hours of 6pm and 6am, and includes evening uses. Night-time economic activities include eating, drinking, entertainment, shopping and spectator sports, as well as hospitality, cleaning, wholesale and distribution, transport and medical services, which employ a large number of night-time workers.
- 7.6.2 The night-time economy is becoming increasingly important to London's economy. The Mayor is keen to **promote London as a 24-hour global city**, taking advantage of London's competitive edge and attractiveness for businesses and people looking to expand beyond the usual daytime economy into night-time economic opportunities. However, 24-hour activities are not suitable for every part of London, and boroughs should balance the needs of local residents in all parts of London with the economic benefits of promoting a night-time economy.
- 7.6.3 London's night-time economy is generally focused in the Central Activities Zone (CAZ) and within town centres across the city. Different areas of night-time activity function at different scales and have different catchments. They have been classified, as set out in [Table A1.1](#) and [Figure 7.6](#), into three broad categories:
- NT1 – Areas of international or national significance
  - NT2 – Areas of regional or sub-regional significance
  - NT3 – Areas with more than local significance
- 7.6.4 Each night-time economy area will have its own character, which should be recognised and supported in order to maintain the **rich diversity of London's night-time economy**. Areas of international or national significance play a crucial role in putting London on the world stage, bringing internationally-renowned culture, performers and productions. Regional and sub-regional areas attract visitors from across and beyond London, and often have one or more larger venues and a mature night-time economy. These are generally in London's larger town centres. Areas with more than local significance draw visitors from other parts of London and tend to feature smaller venues and premises.
- 7.6.5 In addition, there are some town centres where the night-time economy serves the local area as well as other specific locations – such as London's wholesale

markets, major hospitals, and some industrial areas – where there is **significant economic or service activity at night**. This includes some retail and service industries, health services, policing and security, and transport and logistics. In exercising their various functions, boroughs should have regard to the strategic areas of night-time activity, as well as other night-time economic functions, and should set out strategies and policies that support the specific role of these areas in order to promote London's night-time economy.

- 7.6.6 There are many benefits to promoting night-time economic activity such as generating jobs, improving income from leisure and tourism, providing opportunities for social interaction, and making town centres safer by increasing activity and passive surveillance. Managing issues such as transport, servicing, increased noise, crime, anti-social behaviour, perceptions of safety, the quality of the street environment, and the potential negative effects on the health and wellbeing of Londoners, will require specific approaches tailored to the night-time environment, activities and related behaviour. Boroughs are encouraged to consider appropriate **management strategies and mitigation measures** to reduce negative impacts on the quality of life of local residents, workers and night-time economy customers, particularly in areas with high concentrations of licensed premises. Boroughs should also take account of local circumstances when considering whether to concentrate or disperse evening and night-time activities in town centres or within the CAZ. Boroughs should consider applying for accreditation with schemes such as Purple Flag<sup>130</sup> which provide a standard of excellence in managing the night-time economy.
- 7.6.7 Large concentrations of night-time activities can result in some places lacking activity and vitality during the day. Boroughs should consider opportunities to encourage the daytime uses of buildings that are mainly used for night-time activities to help **diversify the 24-hour offer**. Similarly, boroughs should explore the benefits of expanding the range of night-time economy activities to include extending opening hours and alternative evening and night-time uses of existing daytime facilities such as shops, cafés, restaurants, markets, community centres, libraries, theatres and museums. The temporary use of spaces and venues in the evening and at night can enhance the vibrancy and vitality of the night-time economy, particularly meanwhile uses of vacant premises, for example as arts venues, nightclubs, bars or restaurants.
- 7.6.8 The recently introduced Night Tube that operates on many Tube lines throughout the weekend, and the extensive network of night buses, has helped to create a public transport system that can support a 24-hour city including making travel easier for London's many night workers. Boroughs are encouraged

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<https://www.atcm.org/purple-flag>

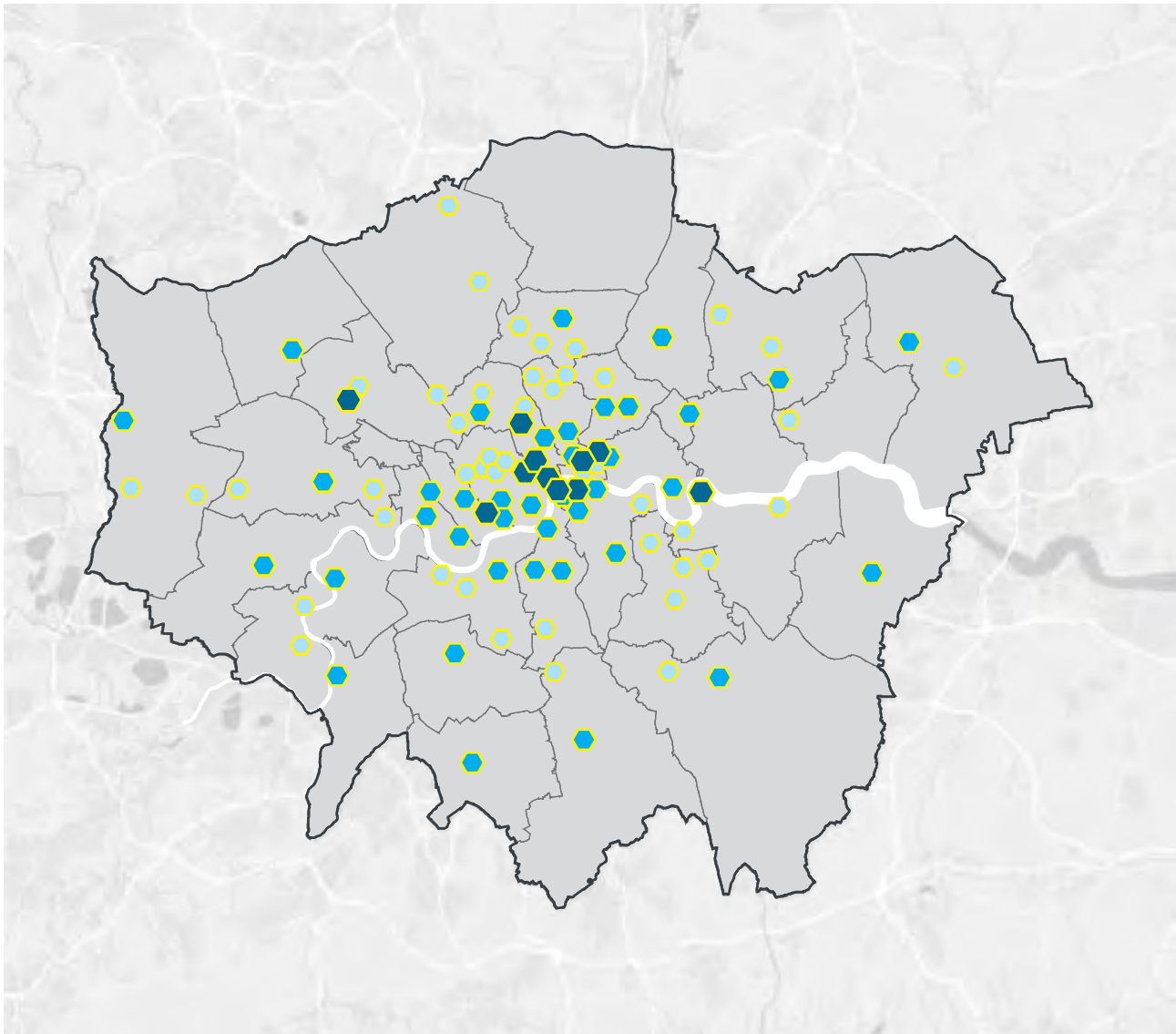


to work with Transport for London (TfL) to take advantage of **improved night-time public transport** to identify areas where night-time economic activity can be promoted and enhanced in a safe and attractive way. This would include considering planning applications for night-time venues and activities to diversify and enhance the night-time offer in town centres, particularly those that are within or well-connected to Areas for Regeneration (see [Policy SD10 Strategic and local regeneration](#)). Outer London boroughs, in particular, should consider the opportunities offered by an extended Night Tube and Night Bus network to increase the night-time offer in town centres for local residents, workers and visitors.




- 7.6.9 Boroughs should explore the benefits of **diversifying the night-time mix of uses**, particularly in areas where there are high concentrations of licensed premises, along with extended opening times of public places and spaces. This can help attract a more diverse range of visitors, including those who feel excluded from alcohol-based entertainment activities. It can also help decrease crime, anti-social behaviour and the fear of crime.
- 7.6.10 The night-time economy doesn't only happen inside; many night-time activities make use of **outside spaces including the public realm**, and enjoying the public spaces of the city at night is an important part of the night-time experience. This requires careful and co-ordinated management between a wide variety of stakeholders, including residents, to ensure that the city can be enjoyed at night to its fullest, and that the night-time economy complements rather than conflicts with daytime activities. Impacts such as noise and light pollution on local wildlife and biodiversity should be considered through appropriate location, design and scheduling, to address the requirements of [Policy G6 Biodiversity and access to nature](#).
- 7.6.11 **Making London's night-time culture more enjoyable and inclusive** requires ensuring a wide range of evening and night-time activities are on offer to London's diverse population. In recent years, many valued night-time venues have been lost, and this has disproportionately affected particular groups. There are also groups of people who avoid town centres and night-time activities for a variety of reasons, for example physical barriers and lack of facilities for disabled people and older people, perceptions around safety and security particularly for women, those who feel excluded for socio-economic reasons and issues of staff attitudes towards, and awareness of, LGBT+ and BAME groups. Boroughs should work with land owners, investors and businesses to address perceived barriers to accessing the night-time economy and enhance the experience of London at night. This can include requiring new developments to provide accessible and gender-neutral toilets (see [Policy S6 Public toilets](#)), supporting venues



**Figure 7.6 - Town centres and night-time economy roles – distinguishing those of international, sub-regional and more than local importance**



**Town Centre Network  
Night Time Economy**

-  NT1 International/National
-  NT2 Regional/Sub-regional
-  NT3 More than local

Source: GLA Planning

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that serve specific groups (for example through the LGBT+ Venues Charter),<sup>131</sup> working with local police and businesses to make streets and the public realm safer and more welcoming, ensuring cleansing services are procured to clean up litter and sanitise streets and public areas, and working with local businesses, local communities, TfL and logistics operators to optimise servicing that occurs at night or supports the night-time economy.

### Policy HC7 Protecting public houses

- A In Development Plan Documents, town centre strategies, and planning decisions, boroughs should:
- 1) protect public houses where they have a heritage, economic, social or cultural value to local communities, or where they contribute to wider policy objectives for town centres, night-time economy areas, Cultural Quarters and Creative Enterprise Zones
  - 2) support proposals for new public houses where they would stimulate town centres, Cultural Quarters, the night-time economy and mixed-use development, taking into account potential negative impacts.
- B Applications that propose the loss of public houses with heritage, cultural, economic or social value should be refused unless there is authoritative marketing evidence that demonstrates that there is no realistic prospect of the building being used as a pub in the foreseeable future.
- C Development proposals for redevelopment of associated accommodation, facilities or development within the curtilage of the public house that would compromise the operation or viability of the public house use should be resisted.

7.7.1 **Pubs are a unique and intrinsic part of British culture.** Many pubs are steeped in history and are part of London's built, social and cultural heritage. Whether alone, or as part of a cultural mix of activities or venues, pubs are often an integral part of an area's day, evening and night-time culture and economy. An individual pub can also be at the heart of a community's social life, often providing a local meeting place, a venue for entertainment or a focus for social

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<https://www.london.gov.uk/what-we-do/arts-and-culture/how-were-protecting-lgbt-nightlife-venues>



gatherings. More recently, some pubs have started providing library services and parcel collection points as well as food to increase their offer and appeal to a wider clientele.

- 7.7.2 Through their unique and varied roles, pubs can contribute to the regeneration of town centres, Cultural Quarters and local tourism, as well as providing a focus for existing and new communities, and meeting the needs of particular groups, such as the LGBT+ and BAME communities. However, **pubs are under threat from closure** and redevelopment pressures, with nearly 1,200 pubs in London lost in 15 years.<sup>132</sup> The recent changes to the Town and Country Planning Act (General Permitted Development Order) (England) (2015) have, however, removed permitted development rights that previously allowed pubs and bars to change planning Use Class to shops, financial and professional services, restaurants and cafés without prior planning approval. This change in legislation offers greater protection for pubs and also incorporates a permitted development right that allows pub owners to introduce a new mixed use (A3/ A4) which should provide flexibility to enhance a food offer beyond what was previously allowed as ancillary to the main pub use.
- 7.7.3 Many pubs are popular because they have intrinsic character. This is often derived from their architecture, interior and exterior fittings, their long-standing use as a public house, their history, especially as a place of socialising and entertainment catering for particular groups, their ties to local sports and other societies, or simply their role as a meeting place for the local community. In developing strategies and policies to enhance and retain pubs, boroughs should consider the **individual character of pubs** in their area and the broad range of characteristics, functions and activities that give pubs their particular value, including opportunities for flexible working.
- 7.7.4 **New pubs**, especially as part of a redevelopment or regeneration scheme, can provide a cultural and social focus for a neighbourhood, particularly where they offer a diverse range of services, community functions and job opportunities. However, it is important when considering proposals for new pubs that boroughs take account of issues such as cumulative impact zones, the Agent of Change principle (see [Policy D13 Agent of Change](#)) and any potential negative impacts. Boroughs should consider the replacement of existing pubs in redevelopment and regeneration schemes, where the loss of an existing pub is considered acceptable.
- 7.7.5 Boroughs should take a positive approach to designating pubs as an **Asset of Community Value** (ACV) when nominated by a community group. Listing a pub

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Closing time: London's public houses, GLA Economics, April 2017

as an ACV gives voluntary groups and organisations the opportunity to bid for it if it is put up for sale. The 'right to bid' is not a right to buy and although owners of the asset have to consider bids from community groups, they do not have to accept them. An ACV listing does, nevertheless, give communities an increased chance to save a valued pub or other local facility. Boroughs should consider the listing of a pub as an ACV as a material consideration when assessing applications for a change of use and consider compulsory purchase orders where appropriate.

- 7.7.6 When **assessing whether a pub has heritage, cultural, economic or social value**, boroughs should take into consideration a broad range of characteristics, including whether the pub:
- a. is in a Conservation Area
  - b. is a locally- or statutorily-listed building
  - c. has a licence for entertainment, events, film, performances, music or sport
  - d. operates or is closely associated with a sports club or team
  - e. has rooms or areas for hire
  - f. is making a positive contribution to the night-time economy
  - g. is making a positive contribution to the local community
  - h. is catering for one or more specific group or community.
- 7.7.7 To demonstrate authoritative **marketing evidence** that there is no realistic prospect of a building being used as a pub in the foreseeable future, boroughs should require proof that all reasonable measures have been taken to market the pub to other potential operators. The pub should have been marketed as a pub for at least 24 months at an agreed price following an independent valuation, and in a condition that allows the property to continue functioning as a pub. The business should have been offered for sale locally and London-wide in appropriate publications and through relevant specialised agents.
- 7.7.8 Many pubs built on more than one floor include ancillary uses such as function rooms and staff accommodation. Potential profit from development makes the conversion of upper pub floors to residential use extremely attractive to owners. Beer gardens and other outside space are also at risk of loss to residential development. The **change to residential use** of these areas can limit the operational flexibility of the pub, make it less attractive to customers, and prevent ancillary spaces being used by the local community. It can also threaten the viability of a pub through increased complaints about noise and other issues from new residents. Boroughs should resist proposals for redevelopment of associated accommodation, facilities or development within the curtilage of the

public house that would compromise the operation or viability of a public house. Where such proposals would not compromise the operation or viability of the public house, developers must put in place measures that would mitigate the impacts of noise for new and subsequent residents (see [Policy D13 Agent of Change](#)).

## Chapter 8

# Green Infrastructure and Natural Environment



## Policy G1 Green infrastructure

- A London's network of green and open spaces, and green features in the built environment, should be protected and enhanced. Green infrastructure should be planned, designed and managed in an integrated way to achieve multiple benefits.
- B Boroughs should prepare green infrastructure strategies that identify opportunities for cross-borough collaboration, ensure green infrastructure is optimised and consider green infrastructure in an integrated way as part of a network consistent with Part A.
- C Development Plans and area-based strategies should use evidence, including green infrastructure strategies, to:
  - 1) identify key green infrastructure assets, their function and their potential function
  - 2) identify opportunities for addressing environmental and social challenges through strategic green infrastructure interventions.
- D Development proposals should incorporate appropriate elements of green infrastructure that are integrated into London's wider green infrastructure network.

8.1.1 A **green infrastructure approach** recognises that the network of green and blue spaces,<sup>133</sup> street trees, green roofs and other major assets such as natural or semi-natural drainage features must be planned, designed and managed in an integrated way. Policy G1 sets out the strategic green infrastructure approach and provides a framework for how this can be assessed and planned for. The remaining policies in this chapter provide more detail on specific aspects of green infrastructure, which work alongside other policies in the Plan to achieve multiple objectives. Objectives include: promoting mental and physical health and wellbeing; adapting to the impacts of climate change and the urban heat-island effect; improving air and water quality; encouraging walking and cycling; supporting landscape and heritage conservation; learning about the environment; supporting food growing and conserving and enhancing

<sup>133</sup> London's waterways and their multifunctional role are specifically addressed in [Policy SI 14 Waterways – strategic role](#) to [Policy SI 17 Protecting and enhancing London's waterways](#).





biodiversity and ecological resilience alongside more traditional functions of green space such as play, sport and recreation.

- 8.1.2 All development takes place within a wider environment and green infrastructure should be an integral element and not an ‘add-on’. Its **economic and social value** should be recognised as highlighted in the London i-Tree Assessment<sup>134</sup> and the Natural Capital Account for London’s Public Parks.<sup>135</sup>
- 8.1.3 To help deliver on his manifesto commitment to make more than half of London green by 2050, the Mayor will review and update existing Supplementary Planning Guidance on the All London Green Grid – London’s strategic green infrastructure framework – to provide **guidance** on the strategic green infrastructure network and the preparation of green infrastructure strategies.

## Policy G2 London’s Green Belt

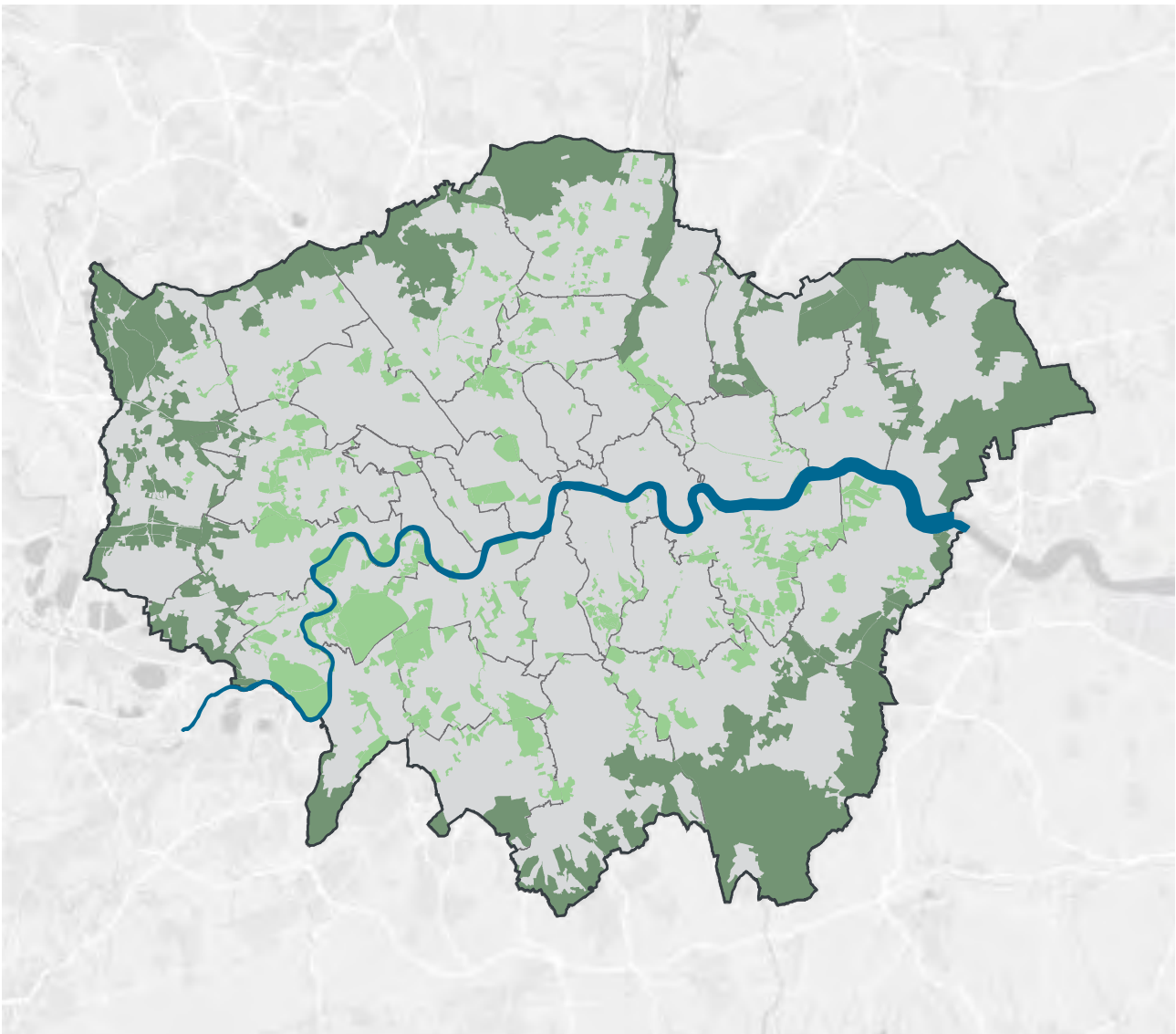
- A The Green Belt should be protected from inappropriate development:
- 1) development proposals that would harm the Green Belt should be refused except where very special circumstances exist,
  - 2) subject to national planning policy tests, the enhancement of the Green Belt to provide appropriate multi-functional beneficial uses for Londoners should be supported.
- B Exceptional circumstances are required to justify either the extension or de-designation of the Green Belt through the preparation or review of a Local Plan.

<sup>134</sup> Valuing London’s Urban Forest - Results of the London i-Tree Eco Project, Treeconomics, 2015, <https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/valuing-londons-urban-forest>

<sup>135</sup> Natural capital accounts for public green space in London, Vivid Economics, 2017, <https://www.london.gov.uk/what-we-do/environment/parks-green-spaces-and-biodiversity/green-infrastructure/natural-capital-account-london?source=vanityurl>



- 8.2.1 The Mayor strongly supports the **continued protection of London's Green Belt**. The NPPF provides a clear direction for the management of development within the Green Belt and sets out the processes and considerations for defining Green Belt boundaries. London's Green Belt makes up 22 per cent of London's land area and performs multiple beneficial functions for London, such as combating the urban heat island effect, growing food, and providing space for recreation. It also provides the vital function of containing the further expansion of built development. This has helped to drive the re-use and intensification of London's previously developed brownfield land to ensure London makes efficient use of its land and infrastructure, and that inner urban areas benefit from regeneration and investment.
- 8.2.2 Openness and permanence are essential characteristics of the Green Belt, but, despite being open in character, some parts of the Green Belt do not provide significant benefits to Londoners as they have become derelict and unsightly. This is not, however, an acceptable reason to allow development to take place. These derelict sites may be making positive contributions to biodiversity, flood prevention, and climate resilience. The Mayor will work with boroughs and other strategic partners to enhance access to the Green Belt and to **improve the quality** of these areas in ways that are appropriate within the Green Belt.

**Figure 8.1 - Green Belt and Metropolitan Open Land****Green Belt and Metropolitan Open Land**

- Green Belt
- Metropolitan Open Land

Source: Borough  
Local Plans

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database right (2018)

## Policy G3 Metropolitan Open Land

- A Metropolitan Open Land (MOL) is afforded the same status and level of protection as Green Belt:
- 1) MOL should be protected from inappropriate development in accordance with national planning policy tests that apply to the Green Belt
  - 2) boroughs should work with partners to enhance the quality and range of uses of MOL.
- B The extension of MOL designations should be supported where appropriate. Boroughs should designate MOL by establishing that the land meets at least one of the following criteria:
- 1) it contributes to the physical structure of London by being clearly distinguishable from the built-up area
  - 2) it includes open air facilities, especially for leisure, recreation, sport, the arts and cultural activities, which serve either the whole or significant parts of London
  - 3) it contains features or landscapes (historic, recreational, biodiverse) of either national or metropolitan value
  - 4) it forms part of a strategic corridor, node or a link in the network of green infrastructure and meets one of the above criteria.
- C Any alterations to the boundary of MOL should be undertaken through the Local Plan process, in consultation with the Mayor and adjoining boroughs. MOL boundaries should only be changed in exceptional circumstances when this is fully evidenced and justified, taking into account the purposes for including land in MOL set out in Part B.

- 8.3.1 Metropolitan Open Land is strategic open land within the urban area. It plays an important role in London's green infrastructure – the network of green spaces, features and places around and within urban areas. **MOL protects and enhances the open environment** and improves Londoners' quality of life by providing localities which offer sporting and leisure use, heritage value, biodiversity, food growing, and health benefits through encouraging walking, running and other physical activity.
- 8.3.2 Metropolitan Open Land is afforded the same status and protection as Green Belt land. Any proposed **changes to existing MOL boundaries** must

be accompanied by thorough evidence which demonstrates that there are exceptional circumstances consistent with the requirements of national policy.

- 8.3.3 Additional stretches of the River Thames should not be designated as Metropolitan Open Land, as this may restrict the use of the river for transport infrastructure related uses. In considering whether there are exceptional circumstances to change MOL boundaries alongside the Thames and other waterways, boroughs should have regard to Policy SI 14 Waterways – strategic role to Policy SI 17 Protecting and enhancing London’s waterways and the need for certain types of development to help maximise the multifunctional benefits of waterways including their role in transporting passengers and freight.
- 8.3.4 Proposals to **enhance access to MOL** and to improve poorer quality areas such that they provide a wider range of benefits for Londoners that are appropriate within MOL will be encouraged. Examples include improved public access for all, inclusive design, recreation facilities, habitat creation, landscaping improvement and flood storage.

## Policy G4 Open space

A Development Plans should:

- 1) undertake a needs assessment of all open space to inform policy. Assessments should identify areas of public open space deficiency, using the categorisation set out in Table 8.1 as a benchmark for the different types required.<sup>136</sup> Assessments should take into account the quality, quantity and accessibility of open space
- 2) include appropriate designations and policies for the protection of open space to meet needs and address deficiencies
- 3) promote the creation of new areas of publicly-accessible open space particularly green space, ensuring that future open space needs are planned for, especially in areas with the potential for substantial change
- 4) ensure that open space, particularly green space, included as part of development remains publicly accessible.

<sup>136</sup>

Areas of Deficiency in Access to Public Open Space, GiGL, <https://www.gigl.org.uk/open-spaces/areas-of-deficiency-in-access-to-public-open-space/?highlight=open%20space%20deficiency>

B Development proposals should:

- 1) not result in the loss of protected open space
- 2) where possible create areas of publicly accessible open space, particularly in areas of deficiency.

- 8.4.1 Open spaces, particularly those planned, designed and managed as green infrastructure – provide a wide range of social, health and environmental benefits, and are a **vital component of London's infrastructure**. All types of open space, regardless of their function, are valuable in their ability to connect Londoners to open spaces at the neighbourhood level. Connectivity across the network of open spaces is particularly important as this provides opportunities for walking and cycling. Green spaces are especially important for improving wildlife corridors.
- 8.4.2 Boroughs should undertake an open space needs assessment, which should be in-line with objectives in **green infrastructure strategies** (Policy G1 Green infrastructure) (drawing from existing strategies such as play, trees and playing pitches). These strategies and assessments should inform each other to deliver multiple benefits in recognition of the cross-borough function and benefits of some forms of green infrastructure. Assessments should take into account all types of open space, including open space that is not publicly accessible, to inform local plan policies and designations.
- 8.4.3 The creation of new open space, particularly green space, is essential in helping to meet the Mayor's target of making more than 50 per cent of London green by 2050. **New provision or improved public access** should be particularly encouraged in areas of deficiency in access to public open space. It is important to secure appropriate management and maintenance of open spaces to ensure that a wide range of benefits can be secured and any conflicts between uses are minimised.
- 8.4.4 Proposals to **enhance open spaces** to provide a wider range of benefits for Londoners will be encouraged. Examples could include improved public access, inclusive design, recreation facilities, habitat creation, landscaping improvement or Sustainable Drainage Systems (SuDS).



**Table 8.1 - Public open space categorisation**

Open Space categorisation	Description	Size guideline	Distance from homes
Regional Parks	These are large areas, corridors or networks of open space, the majority of which will be publicly-accessible and provide a range of facilities and features offering recreational, ecological, landscape, cultural or green infrastructure benefits. They offer a combination of facilities and features that are unique within London, are readily accessible by public transport and are managed to meet best practice quality standards.	400 ha	3.2 to 8 km
Metropolitan Parks	These are large areas of open space that provide a similar range of benefits to Regional Parks and offer a combination of facilities at a sub-regional level. They are readily accessible by public transport and are managed to meet best practice quality standards.	60 ha	3.2 km
District Parks	These are large areas of open space that provide a landscape setting with a variety of natural features. They provide a wide range of activities, including outdoor sports facilities and playing fields, children's play for different age groups and informal recreation pursuits.	20 ha	1.2 km
Local Parks and Open Spaces	These provide for court games, children's play, sitting out areas and nature conservation areas.	2 ha	400 m



Open Space categorisation	Description	Size guideline	Distance from homes
Small Open Spaces	These include public gardens, sitting out areas, children's play spaces or other areas of a specialist nature, including nature conservation areas.	under 2 ha	less than 400 m
Pocket Parks	These are small areas of open space that provide natural surfaces and shaded areas for informal play and passive recreation that sometimes have seating and play equipment.	under 0.4 ha	less than 400 m
Linear Open Spaces	These are open spaces and towpaths alongside the Thames, canals and other waterways, paths, disused railways, nature conservation areas and other routes that provide opportunities for informal recreation. They can often be characterised by elements that are not public open space but that contribute to the enjoyment of the space.	N/A	N/A

This table gives examples of typical open space typologies in London; other open space types may be included to reflect local circumstances

## Policy G5 Urban greening

- A Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage.
- B Boroughs should develop an Urban Greening Factor (UGF) to identify the appropriate amount of urban greening required in new developments. The UGF should be based on the factors set out in Table 8.2, but tailored to local circumstances. In the interim, the Mayor recommends a target score of 0.4 for developments that are predominately residential, and a target score of 0.3 for predominately commercial development (excluding B2 and B8 uses).
- C Existing green cover retained on site should count towards developments meeting the interim target scores set out in (B) based on the factors set out in Table 8.2.

- 8.5.1 The inclusion of **urban greening measures** in new development will result in an increase in green cover, and **should be integral to planning** the layout and design of new buildings and developments. This should be considered from the beginning of the design process.
- 8.5.2 **Urban greening** covers a wide range of options including, but not limited to, street trees, green roofs, green walls, and rain gardens. It can help to meet other policy requirements and provide a range of benefits including amenity space, enhanced biodiversity, addressing the urban heat island effect, sustainable drainage and amenity – the latter being especially important in the most densely developed parts of the city where traditional green space is limited. The management and ongoing maintenance of green infrastructure should be considered and secured through the planning system where appropriate.
- 8.5.3 A number of cities have successfully adopted a 'green space factor' to encourage more and better urban greening. The Mayor has developed a generic **Urban Greening Factor** model to assist boroughs and developers in determining the appropriate provision of urban greening for new developments.

This is based on a review of green space factors in other cities.<sup>137</sup> The factors outlined in Table 8.2 are a simplified measure of various benefits provided by soils, vegetation and water based on their potential for rainwater infiltration as a proxy to provide a range of benefits such as improved health, climate change adaption and biodiversity conservation.

- 8.5.4 The UGF is currently only applied to major applications, but may eventually be applied to applications below this threshold as boroughs develop their own models. London is a diverse city so it is appropriate that each borough develops its own approach in response to its local circumstances. However, the challenges of climate change, poor air quality and deficiencies in green space need to be tackled now, so while each borough develops its own bespoke approach the Mayor has recommended the standards set out above. Further guidance will be developed to support implementation of the Urban Greening Factor.
- 8.5.5 Residential development places greater demands on **existing green infrastructure** and, as such, a higher standard is justified. Commercial development includes a range of uses and a variety of development typologies where the approach to urban greening will vary. Whilst the target score of 0.3 does not apply to B2 and B8 uses, these uses will still be expected to set out what measures they have taken to achieve urban greening on-site and quantify what their UGF score is.
- 8.5.6 The Urban Greening Factor for a proposed development is calculated in the following way:
- (Factor A x Area) + (Factor B x Area) + (Factor C x Area) etc. divided by Total Site Area.
- So, for example, an office development with a 600 sq.m. footprint on a site of 1,000 sq.m. including a green roof, 250 sq.m. car parking, 100 sq.m. open water and 50 sq.m. of amenity grassland would score the following;
- $$(0.7 \times 600) + (0.0 \times 250) + (1 \times 100) + (0.4 \times 50) / 1000 = 0.54$$
- 8.5.7 So, in this example, the proposed office development exceeds the interim target score of 0.3 for a predominately commercial development under Part B of Policy G5 Urban greening.

<sup>137</sup> Urban Greening Factor for London, The Ecology Consultancy, 2017, [https://www.london.gov.uk/sites/default/files/urban\\_greening\\_factor\\_for\\_london\\_final\\_report.pdf](https://www.london.gov.uk/sites/default/files/urban_greening_factor_for_london_final_report.pdf)

**Table 8.2 - Urban Greening Factors**

Surface Cover Type	Factor
Semi-natural vegetation (e.g. trees, woodland, species-rich grassland) maintained or established on site.	1
Wetland or open water (semi-natural; not chlorinated) maintained or established on site.	1
Intensive green roof or vegetation over structure. Substrate minimum settled depth of 150mm – see <a href="http://livingroofs.org">livingroofs.org</a> for descriptions. <sup>A</sup>	0.8
Standard trees planted in connected tree pits with a minimum soil volume equivalent to at least two thirds of the projected canopy area of the mature tree – see Trees in Hard Landscapes for overview. <sup>B</sup>	0.8
Extensive green roof with substrate of minimum settled depth of 80mm (or 60mm beneath vegetation blanket) – meets the requirements of GRO Code 2014. <sup>C</sup>	0.7
Flower-rich perennial planting – see RHS perennial plants for guidance. <sup>D</sup>	0.7
Rain gardens and other vegetated sustainable drainage elements – See CIRIA for case-studies. <sup>E</sup>	0.7
Hedges (line of mature shrubs one or two shrubs wide) – see RHS for guidance. <sup>F</sup>	0.6
Standard trees planted in pits with soil volumes less than two thirds of the projected canopy area of the mature tree.	0.6
Green wall –modular system or climbers rooted in soil – see NBS Guide to Façade Greening for overview. <sup>G</sup>	0.6
Groundcover planting – see RHS Groundcover Plants for overview. <sup>H</sup>	0.5
Amenity grassland (species-poor, regularly mown lawn).	0.4
Extensive green roof of sedum mat or other lightweight systems that do not meet GRO Code 2014. <sup>I</sup>	0.3
Water features (chlorinated) or unplanted detention basins.	0.2
Permeable paving – see CIRIA for overview. <sup>J</sup>	0.1
Sealed surfaces (e.g. concrete, asphalt, waterproofing, stone).	0

## Notes for Table 8.2

- A. <https://livingroofs.org/intensive-green-roofs/>
- B. <http://www.tdag.org.uk/trees-in-hard-landscapes.html>
- C. <https://livingroofs.org/wp-content/uploads/2016/03/grocode2014.pdf>
- D. <https://www.rhs.org.uk/advice/profile?pid=868>
- E. <http://www.susdrain.org/case-studies/>
- F. <https://www.rhs.org.uk/advice/profile?pid=351>
- G. <https://www.thenbs.com/knowledge/the-nbs-guide-to-facade-greening-part-two>
- H. <https://www.rhs.org.uk/advice/profile?PID=818>
- I. <https://livingroofs.org/wp-content/uploads/2016/03/grocode2014.pdf>
- J. <https://www.susdrain.org/delivering-suds/using-suds/suds-components/source-control/pervious-surfaces/pervious-surface-types/pervious-surface-types.html>

## Policy G6 Biodiversity and access to nature

- A Sites of Importance for Nature Conservation (SINCs) should be protected.
- B Boroughs, in developing Development Plans, should:
  - 1) use up-to-date information about the natural environment and the relevant procedures to identify SINCs and ecological corridors to identify coherent ecological networks
  - 2) identify areas of deficiency in access to nature (i.e. areas that are more than 1km walking distance from an accessible Metropolitan or Borough SINC) and seek opportunities to address them
  - 3) support the protection and conservation of priority species and habitats that sit outside the SINC network, and promote opportunities for enhancing them using Biodiversity Action Plans
  - 4) seek opportunities to create other habitats, or features such as artificial nest sites, that are of particular relevance and benefit in an urban context

5) ensure designated sites of European or national nature conservation importance are clearly identified and impacts assessed in accordance with legislative requirements.

C Where harm to a SINC is unavoidable, and where the benefits of the development proposal clearly outweigh the impacts on biodiversity, the following mitigation hierarchy should be applied to minimise development impacts:

- 1) avoid damaging the significant ecological features of the site
- 2) minimise the overall spatial impact and mitigate it by improving the quality or management of the rest of the site
- 3) deliver off-site compensation of better biodiversity value.

D Development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain. This should be informed by the best available ecological information and addressed from the start of the development process.

E Proposals which reduce deficiencies in access to nature should be considered positively.

8.6.1 **Sites of Importance for Nature Conservation (SINCs)** comprise:

1. Sites of Metropolitan Importance – strategically-important conservation sites for London
2. Sites of Borough Importance – sites which support habitats or species of value at the borough level
3. Sites of Local Importance – sites which are important for the provision of access to nature at the neighbourhood level.

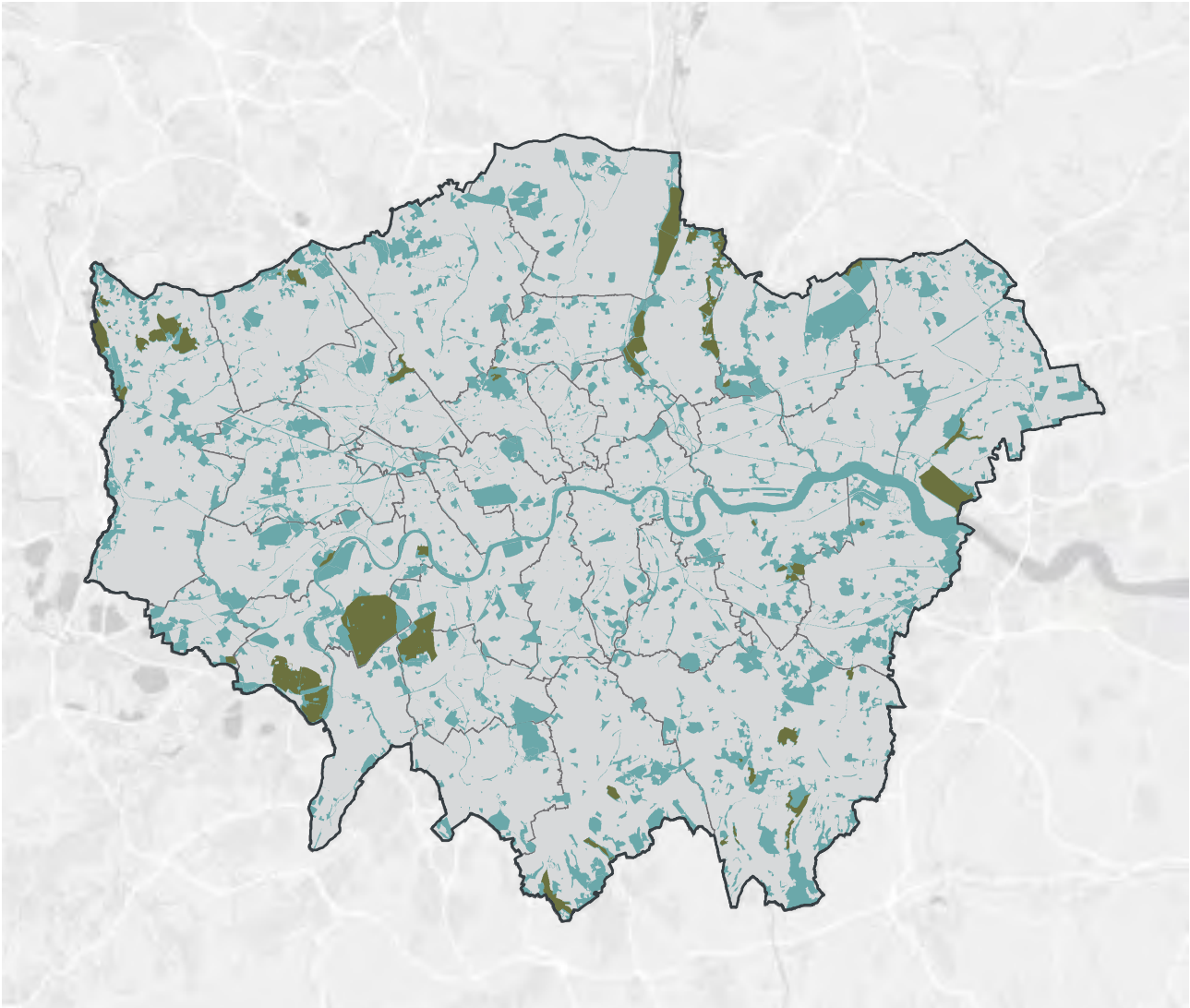
Several Sites of Metropolitan Importance also have statutory European or national nature conservation designations (see paragraph 8.6.3)

8.6.2 The level of protection afforded to SINCS should be commensurate with their status and the contribution they make to wider ecological networks. When undertaking comprehensive reviews of SINCs across a borough, or when identifying or amending Sites of Metropolitan Importance, boroughs should consult the London Wildlife Sites Board.

- 8.6.3 Sites with a formal **European or national designation** (including Special Protection Areas, Special Areas of Conservation, Sites of Special Scientific Interest, National Nature Reserves and Local Reserves) are protected by legislation. There are legal provisions which ensure these sites are not harmed by development; there is a duty to consult Natural England on proposals that might affect these sites, and undertake an appropriate assessment of the potential impacts on European sites if a plan or project is likely to have a significant effect on the integrity of a European site.
- 8.6.4 Although heavily urbanised, London consists of a **wide variety of important wildlife habitats**, including a number of sites which have national and international protection. These habitats range from semi-natural features such as chalk grasslands and ancient woodlands to more urban habitats such as reservoirs and vegetated railway corridors. The wildlife value of these sites must be protected and appropriate maintenance regimes should be established to maintain or enhance the wildlife value of sites, recognising the additional pressure some sites may experience due to London’s projected growth. Improved sustainable access to wildlife sites should be secured, where appropriate, so that Londoners can better experience and appreciate the natural environment within the city. The connections between protected sites – green corridors – are often critical in helping to sustain wildlife populations that would be vulnerable if they were confined to isolated areas of habitat. London’s water spaces make up an important set of habitats in London. [Policy SI 17 Protecting and enhancing London’s waterways](#) addresses the protection of water spaces, with a particular priority for improving and restoring them. The habitat value of waterways is a key element of their future management.
- 8.6.5 Development proposals that are adjacent to or near **SINCs or green corridors** should consider the potential impact of indirect effects to the site, such as noise, shading or lighting. There may also be opportunities for new development to contribute to enhancing the nature conservation value of an adjacent SINC or green corridor by, for example, sympathetic landscaping that provides complementary habitat. The London Environment Strategy includes guidance on identifying SINCs (Appendix 5) as well as habitat creation targets and a comprehensive list of priority species and habitats that require particular consideration when planning decisions are made. The London Wildlife Sites Board offers help and guidance to boroughs on the selection of SINCs.<sup>138</sup>

<sup>138</sup> Tree and Woodland Strategy Guidance, Mayor of London, 2013, <https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/london-plan-guidance-and-spgs/tree-and-woodland>



**Figure 8.2 - Designated nature conservation sites****Sites of Importance for Nature Conservation and Sites of Special**

- Sites of Importance for Nature Conservation (SINC)
- Sites of Special Scientific Interest (SSSI)

Source: Greenspace Information for Greater London (GiGL)

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- 8.6.6 Biodiversity net gain is an approach to development that leaves biodiversity in a better state than before. This means that where biodiversity is lost as a result of a development, the compensation provided should be of an overall greater biodiversity value than that which is lost. This approach does not change the fact that losses should be avoided, and biodiversity offsetting is the option of last resort. The Mayor will be producing guidance to set out how biodiversity net gain applies in London.

### Policy G7 Trees and woodlands

- A London's urban forest and woodlands should be protected and maintained, and new trees and woodlands should be planted in appropriate locations in order to increase the extent of London's urban forest – the area of London under the canopy of trees.
- B In their Development Plans, boroughs should:
- 1) protect 'veteran' trees and ancient woodland where these are not already part of a protected site<sup>139</sup>
  - 2) identify opportunities for tree planting in strategic locations.
- C Development proposals should ensure that, wherever possible, existing trees of value are retained.<sup>140</sup> If planning permission is granted that necessitates the removal of trees there should be adequate replacement based on the existing value of the benefits of the trees removed, determined by, for example, i-tree or CAVAT or another appropriate valuation system. The planting of additional trees should generally be included in new developments – particularly large-canopied species which provide a wider range of benefits because of the larger surface area of their canopy.

<sup>139</sup> Forestry Commission/Natural England (2018): Ancient woodland and veteran trees; protecting them from development, <https://www.gov.uk/guidance/planning-applications-affecting-trees-and-woodland>

<sup>140</sup> Category A, B and lesser category trees where these are considered by the local planning authority to be of importance to amenity and biodiversity, as defined by BS 5837:2012

- 8.7.1 **Trees and woodlands play an important role** within the urban environment. They help to trap air pollutants, add to amenity, provide shading, absorb rainwater and filter noise. They also provide extensive areas of habitat for wildlife, especially mature trees. The urban forest is an important element of London’s green infrastructure and comprises all the trees in the urban realm, in both public and private spaces, along linear routes and waterways, and in amenity areas. The Mayor and Forestry Commission have previously published a London Tree and Woodland Framework and Supplementary Planning Guidance on preparing tree strategies to help boroughs plan for the management of the urban forest.<sup>141</sup> These, and their successor documents, should inform policies and proposals in boroughs’ wider green infrastructure strategies.
- 8.7.2 The Mayor wants to increase tree canopy cover in London by 10 per cent by 2050. Green infrastructure strategies can be used to help boroughs identify locations where there are strategic opportunities for tree planting to maximise potential benefits. Trees should be designed into developments from the outset to maximise tree planting opportunities and optimise establishment and vigorous growth. When preparing more detailed planning guidance boroughs are also advised to refer to sources such as Right Trees for a Changing Climate<sup>142</sup> and guidance produced by the Trees and Design Action Group.<sup>143</sup>
- 8.7.3 An i-Tree Eco Assessment of London’s trees quantified the benefits and services provided by the capital’s **urban forest**.<sup>144</sup> This demonstrated that London’s existing trees and woodlands provide services (such as pollution removal, carbon storage, and storm water attenuation) valued at £133 million per year. The cost of replacing these services if the urban forest was lost was calculated at £6.12 billion. Consequently, when trees are removed the asset is degraded and the compensation required in terms of substitute planting to replace services lost should be based on a recognised tree valuation method such as CAVAT<sup>145</sup> or i-Tree Eco.<sup>146</sup>

<sup>141</sup> Tree and Woodland Strategy Guidance, Mayor of London, 2013, <https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/london-plan-guidance-and-spgs/tree-and-woodland>

<sup>142</sup> The Right Trees for Changing Climate Database, <http://www.righttrees4cc.org.uk/>

<sup>143</sup> Trees and Design Action Group guidance, <http://www.tdag.org.uk/guides--resources.html>

<sup>144</sup> Valuing London's Urban Forest - Results of the London i-Tree Eco Project, Treeconomics, 2015, <https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/valuing-londons-urban-forest>

<sup>145</sup> CAVAT, <https://www.ltoa.org.uk/resources/cavat>

<sup>146</sup> i-Tree Eco, <https://www.itreetools.org/>



## Policy G8 Food growing

A In Development Plans, boroughs should:

- 1) protect existing allotments and encourage provision of space for urban agriculture, including community gardening, and food growing within new developments and as a meanwhile use on vacant or under-utilised sites
- 2) identify potential sites that could be used for food production.

- 8.8.1 Providing land for food growing helps to support the **creation of a healthier food environment**. At the local scale, it can help promote more active lifestyles and better diets, and improve food security. Community food growing not only helps to improve social integration and community cohesion but can also contribute to improved mental and physical health and wellbeing.
- 8.8.2 As provision for **small-scale** food growing becomes harder to deliver, innovative solutions to its delivery should be considered, such as green roofs and walls, re-utilising existing under-used spaces and incorporating spaces for food growing in community schemes such as in schools. Where sites are made available for food growing on a temporary basis landowners/developers will need to be explicit over how long sites will be available to the community.
- 8.8.3 At a more **macro scale**, providing land for food growing helps to support farming and agriculture. Providing food closer to source helps to create a sustainable food network for the city, supports the local economy, and reduces the need to transport food, thereby reducing transport emissions and helping to address climate change. There are also longer-term biodiversity benefits, and farmers adopting agri-environmental stewardship schemes are more likely to deliver good environmental practice. For all food growing, consideration should be given to the historic use of the land and any potential contamination.
- 8.8.4 The **Mayor's Food Strategy** prioritises the need to help all Londoners to be healthier and for the food system to have less of a negative environmental impact.
- 8.8.5 The **Capital Growth network** is London's food growing network, which continues to promote community food growing across the capital, as well as delivering food-growing skills and employment opportunities for Londoners.

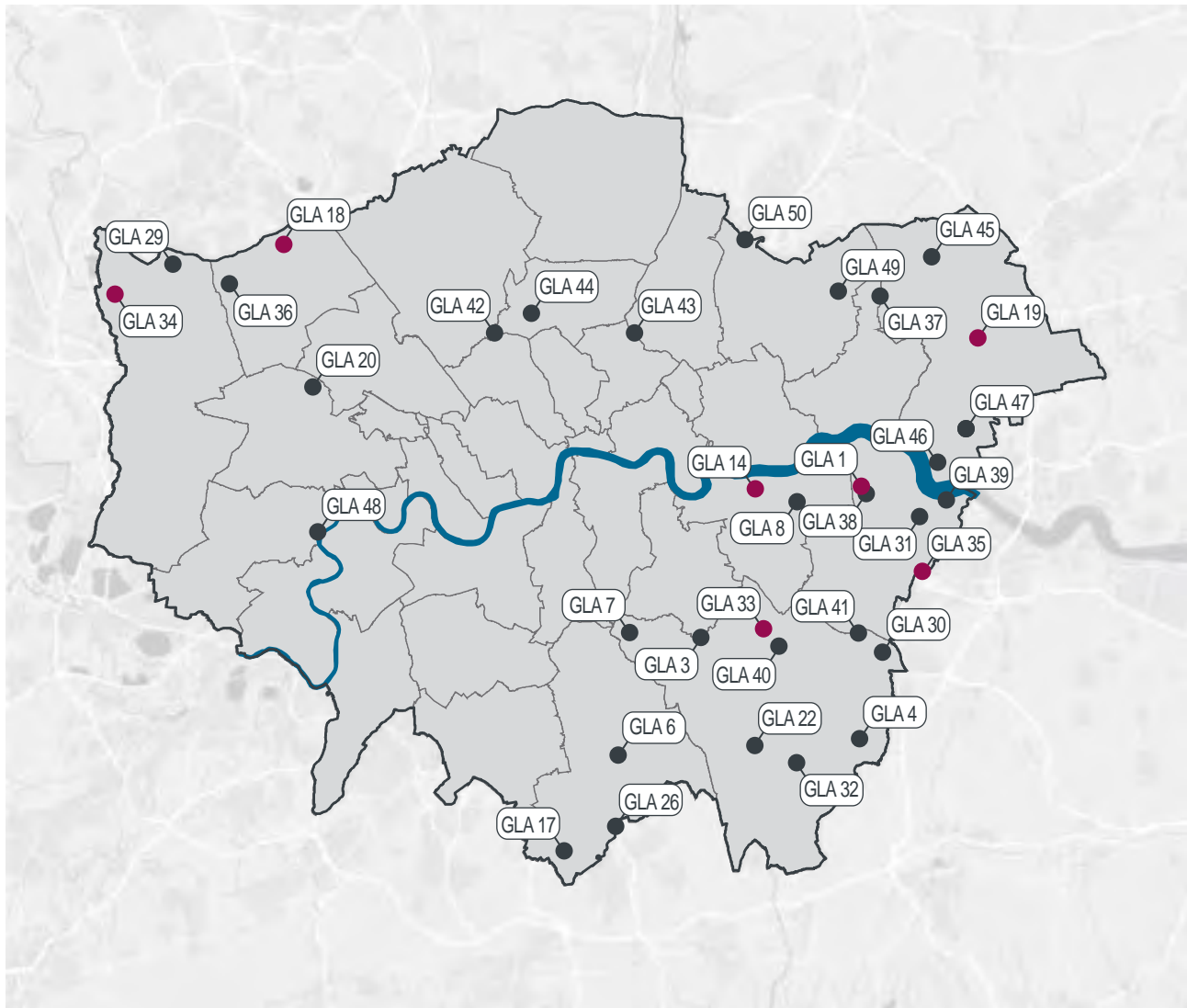


## Policy G9 Geodiversity

- A In Development Plans, boroughs should:
- 1) establish clear goals for the management of identified sites to promote public access, appreciation and interpretation of geodiversity
  - 2) ensure geological sites of European, national or regional conservation importance are clearly identified.
- B Development proposals should:
- 1) make a positive contribution to the protection and enhancement of geodiversity
  - 2) protect Regionally Important Geological Sites (RIGS)
  - 3) give Locally Important Geological Sites (LIGS) the level of protection commensurate with their importance.

- 8.9.1 **Geodiversity** is a fundamental cornerstone of our everyday lives. Geology affects where we build, how we construct buildings and how we deliver associated services. It influences the design and layout of infrastructure, filters our drinking water and underpins the landscape around us. Geodiversity cannot be replaced or recreated (other than on geological timescales).
- 8.9.2 London's geodiversity sites are shown in Figure 8.3. Geodiversity sites with existing or proposed European or national designations are Sites of Special Scientific Interest and subject to statutory protection. Boroughs should protect and enhance RIGSs and LIGSs through their Development Plans. The Mayor will continue to work with the London Geodiversity Partnership to promote geodiversity and will prepare updated Supplementary Planning Guidance as necessary.
- 8.9.3 Geodiversity sites should be recognised for their importance in providing **habitats for biodiversity** and in allowing delivery of ecosystem services.
- 8.9.4 Where appropriate, access should be provided to geodiversity sites, although it is recognised that this is not always desirable. Geological sites will require appropriate **maintenance regimes** to ensure that these assets are properly protected and managed.

**Figure 8.3 - Geodiversity sites**



### Sites of National and Regional Geodiversity Importance

- Sites of Special Scientific Interest (SSSIs)
- Recommended Regionally Important Geological Sites (RIGS)

Reference numbers refer to the appendices of the London Foundations SPG 2012

Source: GLA Planning

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## Chapter 9

# Sustainable Infrastructure





## Policy SI 1 Improving air quality

- A Development Plans, through relevant strategic, site-specific and area-based policies, should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.
- B To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:
- 1) Development proposals should not:
    - a) lead to further deterioration of existing poor air quality
    - b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits
    - c) create unacceptable risk of high levels of exposure to poor air quality.
  - 2) In order to meet the requirements in Part 1, as a minimum:
    - a) development proposals must be at least Air Quality Neutral
    - b) development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retro-fitted mitigation measures
    - c) major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1
    - d) development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people should demonstrate that design measures have been used to minimise exposure.
- C Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the area of the proposal as part of an air quality positive approach. To achieve this a statement should be submitted demonstrating:

- 1) how proposals have considered ways to maximise benefits to local air quality, and
- 2) what measures or design features will be put in place to reduce exposure to pollution, and how they will achieve this.

D In order to reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance.<sup>147</sup>

E Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated within the area affected by the development.

<sup>147</sup> The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance, Mayor of London, 2014

9.1.1 **Poor air quality** is a major issue for London which is failing to meet requirements under legislation. Poor air quality has direct impacts on the health, quality of life and life expectancy of Londoners. The impacts tend to be most heavily felt in some of London's most deprived neighbourhoods, and by people who are most vulnerable to the impacts, such as children and older people. London's air quality should be significantly improved and exposure to poor air quality, especially for vulnerable people, should be reduced.

9.1.2 The Mayor is committed to **making air quality in London the best of any major world city**, which means not only achieving compliance with legal limits for Nitrogen Dioxide as soon as possible and maintaining compliance where it is already achieved, but also achieving World Health Organisation targets for other pollutants such as Particulate Matter.

9.1.3 The aim of this policy is to ensure that new developments are designed and built, as far as is possible, **to improve local air quality and reduce the extent to which the public are exposed to poor air quality**. This means that new developments, as a minimum, must not cause new exceedances of legal air



quality standards, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits.<sup>148</sup> Where limit values are already met, or are predicted to be met at the time of completion, new developments must endeavour to maintain the best ambient air quality compatible with sustainable development principles.

- 9.1.4 Where this policy refers to 'existing poor air quality' this should be taken to include areas where legal limits for any pollutant, or World Health Organisation targets for Particulate Matter, are already exceeded and areas where current pollution levels are within 5 per cent of these limits.<sup>149</sup>
- 9.1.5 For major developments, a **preliminary Air Quality Assessment** should be carried out before designing the development to inform the design process. The aim of a preliminary assessment is to assess:
- The most significant sources of pollution in the area
  - Constraints imposed on the site by poor air quality
  - Appropriate land uses for the site
  - Appropriate design measures that could be implemented to ensure that development reduces exposure and improves air quality.
- 9.1.6 **Further assessments** should then be carried out as the design evolves to ensure that impacts from emissions are prevented or minimised as far as possible, and to fully quantify the expected effect of any proposed mitigation measures, including the cumulative effect where other nearby developments are also underway or likely to come forward.
- 9.1.7 **Assessment of the impacts** of a scheme on local air pollution should include fixed plant, such as boiler and emergency generators, as well as expected transport-related sources. The impact assessment part of an Air Quality Assessment should always include all relevant pollutants. Industrial, waste and other working sites may need to include on-site vehicles and mobile machinery as well as fixed machinery and transport sources.
- 9.1.8 The impact assessment should provide decision makers with sufficient information to understand the **scale and geographic scope of any detrimental,**

<sup>148</sup> Air Quality Standards Regulations, 2010 (or subsequent revisions thereof), <http://www.legislation.gov.uk/ukxi/2010/1001/contents/made>

<sup>149</sup> Land-Use Planning & Development Control: Planning for Air Quality, Institution of Air Quality Management, 2017, <http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf>. This guidance indicates that even very small impacts on ambient air quality cannot be considered 'negligible' where existing levels are within 5% of limits.



**or beneficial, impacts** on air quality and enable them to exercise their professional judgement in deciding whether the impacts are acceptable, in line with best practice.

- 9.1.9 Meeting the **Air Quality Neutral benchmarks**,<sup>150</sup> although necessary to control the growth in London's regional emissions, will not always be sufficient to prevent unacceptable local impacts, as these may be affected by other factors, such as the location of the emissions source, the rate of emissions (as opposed to the annual quantum) and the layout of the development in relation to the surrounding area. As developments can still have significant local impacts that are not captured by Air Quality Neutral, for example by concentrating emissions, increasing exposure or preventing dispersion in particular locations, it is still important for these impacts to be assessed and mitigated.
- 9.1.10 For most **minor developments**, achieving Air Quality Neutral will be enough to demonstrate that they are in accordance with Part B1 of this policy. However, where characteristics of the development or local features raise concerns about air quality, or where there are additional requirements for assessment in local policy, a full Air Quality Assessment may be required. Additional measures may also be needed to address local impacts. Guidance on Air Quality Neutral will set out streamlined assessment procedures for minor developments.
- 9.1.11 An **air quality positive approach** is linked to other policies in the London Plan, such as Healthy Streets, energy masterplanning and green infrastructure. One of the keys to delivering this will be to draw existing good practice together in a holistic fashion, at an early stage in the process, to ensure that the development team can identify which options deliver the greatest improvement to air quality. Large schemes, subject to Environmental Impact Assessments, commonly have project and design teams representing a range of expertise, that can feed in to the development of a statement to set out how air quality can be improved across the proposed area of the development.
- 9.1.12 **Single-site schemes**, including referable schemes, are often constrained by pre-existing urban form and structure, transport and heat networks. These constraints may limit their ability to consider how to actively improve local air quality. By contrast, large schemes, particularly **masterplans**, usually have more flexibility to consider how new buildings, amenity and public spaces, transport and heat networks are deployed across the area and will therefore have greater opportunities to improve air quality and reduce exposure through the careful choice of design and infrastructure solutions. Delivery of an air quality positive

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See [Glossary](#)

approach will be project specific and will rely on the opportunities on site or in the surrounding area to improve air quality.

9.1.13 **Statements for large-scale development proposals**, prepared in response to Part C of this policy, should set out:

- How air quality is intended to be analysed and opportunities for its improvement identified as part of the design process.
- How air quality improvements have informed the design choices made about layout and distribution of buildings, amenity spaces and infrastructure.
- What steps will be taken to promote the uptake and use of sustainable and zero-emission modes of transport beyond minimum requirements. This may include specific measures in transport plans or delivery against Healthy Streets indicators.
- How air pollutant emissions from the buildings or associated energy centres can be reduced beyond the minimum requirements set out in Part B of this policy. This may include specific measures in heating masterplans or working with existing heat network providers to reduce or eliminate energy centre emissions.
- How specific measures that are identified to deliver air quality improvements will be evaluated and secured, including whether more detailed design specifications will be required so that the final development meets the desired performance.

9.1.14 The GLA will produce **guidance** in order to assist developers and boroughs in identifying measures and best practice to inform the preparation of statements for developments taking an air quality positive approach.

9.1.15 Where the Air Quality Assessment or the air quality positive approach assumes that specific measures are put in place to improve air quality, prevent or mitigate air quality impacts, these should be secured through the **use of planning conditions or s106 agreements**. For instance, if ultra-low NO<sub>x</sub> boilers are assumed in the assessment, conditions should require the provision of details of the installed plant prior to the occupation of the building, or where larger plant is used for heating, post installation emissions tests should be required to ensure that the modelled emission parameters are achieved.

9.1.16 The GLA maintains and publishes an **inventory of emission sources** (the London Atmospheric Emissions Inventory or LAEI). This inventory is based on a detailed assessment of all current sources of pollution in London and can be used to help understand the existing environment at development sites.

- 9.1.17 **Air Quality Focus Areas** (AQFA) are locations that not only exceed the EU annual mean limit value for nitrogen dioxide (NO<sub>2</sub>) but are also locations with high human exposure. AQFAs are not the only areas with poor air quality but they have been defined to identify areas where currently planned national, regional and local measures to reduce air pollution may not fully resolve poor air quality issues. There are currently 187 AQFAs across London (Figure 9.1). The list of Air Quality Focus Areas is updated from time to time as the London Atmospheric Inventory is reviewed and the latest list in the London Datastore should always be checked.
- 9.1.18 AQFAs are distinct from **Air Quality Management Areas**. Air Quality Management Areas (AQMAs) are declared by the London boroughs in response to modelled or measured existing exceedances of legal air quality limits. The analysis underpinning AQMAs is often more spatially detailed than London-wide modelling and may include the identification of additional air quality hot spots or other local issues.
- 9.1.19 All London boroughs have declared AQMAs covering some or all of their area. Boroughs are required to produce **Air Quality Action Plans** setting out the actions they are taking to improve local air quality; planning decisions should be in accordance with these action plans and developers should take any local requirements in Air Quality Action Plans into account.
- 9.1.20 AQFAs are defined based on GLA modelling forecasts that incorporate actions taken by the GLA and others as well as broader changes in emissions sources and are not intended to supplant the role of AQMAs in planning decisions. In practice **developers will need to consider both designations** where they overlap.
- 9.1.21 It may not always be possible in practice for developments to achieve Air Quality Neutral standards or to acceptably minimise impacts using on-site measures alone. If a development can demonstrate that it has exploited all relevant on-site measures it may be possible to make the development acceptable through **additional mitigation or offsetting payments**.
- 9.1.22 Where there have been significant **improvements to air quality** resulting in an area no longer exceeding air quality limits, Development Plans should not take advantage of this investment and worsen the local air quality back to a poor level. The sustainability appraisal for local plans should consider the effect of national, London-wide and local programmes to improve air quality to ensure that any potential conflicts are avoided.
- 9.1.23 **Further guidance** will be published on Air Quality Neutral and air quality positive approaches as well as guidance on how to reduce construction and demolition impacts.

**Figure 9.1 - Air Quality Focus Areas****London's Air Quality Focus Areas**

● Air Quality Focus Area (AQFA)

Source: GLA  
Environment

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## Policy SI 2 Minimising greenhouse gas emissions

- A Major development should be net zero-carbon.<sup>151</sup> This means reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand in accordance with the following energy hierarchy:
- 1) be lean: use less energy and manage demand during operation
  - 2) be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly
  - 3) be green: maximise opportunities for renewable energy by producing, storing and using renewable energy on-site
  - 4) be seen: monitor, verify and report on energy performance.
- B Major development proposals should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy.
- C A minimum on-site reduction of at least 35 per cent beyond Building Regulations<sup>152</sup> is required for major development. Residential development should achieve 10 per cent, and non-residential development should achieve 15 per cent through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided, in agreement with the borough, either:
- 1) through a cash in lieu contribution to the borough's carbon offset fund, or
  - 2) off-site provided that an alternative proposal is identified and delivery is certain.
- D Boroughs must establish and administer a carbon offset fund. Offset fund payments must be ring-fenced to implement projects that deliver carbon reductions. The operation of offset funds should be monitored and reported on annually.

<sup>151</sup> Where zero-carbon is used in the Plan it refers to net zero-carbon – see [Glossary](#) for definition.

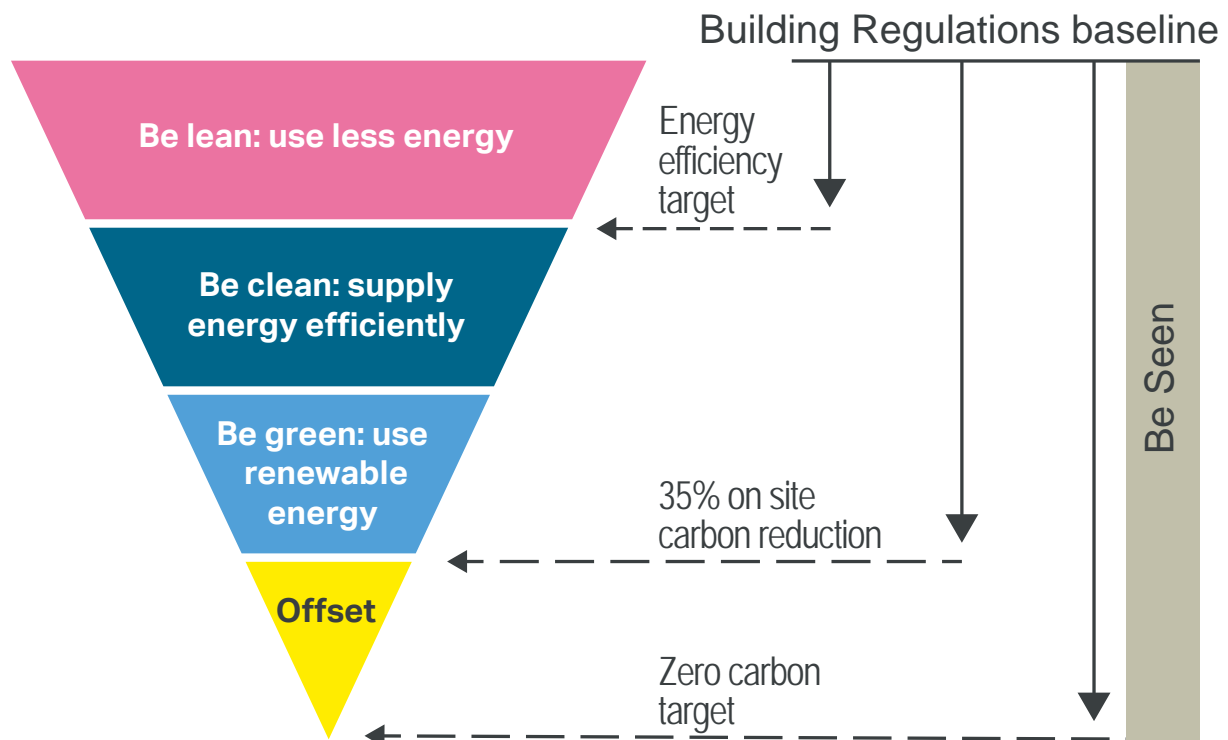
<sup>152</sup> Building Regulations 2013. If these are updated, the policy threshold will be reviewed. <https://www.gov.uk/government/publications/conservation-of-fuel-and-power-approved-document-1>

- E Major development proposals should calculate and minimise carbon emissions from any other part of the development, including plant or equipment, that are not covered by Building Regulations, i.e. unregulated emissions.
- F Development proposals referable to the Mayor should calculate whole life-cycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.

- 9.2.1 The Mayor is committed to London **becoming a zero-carbon city**. This will require reduction of all greenhouse gases, of which carbon dioxide is the most prominent.<sup>153</sup> London's homes and workplaces are responsible for producing approximately 78 per cent of its greenhouse gas emissions. If London is to achieve its objective of becoming a zero-carbon city by 2050, new development needs to meet the requirements of this policy. Development involving major refurbishment should also aim to meet this policy.
- 9.2.2 **The energy hierarchy** (Figure 9.2) should inform the design, construction and operation of new buildings. The priority is to minimise energy demand, and then address how energy will be supplied and renewable technologies incorporated. An important aspect of managing demand will be to reduce peak energy loadings.
- 9.2.3 Boroughs should ensure that all developments maximise opportunities for **on-site electricity and heat production** from solar technologies (photovoltaic and thermal) and use innovative building materials and smart technologies. This approach will reduce carbon emissions, reduce energy costs to occupants, improve London's energy resilience and support the growth of green jobs.
- 9.2.4 A zero-carbon target for major residential developments has been in place for London since October 2016 and applies to **major non-residential developments** on final publication of this Plan.

<sup>153</sup> 'Carbon' is used in the London Plan as a shorthand term for all greenhouse gases. London's carbon accounting is measured in carbon dioxide equivalent, which includes the conversion of other greenhouse gases into their equivalent carbon dioxide emissions.

**Figure 9.2 - The energy hierarchy and associated targets**



Source: Greater London Authority

- 9.2.5 To meet the zero-carbon target, an on-site reduction of at least 35 per cent beyond the baseline of Part L of the current Building Regulations is required.<sup>154</sup> The minimum **improvement over the Target Emission Rate (TER)** will increase over a period of time in order to achieve the zero-carbon London ambition and reflect the costs of more efficient construction methods. This will be reflected in future updates to the London Plan.
- 9.2.6 The Mayor recognises that **Building Regulations** use outdated carbon emission factors and that this will continue to cause uncertainty until they are updated by Government. Interim guidance has been published in the Mayor's Energy Planning Guidance on the use of appropriate emissions factors. This guidance will be updated again once Building Regulations are updated to help provide certainty to developers on how these policies are implemented.

<sup>154</sup>

Building Regulations 2013. If these are updated, the policy threshold will be reviewed. <https://www.gov.uk/government/publications/conservation-of-fuel-and-power-approved-document-l>

- 9.2.7 Developments are expected to achieve carbon reductions beyond Part L from **energy efficiency measures** alone to reduce energy demand as far as possible. Residential development should achieve 10 per cent and non-residential development should achieve 15 per cent over Part L. Achieving energy credits as part of a Building Research Establishment Environmental Assessment Method (BREEAM) rating can help demonstrate that energy efficiency targets have been met. Boroughs are encouraged to include BREEAM targets in their Local Plans where appropriate.
- 9.2.8 The price for offsetting carbon<sup>155</sup> is regularly reviewed. Changes to the GLA's suggested **carbon offset price** will be updated in future guidance. New development is expected to get as close as possible to zero-carbon on-site, rather than relying on offset fund payments to make up any shortfall in emissions. However, **offset funds** have the potential to unlock carbon savings from the existing building stock through energy efficiency programmes and by installing renewable technologies – typically more expensive to deliver in London due to the building age, type and tenure.
- 9.2.9 The Mayor provides **support to boroughs** by advising those which are at the early stages of setting up their carbon offsetting funds, and by setting out guidance on how to select projects. To ensure that offset funds are used effectively to reduce carbon whilst encouraging a holistic approach to retrofitting, Mayoral programmes offer additional support.<sup>156</sup>
- 9.2.10 The move towards zero-carbon development requires comprehensive **monitoring of energy demand and carbon emissions** to ensure that planning commitments are being delivered. Major developments are required to monitor and report on energy performance, such as by displaying a Display Energy Certificate (DEC), and reporting to the Mayor for at least five years via an online portal to enable the GLA to identify good practice and report on the operational performance of new development in London.
- 9.2.11 Operational carbon emissions will make up a declining proportion of a development's whole life-cycle carbon emissions as operational carbon targets become more stringent. To fully capture a development's carbon impact, a **whole life-cycle approach** is needed to capture its unregulated emissions (i.e. those associated with cooking and small appliances), its embodied emissions

<sup>155</sup> Boroughs should develop a price for offsetting carbon using either a nationally recognised carbon pricing mechanism or a price based on the cost of offsetting carbon across the borough. A nationally recognised non-traded price of £95/tonne has been tested as part of the viability assessment for the London Plan which boroughs may use to collect offset payments.

<sup>156</sup> For examples see London Environment Strategy 2018.

(i.e. those associated with raw material extraction, manufacture and transport of building materials and construction) and emissions associated with maintenance, repair and replacement as well as dismantling, demolition and eventual material disposal). Whole life-cycle carbon emission assessments are therefore required for development proposals referable to the Mayor. Major non-referable development should calculate unregulated emissions and are encouraged to undertake whole life-cycle carbon assessments. The approach to whole life-cycle carbon emissions assessments, including when they should take place, what they should contain and how information should be reported, will be set out in guidance.

- 9.2.12 The Mayor may publish further planning guidance on sustainable design and construction<sup>157</sup> and will continue to regularly update the guidance on preparing **energy strategies** for major development. Boroughs are encouraged to request energy strategies for other development proposals where appropriate. As a minimum, energy strategies should contain the following information:
- a. a calculation of the energy demand and carbon emissions covered by Building Regulations and, separately, the energy demand and carbon emissions from any other part of the development, including plant or equipment, that are not covered by the Building Regulations (i.e. the unregulated emissions), at each stage of the energy hierarchy
  - b. proposals to reduce carbon emissions beyond Building Regulations through the energy efficient design of the site, buildings and services, whether it is categorised as a new build, a major refurbishment or a consequential improvement
  - c. proposals to further reduce carbon emissions through the use of zero or low-emission decentralised energy where feasible, prioritising connection to district heating and cooling networks and utilising local secondary heat sources. (Development in Heat Network Priority Areas should follow the heating hierarchy in [Policy SI 3 Energy infrastructure](#))
  - d. proposals to further reduce carbon emissions by maximising opportunities to produce and use renewable energy on-site, utilising storage technologies where appropriate
  - e. proposals to address air quality risks (see [Policy SI 1 Improving air quality](#)). Where an air quality assessment has been undertaken, this could be referenced instead

157

This will build on the 2014 Sustainable Design and Construction SPG.



- f. the results of dynamic overheating modelling which should be undertaken in line with relevant Chartered Institution of Building Services Engineers (CIBSE) guidance, along with any mitigating actions (see [Policy SI 4 Managing heat risk](#))
- g. proposals for demand-side response, specifically through installation of smart meters, minimising peak energy demand and promoting short-term energy storage, as well as consideration of smart grids and local micro grids where feasible
- h. a plan for monitoring and annual reporting of energy demand and carbon emissions post-construction for at least five years
- i. proposals explaining how the site has been future-proofed to achieve zero-carbon on-site emissions by 2050
- j. confirmation of offsetting arrangements, if required
- k. a whole life-cycle carbon emissions assessment, and actions to reduce life-cycle carbon emissions (for development proposals referable to the Mayor)
- l. analysis of the expected cost to occupants associated with the proposed energy strategy
- m. proposals that connect to or create new heat networks should include details of the design and specification criteria and standards for their systems as set out in [Policy SI 3 Energy infrastructure](#).

### Policy SI 3 Energy infrastructure

- A Boroughs and developers should engage at an early stage with relevant energy companies and bodies to establish the future energy and infrastructure requirements arising from large-scale development proposals such as Opportunity Areas, Town Centres, other growth areas or clusters of significant new development.
- B Energy masterplans should be developed for large-scale development locations (such as those outlined in Part A and other opportunities) which establish the most effective energy supply options. Energy masterplans should identify:
- 1) major heat loads (including anchor heat loads, with particular reference to sites such as universities, hospitals and social housing)
  - 2) heat loads from existing buildings that can be connected to future phases of a heat network
  - 3) major heat supply plant including opportunities to utilise heat from energy from waste plants
  - 4) secondary heat sources, including both environmental and waste heat
  - 5) opportunities for low and ambient temperature heat networks
  - 6) possible land for energy centres and/or energy storage
  - 7) possible heating and cooling network routes
  - 8) opportunities for futureproofing utility infrastructure networks to minimise the impact from road works
  - 9) infrastructure and land requirements for electricity and gas supplies
  - 10) implementation options for delivering feasible projects, considering issues of procurement, funding and risk, and the role of the public sector
  - 11) opportunities to maximise renewable electricity generation and incorporate demand-side response measures.
- C Development Plans should:
- 1) identify the need for, and suitable sites for, any necessary energy infrastructure requirements including energy centres, energy storage and upgrades to existing infrastructure



- 2) identify existing heating and cooling networks, identify proposed locations for future heating and cooling networks and identify opportunities for expanding and inter-connecting existing networks as well as establishing new networks.

D Major development proposals within Heat Network Priority Areas should have a communal low-temperature heating system:

- 1) the heat source for the communal heating system should be selected in accordance with the following heating hierarchy:
  - a) connect to local existing or planned heat networks
  - b) use zero-emission or local secondary heat sources (in conjunction with heat pump, if required)
  - c) use low-emission combined heat and power (CHP) (only where there is a case for CHP to enable the delivery of an area-wide heat network, meet the development's electricity demand and provide demand response to the local electricity network)
  - d) use ultra-low NOx gas boilers
- 2) CHP and ultra-low NOx gas boiler communal or district heating systems should be designed to ensure that they meet the requirements in Part B of [Policy SI 1 Improving air quality](#)
- 3) where a heat network is planned but not yet in existence the development should be designed to allow for the cost-effective connection at a later date.

E Heat networks should achieve good practice design and specification standards for primary, secondary and tertiary systems comparable to those set out in the CIBSE/ADE Code of Practice CP1 or equivalent.

9.3.1 The Mayor will work with boroughs, energy companies and major developers to promote the **timely and effective development of London's energy system** (energy production, distribution, storage, supply and consumption).

9.3.2 London is part of a national energy system and currently sources approximately 95 per cent of its energy from outside the GLA boundary. Meeting the **Mayor's zero-carbon target by 2050** requires changes to the way we use and supply energy so that power and heat for our buildings and transport is generated from local clean, low-carbon and renewable sources. London will need to shift from its

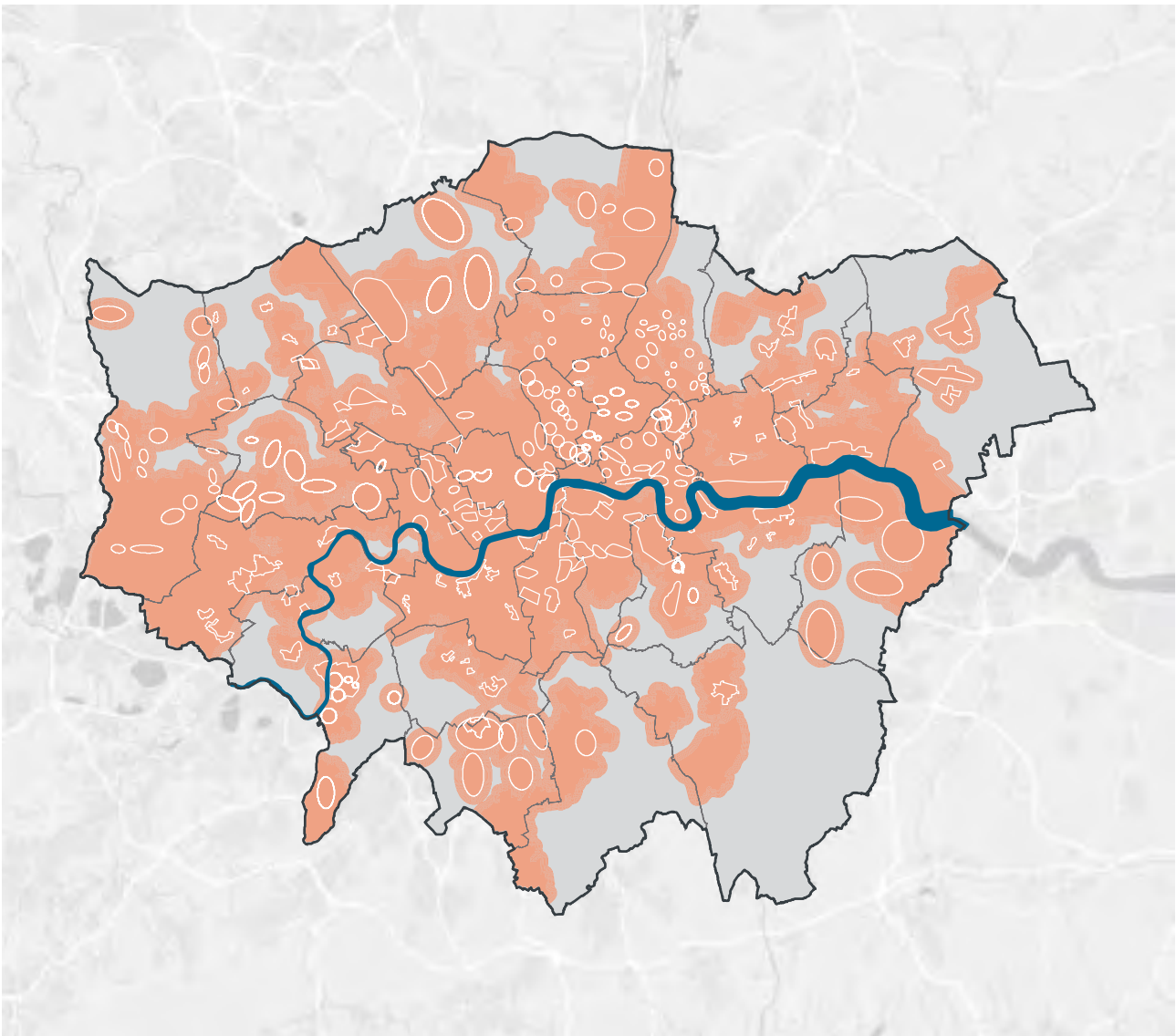
reliance on using natural gas as its main energy source to a more diverse range of low and zero-carbon sources, including renewable energy and secondary heat sources. Decentralised energy and local secondary heat sources will become an increasingly important element of London's energy supply and will help London become more self-sufficient and resilient in relation to its energy needs.

- 9.3.3 Many of London's existing **heat networks** have grown around combined heat and power (CHP) systems. However, the carbon savings from gas engine CHP are now declining as a result of national grid electricity decarbonising, and there is increasing evidence of adverse air quality impacts. Heat networks are still considered to be an effective and low-carbon means of supplying heat in London, and offer opportunities to transition to zero-carbon heat sources faster than individual building approaches. Where there remains a strategic case for low-emission CHP systems to support area-wide heat networks, these will continue to be considered on a case-by-case basis. Existing networks will need to establish decarbonisation plans. These should include the identification of low- and zero-carbon heat sources that may be utilised in the future, in order to be zero-carbon by 2050. The Mayor will consider how boroughs and network operators can be supported to achieve this.
- 9.3.4 Developments should connect to existing heat networks wherever feasible. New and existing networks should incorporate good practice design and specification standards comparable to those set out in the CIBSE/ADE Code of Practice CP1 for the UK or equivalent. They should also register with the Heat Trust or an equivalent scheme. This will support the development of good quality networks whilst helping network operators prepare for regulation and ensuring that customers are offered a reliable, cost-competitive service. Stimulating the delivery of new district heating infrastructure enables the opportunities that district heating can provide for London's energy system to be maximised. The Mayor has identified **Heat Network Priority Areas**, which can be found on the London Heat Map website.<sup>158</sup> These identify where in London the heat density is sufficient for heat networks to provide a competitive solution for supplying heat to buildings and consumers. Data relating to new and expanded networks will be regularly captured and made publicly available. Major development proposals outside Heat Network Priority Areas should select a low-carbon heating system that is appropriate to the heat demand of the development, provides a solution for managing peak demand, as with heat networks, and avoids high energy bills for occupants.

<sup>158</sup> London Heat Map, <https://www.london.gov.uk/what-we-do/environment/energy/london-heat-map>



- 9.3.5 Where developments are proposed within Heat Network Priority Areas but are beyond existing heat networks, the heating system should be designed to **facilitate cost-effective future connection**. This may include, for example, allocating space in plant rooms for heat exchangers and thermal stores, safeguarding suitable routes for pipework from the site boundary and making provision for connections to the future network at the site boundary. The Mayor is taking a more direct role in the delivery of district-level heat networks so that more new and existing communally-heated developments will be able to connect into them, and has developed a comprehensive decentralised energy support package. Further details are available in the London Environment Strategy.
- 9.3.6 The Mayor also supports the development of **low-temperature networks** for both new and existing systems as this allows cost-effective use of low-grade waste heat. It is expected that network supply temperatures will drop from the traditional 90°C-95°C to 70°C and less depending on system design and the temperature of available heat sources. Further guidance on designing and operating heat networks will be set out in the updated London Heat Network Manual.
- 9.3.7 **Low-emission CHP** in this policy refers to those technologies which inherently emit very low levels of NO<sub>x</sub>. It is not expected that gas engine CHP will fit this category with the technology that is currently available. Further details on circumstances in which it will be appropriate to use low-emission CHP and what additional emissions monitoring will be required will be provided in further guidance. This guidance will be regularly updated to ensure that it reflects changes in technology.

**Figure 9.3 - Heat Network Priority Areas****Heat Network Priority Areas**

- Heat Network Priority Areas
- Local Authority Heat Network Studies

Source: GLA  
Environment

Contains OS data ©  
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database right (2017)

- 9.3.8 Increasing the amount of **renewable and secondary energy** is supported and development proposals should identify opportunities to maximise both secondary heat sources and renewable energy production on-site. This includes the use of solar photovoltaics, heat pumps and solar thermal, both on buildings and at a larger scale on appropriate sites. There is also potential for wind and hydropower-based renewable energy in some locations within London. Innovative low- and zero-carbon technologies will also be supported.
- 9.3.9 **Electricity** is essential for the functioning of any modern city. Demand is expected to rise in London in response to a growing population and economy, the increased take up of electric vehicles, and the switch to electric heating systems (such as through heat pumps). It is of concern that the electricity network and substations are at or near to capacity in a number of areas, especially in central London. The Mayor will work with the electricity and heat industry, boroughs and developers to ensure that appropriate infrastructure is in place and integrated within a wider smart energy system designed to meet London's needs.
- 9.3.10 Demand for **natural gas** in London has been decreasing over the last few years, with a 25 per cent reduction since 2000.<sup>159</sup> This trend is expected to continue due to improved efficiency and a move away from individual gas boilers. Alongside the continuing programme of replacing old metal gas mains (predominantly with plastic piping), local infrastructure improvements may be required to supply energy centres, associated with heat networks, that will support growth in Opportunity Areas and there may also be a requirement for the provision of new pressure reduction stations. These requirements should be identified in energy masterplans.
- 9.3.11 Cadent Gas and SGN operate London's gas distribution network. Both companies are implementing significant **gasholder de-commissioning programmes**, replacing them with smaller gas pressure reduction stations. The Mayor will work with key stakeholders including the Health and Safety Executive to achieve the release of the resulting brownfield sites for redevelopment including energy infrastructure where appropriate.
- 9.3.12 Land will be required for energy supply infrastructure including **energy centres**. These centres can capture and store energy as well as generate it. The ability to efficiently store energy as well as to generate it can reduce overall energy consumption, reduce peak demand and integrate greater levels of renewable energy into the energy system.

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<sup>159</sup>Based on data from London Energy and Greenhouse Gas Inventory (LEGGI) <https://data.london.gov.uk/dataset/leggi>

## Policy SI 4 Managing heat risk

- A Development proposals should minimise adverse impacts on the urban heat island through design, layout, orientation, materials and the incorporation of green infrastructure.
- B Major development proposals should demonstrate through an energy strategy how they will reduce the potential for internal overheating and reliance on air conditioning systems in accordance with the following cooling hierarchy:
- 1) reduce the amount of heat entering a building through orientation, shading, high albedo materials, fenestration, insulation and the provision of green infrastructure
  - 2) minimise internal heat generation through energy efficient design
  - 3) manage the heat within the building through exposed internal thermal mass and high ceilings
  - 4) provide passive ventilation
  - 5) provide mechanical ventilation
  - 6) provide active cooling systems.

9.4.1 Climate change means London is already experiencing higher than historic average temperatures and more severe hot weather events. This, combined with a growing population, urbanisation and the urban heat island effect, means that **London must manage heat risk** in new developments, using the cooling hierarchy set out above. Whilst the cooling hierarchy applies to major developments, the principles can also be applied to minor development.

9.4.2 In managing heat risk, new developments in London face two challenges – the need to ensure London does not overheat (the urban heat island effect) and the need to ensure that individual buildings do not overheat. **The urban heat island effect** is caused by the extensive built up area absorbing and retaining heat during the day and night leading to parts of London being several degrees warmer than the surrounding area. This can become problematic on the hottest days of the year as daytime temperatures can reach well over 30°C and not drop below 18°C at night. These circumstances can lead many people to feel too hot or not be able to sleep, but for those with certain health conditions, and ‘at risk’ groups such as some young or elderly Londoners, the effects can be serious



and worsen health conditions. Green infrastructure can provide some mitigation of this effect by shading roof surfaces and through evapotranspiration. Development proposals should incorporate green infrastructure in line with [Policy G1 Green infrastructure](#) and [Policy G5 Urban greening](#).

- 9.4.3 Many aspects of building design can lead to increases in overheating risk, including high proportions of glazing and an increase in the air tightness of buildings. Single-aspect dwellings are more difficult to ventilate naturally and are more likely to overheat, and should normally be avoided in line with [Policy D6 Housing quality and standards](#). There are a number of low-energy measures that can **mitigate overheating risk**. These include solar shading, building orientation and solar-controlled glazing. Occupant behaviour will also have an impact on overheating risk. The Mayor's London Environment Strategy sets out further detail on actions being taken to address this.
- 9.4.4 Passive ventilation should be prioritised, taking into account external noise and air quality in determining the most appropriate solution. The increased use of **air conditioning systems** is not desirable as these have significant energy requirements and, under conventional operation, expel hot air, thereby adding to the urban heat island effect. If active cooling systems, such as air conditioning systems, are unavoidable, these should be designed to reuse the waste heat they produce. Future district heating networks are expected to be supplied with heat from waste heat sources such as building cooling systems.
- 9.4.5 The Chartered Institution of Building Services Engineers (CIBSE) has produced **guidance on assessing and mitigating overheating risk in new developments**, which can also be applied to refurbishment projects. TM 59 should be used for domestic developments and TM 52 should be used for non-domestic developments. In addition, TM 49 guidance and datasets should also be used to ensure that all new development is designed for the climate it will experience over its design life. Further information will be provided in guidance on how these documents and datasets should be used.



## Policy SI 5 Water infrastructure

- A In order to minimise the use of mains water, water supplies and resources should be protected and conserved in a sustainable manner.
- B Development Plans should promote improvements to water supply infrastructure to contribute to security of supply. This should be done in a timely, efficient and sustainable manner taking energy consumption into account.
- C Development proposals should:
- 1) through the use of Planning Conditions minimise the use of mains water in line with the Optional Requirement of the Building Regulations (residential development), achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption)
  - 2) achieve at least the BREEAM excellent standard for the 'Wat 01' water category<sup>160</sup> or equivalent (commercial development)
  - 3) incorporate measures such as smart metering, water saving and recycling measures, including retrofitting, to help to achieve lower water consumption rates and to maximise future-proofing.
- D In terms of water quality, Development Plans should:
- 1) promote the protection and improvement of the water environment in line with the Thames River Basin Management Plan, and should take account of Catchment Plans
  - 2) support wastewater treatment infrastructure investment to accommodate London's growth and climate change impacts. Such infrastructure should be constructed in a timely and sustainable manner taking account of new, smart technologies, intensification opportunities on existing sites, and energy implications. Boroughs should work with Thames Water in relation to local wastewater infrastructure requirements.
- E Development proposals should:
- 1) seek to improve the water environment and ensure that adequate wastewater infrastructure capacity is provided

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<sup>160</sup>

Achieve at least a 12.5% improvement over defined baseline performance standard

- 2) take action to minimise the potential for misconnections between foul and surface water networks.

F Development Plans and proposals for strategically or locally defined growth locations with particular flood risk constraints or where there is insufficient water infrastructure capacity should be informed by Integrated Water Management Strategies at an early stage.

- 9.5.1 Londoners consume on average 149 litres of water per person per day – around 8 litres above the national average. All water companies that serve London are located in areas classified as seriously water-stressed. London is at risk of drought after two dry winters. During 2006 and 2012 **water use restrictions** affecting London were imposed. These restrictions were limited to sprinkler, hosepipe and non-essential user bans. A severe drought – with rota cuts, standpipes, reduced mains pressure or adding non-potable water to the mains supply – would have major implications for Londoners’ health and wellbeing, the environment and London’s economy. The Mayor will work with the water industry to prevent this level of water restriction being required for London in future.
- 9.5.2 An important aspect of avoiding the most severe water restrictions is to ensure that leakage is reduced and **water used as efficiently as possible**. The Optional Requirement set out in Part G of the Building Regulations should be applied across London.<sup>161</sup> A fittings-based approach should be used to determine the water consumption of a development. This approach is transparent and compatible with developers’ procurement and the emerging Water Label,<sup>162</sup> which Government and the water companies serving London are supporting.
- 9.5.3 Even with increased water efficiency and reduced leakage, water companies are forecasting an increasing demand for water. Without additional sources of supply, the increased demand will increase the risk of requiring water restrictions during drought periods. **Security of supply** should be ensured. Demand forecasts need to continue to be monitored and based on the consistent use of demographic data across spatial and infrastructure planning regimes.

<sup>161</sup> Planning Practice Guidance: Paragraph 014 of ‘Housing: optional technical standards’, DCLG, 27 March 2015. Where there is a clear local need, local planning authorities can set out Local Plan policies requiring new dwellings to meet the tighter Building Regulations’ Optional Requirement of 110 litres per person per day.

<sup>162</sup> <http://www.europeanwaterlabel.eu/thelabel.asp>

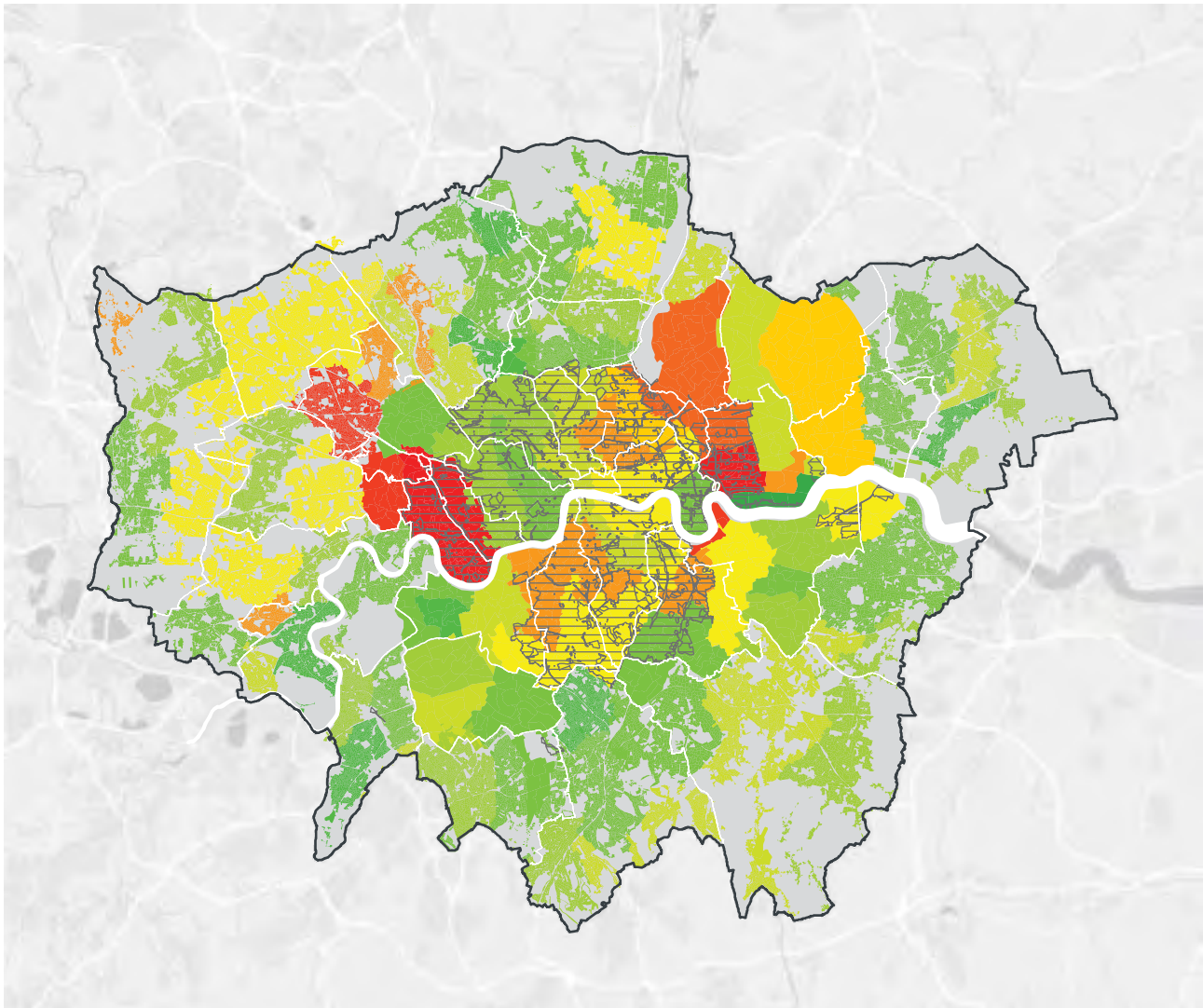


- 9.5.4 Thames Water has set out through the water resource management planning process its preferred approach to **strategic water supply options** to serve London and parts of the Wider South East. It is considering a suite of options, including a potential new reservoir, effluent reuse, water transfers and new groundwater sources.
- 9.5.5 A strategic approach to water supply networks to ensure future water resilience and, in particular, the timely planning for a new strategic water resource to serve London and the Wider South East is important. In its draft Water Resource Management Plan, Thames Water has explored coordinated supply options with the other water companies serving London and the South East of England working with the Water Resource South East Group. Water Resource East has undertaken similar work in the East of England area. All this involves **partnership working** with key stakeholders within London and beyond its boundaries.
- 9.5.6 **Infrastructure investment** is constrained by the short-term nature of water companies' investment plans. Similar to the approach to electricity supply, in order to facilitate the delivery of development it is important that investment in water supply infrastructure is provided ahead of need. To minimise wastage, water supply infrastructure improvements should give consideration to the replacement of ageing trunk mains.
- 9.5.7 In the context of the significant investment needed, measures to **protect and support vulnerable customers** in particular from rising water bills are important.
- 9.5.8 In relation to **wastewater** and improvements to the water environment, Water Framework Directive requirements should be maintained through the Thames River Basin Management Plan and the Catchment Plans prepared by the Catchment Partnerships, of which there are 12 in London. These Partnerships share lessons, experiences and best practice, and help achieve a coordinated approach to delivering the Thames River Basin Management Plan. Development Plans should be supported by evidence, which demonstrates that the development planned for:
- a. will not compromise the Thames River Basin Management Plan objective of achieving 'Good' status, or cause deterioration in water quality; and
  - b. will be supported by adequate and timely provision of wastewater treatment infrastructure.
- 9.5.9 The Urban Wastewater Treatment Directive drives improvements in **wastewater treatment infrastructure**. [Figure 9.4](#) provides a spatial illustration of the wastewater drainage capacity across London. Additional land may be required for upgrades or improvements at some wastewater treatment plants during the Plan period. Different wastewater treatment options may vary significantly in

terms of their energy requirements, and there are significant opportunities for energy generation from wastewater treatment (sewage sludge).

- 9.5.10 The Thames Tideway Tunnel is under construction and will help to improve the water quality of the River Thames by significantly reducing the frequency of untreated sewage being discharged into the Thames (known as combined sewer overflows). **Sustainable drainage** measures are of particular importance in areas with sewer capacity limitations and their widespread implementation over the coming decades will help the resilience of London and avoid the need for further major sewer tunnel projects. Thames Water is taking a long-term approach to drainage and wastewater management planning. Its London 2100 plan will identify the most appropriate strategy for ensuring that London's drainage and wastewater systems can meet the needs of London over the next 80 years in the most sustainable way.
- 9.5.11 London's tributary rivers suffer significant pollution from **misconnected sewers**. This allows untreated sewage into what are often small streams, many of which flow through London's parks and open spaces. Conversely, if surface water is misconnected to the foul system, sewer capacity issues are created within sewers and at sewage treatment works. Development proposals should therefore take action to minimise the potential for misconnections.
- 9.5.12 Development Plans and proposals should demonstrate that they have considered the opportunities for **integrated solutions** to water-related constraints and the provision of water infrastructure within strategically or locally defined growth locations. These could be Opportunity Areas or growth locations defined in Local Plans. Where such opportunities are identified, Development Plans should require an integrated and collaborative approach from developers. This could for example lead to the establishment of local water reuse systems or integrated drainage networks. Integration with the planning of green infrastructure could deliver further benefits.
- 9.5.13 A **water advisory group** with representatives from across the water sectors in London has been established to advise the Mayor and share information on strategic water and flood risk management issues across the capital.

**Figure 9.4 - Spatial illustration of wastewater drainage capacity across London**



**Flow Capacity Utilisation 2015  
Percent**

● 14	● 61 - 70
● 15 - 20	● 71 - 80
● 21 - 30	● 81 - 90
● 31 - 40	● 91 - 100
● 41 - 50	● 101 - 123
● 51 - 60	
⊘ Combined Sewer System	

Source: Thames Water

Contains OS data ©  
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database right (2017)

This Figure must be used  
in conjunction with  
paragraph 9.5.14

Note for [Figure 9.4](#): Thames Water has developed a model of its drains and sewers in London to assess waste water flows. The model compares the theoretical capacity of the drain or sewer pipe against how much waste water flow the pipe is currently receiving during a one in two-year rainfall event. The model's outputs can be visualised as a 'heat map', which highlights at a strategic scale where there is a higher (green) or lower (red) ability to receive additional flows. 'Green' areas do not mean that no additional drainage infrastructure is required. The modelling does not consider how waste water is routed through the network, so it should be noted that some 'green' areas will flow into 'red' areas, hence increasing flows upstream will exacerbate performance in the downstream catchments. The hatched area on the map shows the portions of the sewer system that are generally combined sewers, which means they capture both waste water and surface water flows.

### Policy SI 6 Digital connectivity infrastructure

- A To ensure London's global competitiveness now and in the future, development proposals should:
- 1) ensure that sufficient ducting space for full fibre connectivity infrastructure is provided to all end users within new developments, unless an affordable alternative 1GB/s-capable connection is made available to all end users
  - 2) meet expected demand for mobile connectivity generated by the development
  - 3) take appropriate measures to avoid reducing mobile connectivity in surrounding areas; where that is not possible, any potential reduction would require mitigation
  - 4) support the effective use of rooftops and the public realm (such as street furniture and bins) to accommodate well-designed and suitably located mobile digital infrastructure.
- B Development Plans should support the delivery of full-fibre or equivalent digital infrastructure, with particular focus on areas with gaps in connectivity and barriers to digital access.

9.6.1 The **provision of digital infrastructure** is as important for the proper functioning of development as energy, water and waste management services and should be treated with the same importance. London should



be a world-leading tech hub with world-class digital connectivity that can anticipate growing capacity needs and serve hard to reach areas. Fast, reliable digital connectivity is essential in today's economy and especially for digital technology and creative companies. It supports every aspect of how people work and take part in modern society, helps smart innovation and facilitates regeneration.

- 9.6.2 **London's capability** in this area is currently limited by a range of issues, including the availability of fibre and the speeds delivered. The industry regulator Ofcom publishes the data on digital connectivity coverage on which Figure 9.5 is based, but there are some limitations to the practicality of the data that is collected. Further work will be done to accurately identify locations in the capital where current connectivity provisions are not suitable for the needs of the area.
- 9.6.3 **Better digital connectivity** with a focus on capability, affordability, security, resilience and the provision of appropriate electrical power supply should be promoted across the capital. The specific requirements of business clusters, such as a symmetrical-capable service with the same upload and download speeds, should also be met.
- 9.6.4 Given the fast pace at which digital technology is changing, a flexible approach to development is needed that supports **innovation and choice**. Part R1 of the Building Regulations 2010 requires buildings to be equipped with at least 30 MB/s ready in-building physical infrastructure, however new developments using full fibre to the property or other higher-grade infrastructure can achieve connectivity speeds of 1GB/s. Developers should engage early with a range of network operators, to ensure that development proposals are designed to be capable of providing this level of connectivity to all end users. Mechanisms should also be put in place to enable further future infrastructure upgrades. Innovation is driving reductions in the size of infrastructure, with marginal additional unit costs, but greater digital connectivity is needed in more locations.
- 9.6.5 Development proposals should also demonstrate that **mobile connectivity** will be available throughout the development and should not have detrimental impacts on the digital connectivity of neighbouring buildings. Early consultation with network operators will help to identify any adverse impact on mobile or wireless connectivity and appropriate measures to avoid/mitigate them.
- 9.6.6 Access for network operators to rooftops of new developments should be supported where an improvement to the mobile connectivity of the area can be identified. Where possible, other opportunities to secure **mobile connectivity improvements** should also be sought through new developments, including for example the creative use of the public realm.



- 9.6.7 For some types of development (such as commercial) specific requirements regarding **communications access and security** may apply. Data centres, in particular, depend on reliable connectivity and electricity infrastructure. Warehouse-based data centres have emerged as a driver of industrial demand in London over recent years and this will need to be taken into account when assessing demand for industrial land (see [Policy E4 Land for industry, logistics and services to support London's economic function](#), [Policy E5 Strategic Industrial Locations \(SIL\)](#), [Policy E6 Locally Significant Industrial Sites](#) and [Policy E7 Industrial intensification, co-location and substitution](#)).
- 9.6.8 The Mayor will work with network operators, developers, councils and Government to develop guidance and share good practice to **increase awareness and capability** amongst boroughs and developers of the effective provision of digital connectivity and to support the delivery of policy requirements. The Mayor will also help to identify spatial gaps in connectivity and overcome barriers to delivery to address this form of digital exclusion, in particular through his Connected London work. Boroughs should encourage the delivery of high-quality / world-class digital infrastructure as part of their Development Plans.
- 9.6.9 Digital connectivity supports **smart technologies** in terms of the collection, analysis and sharing of data on the performance of the built and natural environment, including for example, water and energy consumption, waste, air quality, noise and congestion. Development should be fitted with smart infrastructure, such as sensors, to enable better collection and monitoring of such data. As digital connectivity and the capability of these sensors improves, and their cost falls, more and better data will become available to improve monitoring of planning agreements and impact assessments, for example related to urban design. Further guidance will be developed to make London a smarter city.