MAYOR OF LONDON

London Plan Guidance

Urban Greening Factor

January 2023

Copyright

Greater London Authority
January 2023

Published by:
Greater London Authority
City Hall
Kamal Chunchie Way
London E16 1ZE

www.london.gov.uk
enquiries 020 7983 4000
Email planningsupport@london.gov.uk

Maps contain OS data © Crown Copyright and database right (2021)

Table of contents

1 About this document 2
1.1 What is the Urban Greening Factor (UGF)? 2
2 Applying the UGF 2
2.1 Integrating urban greening into the design process 2
2.2 Determining urban greening priorities 3
2.3 Synergies between urban greening and other policy requirements 4
2.4 Using the UGF to deliver biodiversity net gain 6
2.5 Maintenance and monitoring 7
3 Calculating the UGF 7
3.1 UGF scores and weighting 7
3.2 Calculating the UGF 10
3.3 Submitting a UGF calculation 13
3.4 Planning application stages and types 15
3.5 Reviewing UGF planning application submissions 16
3.6 What happens when the target is not met? 17
4 Development of borough targets 18
4.1 Setting a local UGF target 18
Appendix 1 Categorising and measuring surface-cover types 23

London Plan Policy	Policy G5 Urban Greening
Local Plan making	Planning authorities to develop local UGF targets as part of the Local Plan process.
Planning Application type and how the London Plan Guidance will be applied	All major development Applications below the threshold for major development if required by a Local Plan (section 4).
Who is this guidance for?	Planning authorities, architects, landscape architects, ecologists and applicants. For use in designing and specifying urban greening as part of development applications and masterplans and in calculating the UGF. Planning authorities in developing local UGF targets as part of the Local Plan process and in developing Area Action Plans and Opportunity Area Planning Frameworks.

1 About this document

1.1 What is the Urban Greening Factor (UGF)?

1.1.1 The UGF is a tool used to evaluate the quality and quantity of natural features proposed as part of a development application, such as planting, waterbodies and green roofs, collectively referred to as urban greening. It enables major developments to demonstrate how they have included urban greening as a fundamental element of site and building design in order to meet London Plan Policy G5 Urban greening.

1.1.2 UGF target scores should be set out in Local Plans. Where Local Plans do not have UGF scores, the London Plan UGF scores of 0.4 for predominately residential developments and 0.3 for predominately commercial developments[1] should be applied.[2]

2 Applying the UGF

2.1 Integrating urban greening into the design process

2.1.1 UGF requirements should be considered from the outset of the design process to ensure site specific constraints can be considered and opportunities fully realised, including the potential to link on-site greening into the wider green infrastructure network.

2.1.2 Appointing a suitably qualified landscape and/or ecological professional to the design team from the outset will help ensure opportunities to maximise greening are fully integrated.

2.1.3 The early evaluation of greening options should inform wider design decisions. For example, if a lack of space at ground level may result in non-compliance with the relevant UGF target score, the necessary structural considerations should be integrated early in the building-design process to

[1] Excluding B2 and B8 uses.

[2] Predominately residential developments typically result in additional pressure on local green space and are therefore attributed a higher UGF target score. The 0.4 target is therefore applicable to any major development that predominately provides dwellings, including (but not limited to) applications for homes, student accommodation, co-living and assisted living. The 0.3 target score is therefore applicable to all other forms of development, including hotels and institutional buildings.

accommodate the required specification e.g. for green roofs to meet the UGF target score.

2.2 Determining urban greening priorities

2.2.1 The UGF is designed to provide flexibility to: enable an appropriate response to meeting local green infrastructure priorities and site-specific constraints; and respond to different uses within a development.

2.2.2 Where available, a borough's green infrastructure strategy and its associated plans should be used to: understand a site's context; and determine its current and potential role within the wider green infrastructure network. Applicants should refer to any prioritisation or design standards for certain greening types set out in borough Development Plan documents, or documents such as tree strategies, biodiversity action plans, open space strategies or other design guidance.

2.2.3 The Green Infrastructure Focus Map, published by the GLA, can be used to scope appropriate types of greening and, by boroughs, to inform pre-application discussions and evaluate how successfully a final UGF submission has responded to local context.

2.2.4 London's Local Environmental Records Centre, Greenspace Information for Greater London CIC, can also provide an environmental data search service to help inform the urban greening approach.

2.2.5 Examples of how urban greening could respond to the context of a development site include, but are not limited to:

- providing green routes that promote active travel, day and night, where current opportunities are limited
- delivering a sustainable drainage system (SuDS) scheme that reduces surface water run-off where there are particular issues of surface water drainage or flooding
- taking design cues from local habitat types, or the Local Nature Recovery Plan or the Biodiversity Action Plan (e.g. as per the green roof in Figure 2.1)
- delivering publicly accessible open space to reduce local deficiencies in access to open space
- providing other types of accessible greening where deficiency in access to public open space cannot be reduced
- reducing the urban heat island effect by developing greening plans that have a cooling effect both day and night

- mitigating environmental noise from road, rail or economic activity.

Figure 2.1 Green roof design informed by local biodiversity priorities



2.2.6 Figure 2.1 illustrates how the use of specific low-nutrient substrates and the planting plan are informed by the requirements of species listed in the Local Biodiversity Action Plan. Photovoltaic (PV) panels have also been provided to respond to energy policy requirements. Further guidance on how to measure green roofs under PVs for the UGF calculation is provided in Table A1.1 in Appendix 1.

2.3 Synergies between urban greening and other policy requirements

2.3.1 Informed by local green infrastructure priorities, project design briefs or similar should identify any synergies between urban greening and other policy requirements – for example, providing natural play opportunities through the design of SuDS, as shown in Figure 2.2.

Figure 2.2 A dry swale incorporating wildflower planting and opportunities for informal play



2.3.2 Whilst the provision of urban greening can help to address other London Plan policies, the UGF tool cannot be used to demonstrate compliance with these policies as they must be addressed in their own right. This is particularly important in terms of the relationship between the UGF and other policies within Chapter 8 (Green Infrastructure and Natural Environment) of the London Plan.

Box 1: Using urban greening to help meet wider London Plan policy requirements

Relevant policies include:

- Policy D3 Optimising site capacity through the design-led approach
- Policy D8 Public realm
- Policy S4 Play and informal recreation
- Policy G1 Green infrastructure
- Policy G4 Open space
- Policy G6 Biodiversity and access to nature
- Policy G7 Trees and woodlands
- Policy G8 Food growing
- Policy SI 1 Improving air quality
- Policy SI 12 Flood risk management
- Policy SI 13 Sustainable drainage
- Policy SI 14 Waterways – strategic role
- Policy SI 17 Protecting and enhancing London's waterways
- Policy T2 Healthy Streets

2.4 Using the UGF to deliver biodiversity net gain

2.4.1 For developments with a low baseline level of biodiversity, an ecologically informed approach can create new areas of wildlife habitat to deliver biodiversity gains alongside other green infrastructure benefits. New habitats should be designed and managed to contribute to local biodiversity priorities and the Local Nature Recovery Plan where this is in place.

2.4.2 Where protected species, or priority habitats or species, are found on a development site, or where a proposed development may impact a Site of Importance for Nature Conservation (SINC), the requirements of Policy G6 (Biodiversity and access to nature) to manage impacts on biodiversity should be met, in addition to any relevant UGF targets. In these cases, any new urban greening should prioritise helping to avoid or to mitigate the impacts of the proposed development on biodiversity; and providing locally relevant greening that complements the site's existing wildlife value and achieve an overall gain in biodiversity.

2.4.3 Development proposals should include details of how they have sought to achieve a net biodiversity gain. Applicants should ensure that any

Preliminary Ecological Appraisal Reports or Ecological Impact Assessments[3] they commission highlight opportunities for urban greening to deliver biodiversity gains, and that these documents are used to inform the project design brief.

2.4.4 The UGF and the national requirement for mandatory biodiversity net gain (BNG) are separate requirements. However, since both require consideration early on in the design process, and are concerned with greening, a design team should consider both tools alongside one another. Compliance with one requirement does not guarantee compliance with the other. Applicants should therefore submit evidence of compliance with both UGF and BNG targets.

2.4.5 Further guidance on urban greening design opportunities for wildlife is provided in Urban Greening for Biodiversity Net Gain: A Design Guide.

2.5 Maintenance and monitoring

2.5.1 Greening measures proposed to meet UGF targets as part of an application should be clearly shown and secured as part of the approved documents for a planning application.

2.5.2 Management and maintenance plans should be used to ensure that the agreed greening measures are provided and maintained in line with the proposals at planning stage. Boroughs may also use planning conditions or section 106 agreements in order to support appropriate monitoring of these measures.

3 Calculating the UGF

3.1 UGF scores and weighting

3.1.1 Different types of greening that can be incorporated into development are categorised by surface-cover types that broadly indicate their relative quality, in particular their potential for rainwater infiltration. This is used as a proxy for naturalness and functionality. Scores range from 1 for semi-natural vegetation through to 0 for impermeable sealed surfaces.

[3] Further information on different types of ecological surveys and their purpose can be accessed from the Chartered Institute of Ecology and Environmental Management.

Table 3.1 Surface-cover types and factor scores

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 Living Roofs for descriptions[A]	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[B]	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[C]	0.7
Flower-rich perennial planting – see the Royal Horticultural Society (RHS) guide to perennial plants[D]	0.7
Rain gardens and other vegetated sustainable drainage elements – see CIRIA case studies[E]	0.7
Hedges (line of mature shrubs one or two shrubs wide) – see the RHS guide to hedges[F]	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[4] – see the NBS Guide to Façade Greening for overview[G]	0.6

[4] Fire safety guidance restricts the use of combustible materials which will limit the use of green walls where they form part of the external wall of a building.

Surface-cover type	Factor
Groundcover planting – see the RHS guide to groundcover plants for overview[H]	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[I]	0.3
Water features (chlorinated) or unplanted detention basins	0.2
Permeable paving – see CIRIA for overview[J]	0.1
Sealed surfaces (e.g. concrete, asphalt, waterproofing, stone)	0

Notes for Table 3.1

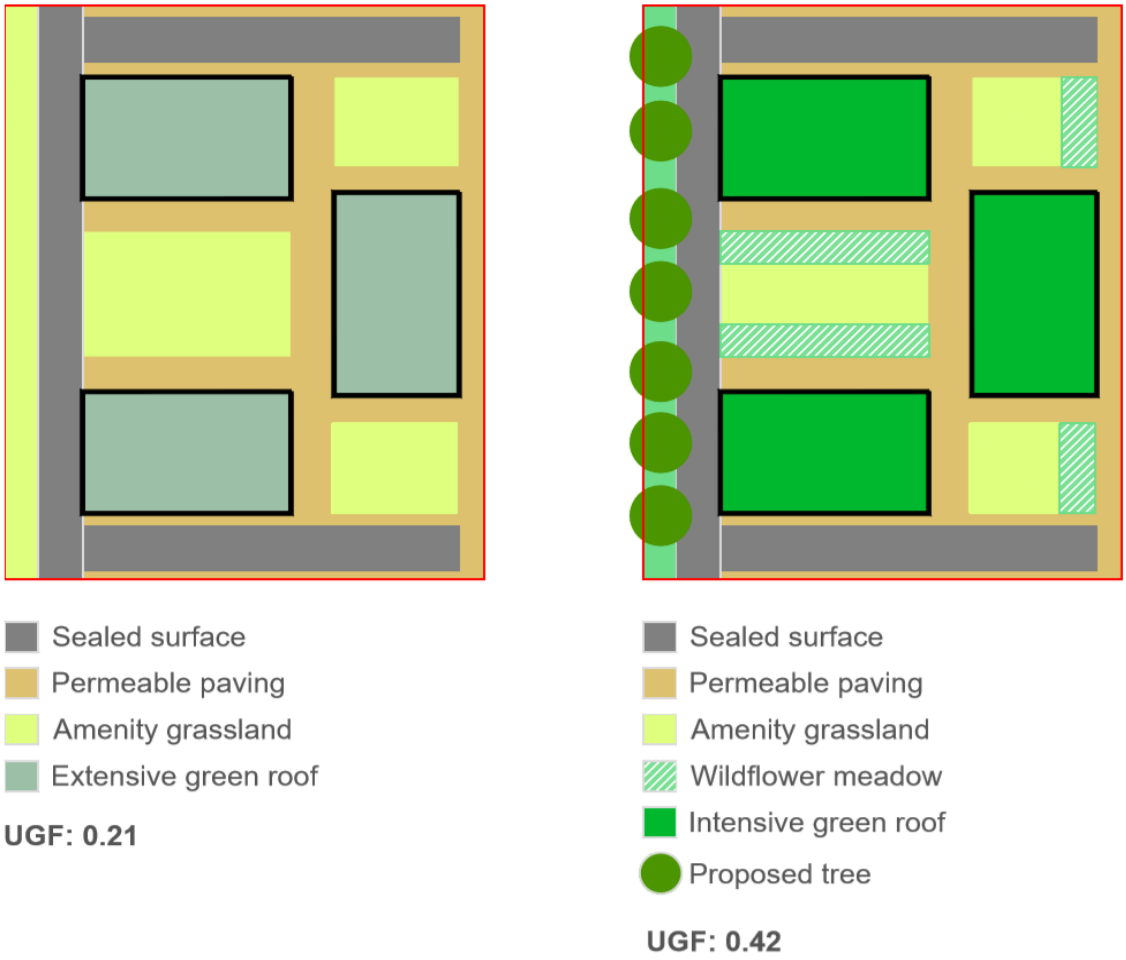
A. https://livingroofs.org/intensive-green-roofs/
B. http://www.tdag.org.uk/trees-in-hard-landscapes.html
C. https://livingroofs.org/wp-content/uploads/2016/03/grocode2014.pdf
D. https://www.rhs.org.uk/advice/profile?pid=868
E. http://www.susdrain.org/case-studies/
F. https://www.rhs.org.uk/advice/profile?pid=351
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-surfacetypes.html

3.1.2 The weighting of surface-cover type scores encourages the provision of higher-quality urban greening, rather than large quantities of low-quality features. For example, while amenity grassland can contribute to SuDS and play space, it will usually require more intensive management and watering, and has relatively little ecological value compared to species-rich grassland. Accordingly, amenity grassland is awarded a factor of 0.4 and species-rich grassland is awarded a factor of 1.

3.1.3 In order to achieve the same UGF score, an area of amenity grassland would need to cover twice the size of an area of species-rich grassland. Likewise, an extensive green roof with a shallow substrate needs twice the

area of that which meets the quality standards set in the Green Roof Code.[5] Figure 3.1 shows how using better-quality surface-cover types can achieve a higher UGF score without increasing the overall footprint of greening.

Figure 3.1 Plans showing how the quality of different green surface-cover types can affect the UGF score



3.2 Calculating the UGF

3.2.1 The following steps should be followed to calculate the overall UGF score for a proposal:

[5] The Green Roof Code is an industry-developed code of practice that covers the design, installation and maintenance of green roofs.

- for each surface-cover type in the development, assign the corresponding UGF factor in line with the factor scores in Table 3.1
- measure the area of each surface-cover type in square metres (see Table A1.1 for further guidance)
- multiply the factor score by the area of the corresponding surface-cover type
- add the scores together for each surface-cover type
- divide the combined score by the total site area in square metres to determine the scheme's UGF score.

Figure 3.2 Calculating the UGF score

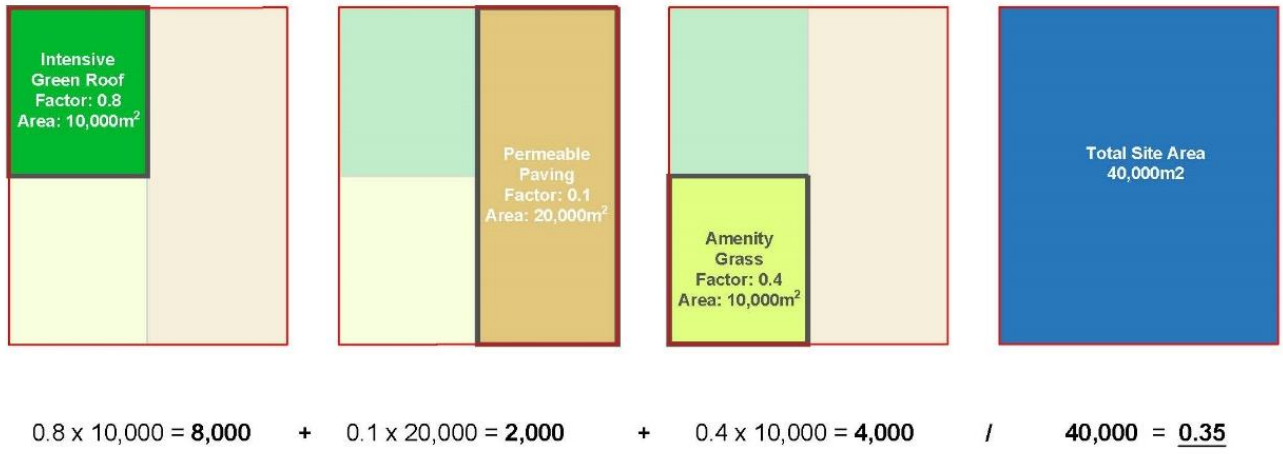


Figure 3.2 illustrates how this calculation works in practice. In this example (8,000 + 2,000 + 4,000) / 40,000 = a UGF score of 0.35.

3.2.2 In calculating the UGF score, the following principles should also be applied:

- The UGF targets set out in the London Plan are for "predominately residential" and "predominately commercial development". In the case of mixed-use developments, the use class with the highest square meterage of floorspace should be used to determine the target UGF score and the appropriate target agreed with the borough.
- The UGF should always be calculated on the total site area, equivalent to the red-line boundary.
- Adjacent areas of land not included in the red-line boundary, irrespective of ownership or management, must not be included.
- Retained surface-cover types should be included in the calculation.

- Vertical surface areas of proposed green walls should be included in the UGF calculation, but not be added to the site's total area. This may mean it is possible to score a UGF of more than 1, which is equivalent to the whole site area, where extensive use of green walls is proposed.[6]

- Where a surface-cover type is not included in Table A1.1, a reasonable assumption of the most relevant factor score should be made, recorded on the application drawing and referenced in the Design and Access Statement.

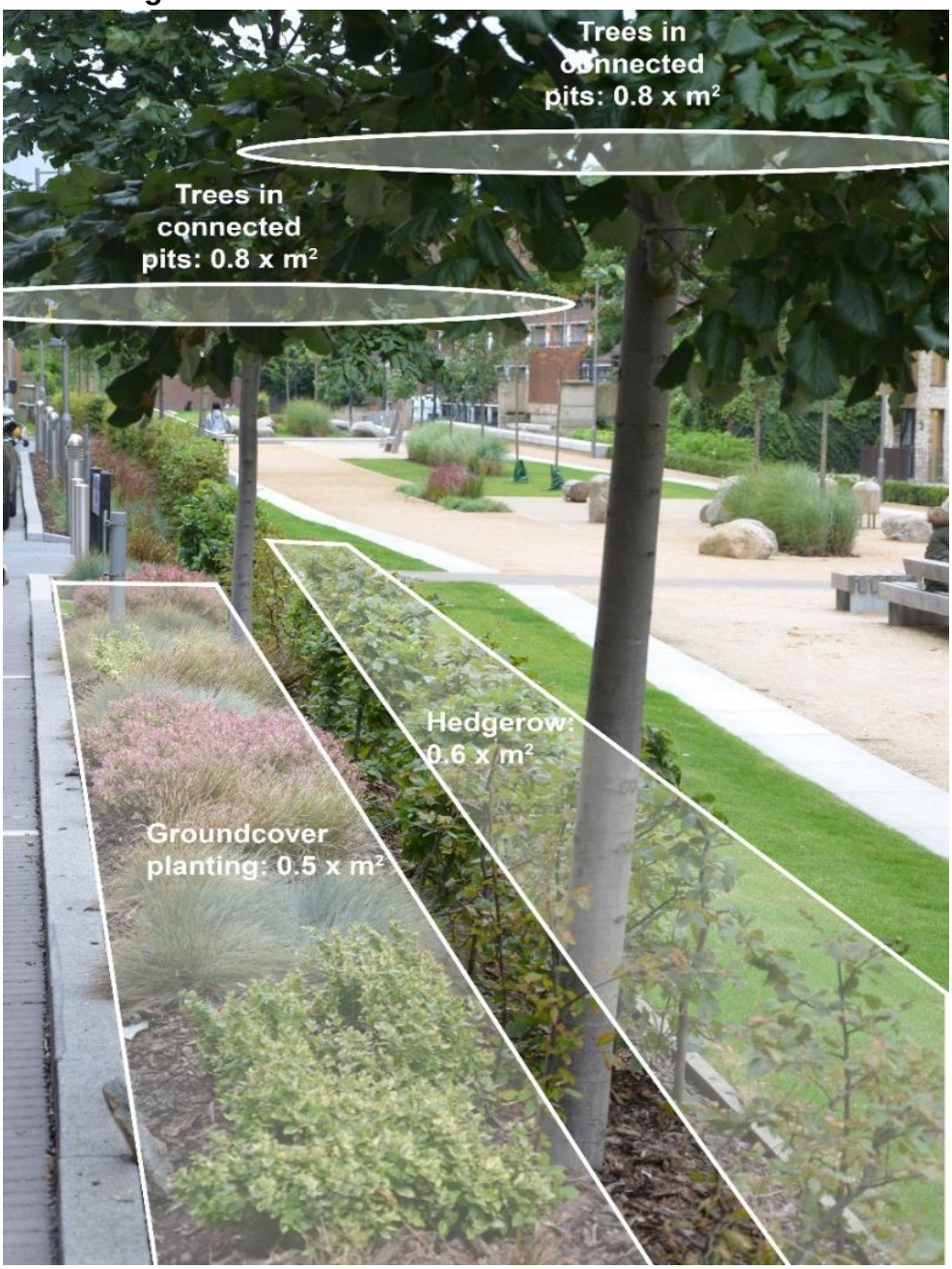
- Where tree canopies will grow over another permeable surface, the area of the surface underneath the canopy can also be included in the UGF calculation – see Figure 3.3.

- Where land within the site boundary is not under the control of the applicant, for instance adopted roads, these should still be included in the total site area. This may constrain the area available for urban greening. In such instances the applicant should seek to make up for the constraint by including more high-quality urban greening across the wider site.

- Where trees and other planting are proposed at ground level, but above basements or other underground structures, the relevant UGF score should be given for each surface-cover type used, rather than a generic green roof score.

[6] Fire safety guidance restricts the use of combustible materials that will limit the use of green walls where they form part of the external wall of a building.

Figure 3.3 Illustration showing how to calculate tree canopies and groundcover



3.3 Submitting a UGF calculation

3.3.1 In addition to a landscape masterplan, UGF calculations should be submitted as a separate stand-alone drawing and should include:

- a masterplan that is colour-coded according to surface-cover types
- a completed UGF table.

3.3.2 A landscape masterplan, as shown in Figure 3.4, is typically submitted as part of a planning application. It is helpful to understand the overall layout and character of the landscape design. However, it does not provide sufficient detail to support a UGF calculation submission. Landscape masterplan drawings should be accompanied by a specific UGF masterplan, shown in Figure 3.5.

Figure 3.4 Example landscape masterplan



Figure 3.5 Landscape plan from Figure 3.4 translated into UGF masterplan and UGF table



3.3.3 UGF masterplans should clearly show the different types of surface cover and their contribution to the overall UGF score. The UGF table should provide sufficient details of the type of greening to allow interpretation and checking of the UGF types. Boroughs may request further detailed information where necessary to clarify or verify proposed greening measures, e.g. in the case of large or more complex masterplans. The figures for different greening types should not be rounded. A UGF table calculator can be downloaded to assist with preparing the UGF masterplan.

3.4 Planning application stages and types

3.4.1 **Phased development** – each phase of a proposed development should demonstrate that it delivers the quality and quantity of urban greening necessary in order for the scheme as a whole to meet the UGF target.

3.4.2 **Outline applications** – where landscape design is a reserved matter, the UGF should be calculated/submitted based on the illustrative landscape plan and other information to demonstrate the UGF target will be feasible at detailed design stage.

3.4.3 A planning condition is then required to include a final UGF calculation as part of a Reserved Matters Application to ensure that the UGF target is met.

3.5 Reviewing UGF planning application submissions

3.5.1 The questions set out in **Error! Reference source not found.** should be considered as part of the review process undertaken by the borough or determining authority:

Table 3.2 Reviewing UGF submissions

Key considerations	Suggested approach to reviewing compliance
Does the form and type of urban greening proposed address local needs and priorities?	Check whether the application references baseline information such as the Green Infrastructure Focus map, project-specific analysis or a borough Green Infrastructure Strategy.
Is the UGF score provided accurate?	Review the distribution of higher and lower-scoring surface-cover types. High-scoring applications will typically include higher-scoring elements. Consider the scale of the drawing, using the scale bar to check the measurements are reasonable. Check whether the total site area been used as part of the UGF calculation, or whether some areas have been excluded.
Have assumptions been made and are they reasonable?	Any assumptions underpinning a UGF calculation should be clearly stated. For example: • the year of establishment used to calculate the area of proposed tree canopy cover • any assumption made with regard to a combined score for mixed planting schemes – e.g. a planting scheme of 50 per cent ground cover (UGF of 0.5) and 50 per cent

Key considerations	Suggested approach to reviewing compliance
	perennial planting (UGF of 0.7) may reasonably assume a combined score of 0.6.
Is the categorisation of surface-cover types supported in the wider application material?	Check for example: • whether the quality of green roof proposed matches the detailed specification of green roof • where species-rich grassland is proposed, whether this is also proposed to be appropriately managed as such in the landscape management plan.
Has the correct UGF target score been applied?	Review the proposed use of the development, and the split of residential and commercial where appropriate, to confirm the correct target score has been applied.

3.6 What happens when the target is not met?

3.6.1 The role of UGF is to demonstrate urban greening has been included as a fundamental element of site and building design. As such it cannot be effectively delivered off-site. If a proposal does not meet the UGF target score, the borough should first request the applicant to review options for improving the quality or quantity of urban greening proposed onsite to increase the scheme's UGF score.

3.6.2 Where this review confirms that the target score cannot be met, robust justification should be provided by the applicant setting out the specific constraints to delivery, the options considered to meet the target, and the reasons why it is not achievable.

3.6.3 Where a target cannot be met, a borough may wish to consider options for securing offsite greening in the immediate vicinity of the site (where practical) or financial contributions to make up any shortfall.

4 Development of borough targets

4.1 Setting a local UGF target

4.1.1 The establishment of new borough targets should be based on evidence relating to the need and opportunity for new green infrastructure, ensuring it is both locally ambitious and achievable. Targets should be set out, where possible, in Development Plan documents. Boroughs should apply the target UGF scores set out in the London Plan when assessing major applications if they do not have relevant evidence to set a local target.

4.1.2 When developing local UGF targets, boroughs should retain the following key elements of Policy G5:

- the calculation methodology
- the surface-cover types set out in London Plan Table 8.2
- the surface-cover factor scores set out in London Plan Table 8.2.

4.1.3 Any preference for specific surface-cover types should be expressed through a prioritisation in local Development Plan documents. A recommended process for developing local UGF targets is set out in Figure 4.1.

4.1.4 The targets in the London Plan were informed by the 'Urban Greening Factor for London' report (2017) which provides a rationale for the overarching approach.

Figure 4.1 Recommended process for developing local UGF policies



Step 1: Define a green infrastructure baseline

4.1.5 Where available, a borough's green infrastructure strategy should be used to determine and evidence local UGF targets.

4.1.6 Boroughs that do not have a green infrastructure strategy, and wish to consider setting new UGF targets, will need to gather evidence of sufficient scope and detail to support target setting. This should include an assessment of the local need for green infrastructure (e.g. types and/or locations) and the identification of opportunities to address this need through the planning process.

4.1.7 Boroughs should consider how other related plans and strategies may inform green infrastructure needs and priorities. This could, for example, include flood-management plans; catchment plans; biodiversity action plans; London's local nature recovery strategy or borough local nature recovery plans; and tree strategies. It could also include Local Plans and related documents such as Opportunity Area Planning Frameworks, Area Action Plans and Neighbourhood Plans.

4.1.8 The GLA have published green infrastructure data and tools to assist boroughs in planning for green infrastructure.

4.1.9 When undertaking a local needs assessment exercise, boroughs should do the following:

- Map and categorise existing green infrastructure assets. This includes open spaces of different scales; trees and woodlands; and habitats (SINCs and land with other biodiversity designations or value).
- Overlay other information that is relevant to understanding the green infrastructure network baseline, such as the walking and cycling network; areas of deficiency in access to open space (including hours of public access where this is available); and areas of deficiency in access to nature.
- Overlay information about environmental issues or challenges that green infrastructure could help to address, such as poor air or water quality, surface water flooding, noise or overheating, both day and night.
- Overlay demographic data such as the Indices of Deprivation[7] (the Health Deprivation and Disability Domain will be of particular interest given the significance to health of green space access) and other relevant information, such as deficiency in access to play space, to understand any interrelationships between datasets.
- Overlay other relevant spatial strategies or plans that the borough may have – for example, improving green and blue space or active travel networks.

[7] Ministry of Housing, Communities & Local Government, English indices of deprivation 2019: technical report, 26 September 2019

Step 2: Identify opportunities for new greening

4.1.10 The identification of opportunities should be focused on what can be delivered through the planning system. Overlaying site allocations, Opportunity Areas and the location of other regeneration or significant infrastructure projects onto the baseline map provides the opportunity to understand where land use changes could secure appropriate types of new greening.

4.1.11 This process can help understanding of borough-wide thematic issues and/or locally specific issues concentrated in certain areas that new urban greening in developments could help to mitigate, or where it could enhance the existing green infrastructure network. Examples could include a low level of tree-canopy cover across a borough or localised surface water run-off contributing to poor water quality. The UGF can also contribute to biodiversity enhancement and nature recovery by delivering greening measures that are in line with opportunities identified in Local Nature Recovery Plans.

4.1.12 This spatial understanding can indicate where developments could cumulatively contribute to addressing more strategic priorities that could not be achieved on an individual site.

4.1.13 As well as local sources of data, the GLA's Planning Data Map and Infrastructure Map can be used to identify relevant areas or challenges.

Step 3: Retain London Plan target scores or propose change

4.1.14 Based on the analysis of the green infrastructure baseline and opportunities for greening in steps 1 and 2, boroughs should then consider the following options:

- retain the targets set out in the London Plan
- set new targets that apply to the whole borough
- set different targets for different locations within a borough
- introduce different targets for different use classes
- introduce a target for minor developments.

4.1.15 Guidance on how a borough could approach each of the options is set out below.

a) Retain the targets set out in the London Plan

4.1.16 The London Plan targets have been set to be sufficiently challenging and applicable to development across London. The evidence gathered in steps 1

and 2 may indicate it is appropriate to retain the target scores set out in the London Plan.

b) Set new targets that apply to the whole borough

4.1.17 Where evidence of need and opportunities concludes that there is a rationale for borough-wide change, then a borough may decide to set a new local UGF target across the whole borough.

4.1.18 Examples of when this approach may be suitable include, but are not limited to, the following:

- The identification of a severe deficiency in green infrastructure compared to neighbouring boroughs. This comparison may be quantified using local or regional data, such as the GLA's green cover map.
- The identification of significant potential for new urban greening across the majority of a borough's area, for example if a very high percentage of the borough falls within one or more Opportunity Areas or Strategic/Local Areas for Regeneration.

c) Set different targets for different locations within a borough

4.1.19 This approach is most suitable either when the local needs assessment highlights significant environmental or social challenges in particular places, or where significant land-use change provides opportunities to deliver increased levels of new green infrastructure in a specific area.

4.1.20 These areas may include, but are not limited to:

- Opportunity Areas
- areas of deficiency to open space or to nature
- proposed green corridors identified as part of a green infrastructure strategy.

4.1.21 Where locally specific targets relate to Opportunity Areas, they should be written into Opportunity Area Planning Frameworks or planning policy documents. Where they relate to proposed green corridors, specific guidance detailing the typology of the greening required should be included in the green infrastructure strategy and/or local nature recovery plan and referenced in the local UGF policy.

4.1.22 Areas subject to different UGF targets should be recorded on a map so that applicants can easily determine the relevant target.

d) Introduce different targets for one or more different use classes

4.1.23 The London Plan sets targets for predominately residential and predominately commercial development and excludes development in use classes B2 and B8. A borough that anticipates a significant proportion of co-located industrial/residential applications may look to set a new target for this mix of use classes.

4.1.24 Reviewing the impact of planned development on the existing green infrastructure network may also provide justification for changing a target for a specific use class. For example, if a borough has widespread deficiency in access to open space, it may be beneficial to increase the target score for residential development, since new residential developments would place additional pressure on the existing open space network. In such instances, the increase should be accompanied by guidance setting out the type of green infrastructure most suitable to address the deficiency.

e) Introduce a UGF policy for minor development applications

4.1.25 This additional approach is most suited to boroughs where minor applications deliver a high proportion of development, and where other policy approaches would not be more appropriate e.g. requiring specific greening typologies such as green roofs, SuDS or trees to be provided in all minor developments above a certain threshold (to be determined by the borough).

4.1.26 The Small Site Design Codes LPG includes examples of how small housing developments can be designed to achieve no net loss of green cover, in line with Standard A4.3 in the Housing Design Standards LPG and Policy H2 Small Sites of the London Plan.

Steps 4 and 5: Testing, monitoring and review

4.1.27 Boroughs should implement a periodic review of their policy to determine if UGF targets set have remained achievable and ambitious.

4.1.28 If developments are consistently overachieving compared to the London Plan UGF target, a higher borough-wide UGF target, or a higher locally specific target, may be appropriate. This may occur, for example, if applications regularly include large areas of existing green cover leading to compliance with the target without the need for new greening.

4.1.29 The UGF scores secured at planning stage for relevant development types are recorded in the Planning London Datahub. This data can be used by boroughs to inform their own UGF policy reviews and support Local Plan preparation.

Appendix 1 Categorising and measuring surface-cover types

A1.1.1 Table 8.2 in the London Plan sets out the UGF factor score that should be applied to 16 different surface-cover types. Table A1.1 provides further guidance on how to categorise and measure the 16 surface-cover types when calculating a UGF score. The scores are based on planting as expected at maturity

Table A1.1 Surface-cover types and measurement details

Surface-cover type	Factor	Notes	How to measure
Semi-natural vegetation (e.g. trees, woodland, species-rich grassland) maintained or established on site.	1	Includes all priority habitats listed on page 181 of the London Environment Strategy, and habitats of principal importance (Priority Habitats) listed in schedule 41 of the Natural Environment and Rural Communities Act (2006). Newly created woodland is defined as a diverse mixture of tree species, where the intention is to develop a structurally diverse habitat with an understory and ground layer of vegetation. Groups of standard trees that would be maintained as such should be awarded a UGF of 0.8 or 0.6, depending on the relationship between canopy and soil volume, as set out below. Species-rich grasslands/meadows should include a range of perennial flowers and grasses that will not be frequently cut. Includes dense naturalistic, mixed-species shrub planting (e.g. edible shrub beds) and native scrub. Includes trees that form part of areas of semi-natural vegetation e.g. within meadows or wetlands. Other retained	All proposed forms of vegetation to be measured by area in square metres. Existing and proposed woodland should be measured in square metres as the area to be retained or planted, and not by current or predicted canopy cover.

Surface-cover type	Factor	Notes	How to measure
		trees should be included in the relevant Standard Trees category.	
Wetland or open water (semi-natural; not chlorinated) maintained or established on site.	1	Includes, rivers, streams, canals and other natural or semi-natural bodies of water.	Measure in square metres.
Intensive green roof or vegetation over structure. Substrate minimum settled depth of 150mm.	0.8	The minimum substrate depth should inform the factor applied to roofs designed to have a variable substrate depth.	Measure in square metres. Include total area of intensive green roof, including areas that are underneath PV cells, if proposed.
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.	0.8	Existing trees should be included where the trunk is on site. The entire canopy should be included in the UGF calculation, including any portion of the canopy that is beyond the site boundary. Where a tree canopy overhangs the site, but the trunk is off-site, the tree canopy should not be included in the UGF calculation. With regard to the relationship between tree canopy and soil volume: • tree canopy should be measured in square metres	Measure projected tree canopy in square metres. Projected tree canopy is to be measured as shown on the Landscape Masterplan drawing and should not exceed published maximum canopy area stated by supplier nursery. Features underneath the tree canopy should also be calculated in their own right

Surface-cover type	Factor	Notes	How to measure
		• soil volume should be measured in cubic metres. For example, to achieve a UGF of 0.8, a tree with a projected canopy (as shown on the landscape plan and not exceeding that published by the supplier nursery) of 50 square metres would require a soil volume of at least 33 cubic metres (two-thirds of 50 is 33). Note that best-practice guidance concerning the useful depth of soil under trees should be taken into consideration.	according to their own factor, e.g. where trees stand over amenity grassland.
Extensive green roof with substrate of minimum settled depth of 80mm (or 60mm beneath vegetation blanket) – meets the requirements of GRO Code 2014.	0.7	The minimum substrate depth should inform the factor applied to roofs designed to have a variable substrate depth. Includes extensive 'brown' biodiverse green roofs with equivalent substrate depths.	Measure in square metres. Include total area of extensive green roof, including areas that are underneath PV cells, if proposed.
Flower-rich perennial planting.	0.7	Includes mixed ornamental herbaceous planting. Where mixed planting is proposed in a bed – e.g. perennials, ground cover and shrubs – assign the whole planting bed to the dominant cover type.	Measure in square metres.

Surface-cover type	Factor	Notes	How to measure
Rain gardens and other vegetated sustainable drainage elements.	0.7	Where a sustainable drainage element is covered in a higher-scoring surface-cover type, e.g. a detention basin of flower-rich grassland, the higher factor should be used.	Measure in square metres.
Hedges (line of mature shrubs one or two shrubs wide).	0.6	Ornamental shrub beds, allotments and other areas set aside for food growing should also be assigned this factor score.	Measure in square metres.
Standard trees planted in pits with soil volumes less than two-thirds of the projected canopy area of the mature tree.	0.6	Existing trees should be included where the trunk is on site. The entire canopy should be included in the UGF calculation, including any portion of the canopy that is beyond the site boundary. Where a tree canopy overhangs the site, but the trunk is off-site, the tree should not be included in the UGF calculation. With regard to the relationship between tree canopy and soil volume: • tree canopy should be measured in square metres • soil volume should be measured in cubic metres. For example, to achieve a UGF of 0.6, a tree with a projected canopy, as shown on the landscape plan and not exceeding that published by the supplier nursery, of 50 square metres would require a soil volume 33 cubic metres or below (two-thirds of 50 is 33).	Measure projected tree canopy in square metres. Projected tree canopy is to be measured as shown on the Landscape Masterplan drawing and should not exceed published maximum canopy area stated by supplier nursery. Features underneath the tree canopy should also be calculated in their own right according to their own factor.

Surface-cover type	Factor	Notes	How to measure
		Note that best-practice guidance concerning the useful depth of soil under trees should be taken into consideration.	
Green wall – modular system or climbers rooted in soil.	0.6	Proprietary green wall systems to be included. Climbers are to be included where the design intent is to achieve the covering of a wall. Fire safety guidance restricts the use of combustible materials that will limit the use of green walls where they form part of the external wall of a building.	Measure surface area on the vertical plane in square metres. The total site area should not be increased to include the area of a green wall.
Groundcover planting.	0.5	N/A	Measure in square metres. Include total area of ground cover, including areas that are underneath tree canopies.
Amenity grassland (species-poor, regularly mown lawn).	0.4	Also includes species-poor grasslands that will be managed by infrequent cutting.	Measure in square metres. Include total area of amenity grassland, including areas that are underneath tree canopies.
Extensive green roof of sedum mat or other	0.3	Includes lightweight ‘brown’ biodiverse green roofs that do not meet the GRO code 2014.	Measure in square metres.

Surface-cover type	Factor	Notes	How to measure
lightweight systems that do not meet GRO Code 2014.			Include total area of extensive green roof, including areas that are underneath PV cells, if proposed.
Water features (chlorinated) or unplanted detention basins.	0.2	N/A	Measure in square metres.
Permeable paving.	0.1	Blue roofs (water-storage tanks under a permeable but unvegetated roof deck) should be awarded the same factor score as permeable paving.	Measure in square metres.
Sealed surfaces (e.g. concrete, asphalt, waterproofing, stone).	0	Includes artificial grass	Measure in square metres.

Equality Impact Assessment (EqIA) for London Plan Guidance

London Plan Guidance:	Urban Greening Factor
Teams involved:	London Plan Team and Green Infrastructure Team
Date:	September 2022

1. Please provide an outline of the guidance, who it is aimed at and any key issues to be aware of.

The Urban Greening Factor (UGF) is a tool to measure and assess the quantity and quality of greening provided on a development. The guidance builds on the requirements in London Plan Policy G5, which sets out interim targets for different development types, providing further advice on the application of the UGF tool to developments and advice to boroughs on introducing UGF targets through Local Plans. Architects, landscape architects, ecologists and applicants – in addition to planning authorities – will be able to use this guidance in designing and specifying greening in development, and in quantifying and assessing greening against relevant UGF targets.

2. Which of the Public Sector Equality Duty (PSED) aims are relevant to the guidance and the impacts identified?

1) Eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act.

The UGF is designed to provide flexibility to enable an appropriate response to meeting local green infrastructure priorities and site-specific constraints, as well as to respond to different uses within a development. The target for major residential development applies to all tenures, and aims to ensure that occupants of market and affordable housing have equal provision of green infrastructure.

2) Advance equality of opportunity between people who share a protected characteristic and those who do not.

The guidance sets out how boroughs should approach setting local UGF targets. This involves undertaking a local needs assessment exercise to determine areas of deficiency based on demographic and spatial environmental data to identify opportunities for new greening. It also allows for flexible approaches to design greening to suit the needs of people with protected characteristics.

3) Foster good relations between people who share a protected characteristic and those who do not.

By requiring the application of the UGF to all major developments, the guidance also seeks to create opportunities for social interaction, for example through greening communal areas of developments or creating new open spaces. This could help to foster good relations and tackle prejudices between people who share a protected characteristic and those who do not.

Assessment

List aspects of the guidance that might affect particular groups

Guidance key aspects, chapter headings, theme etc	Particular group that could be affected
Encouraging spaces to be open, accessible and inclusive	Black, Asian and Minority Ethnic people; disabled people; older people; younger people; people on a low income; LGBTQ+ people; women; and pregnant people
Providing green routes that promote active travel where current opportunities are limited	Black, Asian and Minority Ethnic people; disabled people; older people; younger people; LGBTQ+ people; people on a low income; women; and pregnant people
Creating higher scores for wetlands, woodlands and biodiversity-rich planting reduces risk of flooding, helps improve air quality and provides a diversity-rich green environment for better mental health	Older people; disabled people; Black, Asian and Minority Ethnic people

* It should be noted that the general policy requirement and principles are already required through the London Plan. This London Plan Guidance is providing further detail on how the policies should be implemented, and therefore further amplifying the effects.

Equality impacts, mitigating actions and justification (where applicable)

Group	Potential impact description What positive and negative impacts have been identified (known and potential) for particular groups? Refer to evidence (including engagement). Check the objectives from the Integrated Impact Assessment (IIA) and the EqIA guide questions and use these where relevant to structure your answers. Check the EqIA elements from the original IIA and any subsequent assessments.	Relevant PSED aim (1, 2a, b or c, and/or 3)	Actions identified and/or justification For negative impacts, set out mitigating actions to minimise or eliminate negative impacts and any action plan. If negative impacts cannot be mitigated, provide **objective justification**. For positive impacts, consider how these could be maximised.	Assessment of equality impacts Score each impact as either: +2 Strong positive +1 Positive 0 Neutral - 1 Negative - 2 Strong negative Mixed or uncertain
Age (consider particularly children, under-21s and over-65s)	Positive: The UGF guidance encourages increased access to green spaces and public open spaces (within the development as well as part of the wider public realm). It also aims to make such spaces more inclusive. This could potentially make parts of the public realm and the external environment more welcoming and increase people's likelihood to use active travel modes. This, in turn, could help to	1 2b 2c 3		+2

	reduce inequalities in physical and mental health and wellbeing, as the policy will help to bring forward safe, welcoming, secure and inclusive places and spaces. Provision of street trees, green walls, green roofs and wetlands is likely to improve air quality, hence having a positive impact on children and older people, as well as low-income communities who are most impacted by poor air quality. The UGF, in combination with other policies related to open space and public realm, encourages public space to be more open, accessible and inclusive, and so is likely to mean more opportunities for Londoners of every background to connect, helping to advance equality of opportunity and fostering good relations – particularly for older Londoners who are more likely to experience social isolation. This is therefore likely to be beneficial for groups who are at higher risk of social isolation, such as older Londoners. Children and teenage girls are more likely to have restrictions placed on their mobility freedoms due to the perceived dangers of venturing too far to access public space. Creating spaces within the built environment that are proximate, green, welcoming and well maintained is likely to have a positive impact for these groups by facilitating independent mobility and supporting their right to safety, both actual and perceived, in these spaces. It may also provide more opportunities for children to engage in social interaction and informal play, away from home and school, in green spaces that provide access to nature. This may be particularly beneficial for			+2 +2

	children in London, where 70 per cent of visits to the natural environment by children under 16 take place in urban green spaces. Negative: In many developments in dense urban areas, there may be limited opportunities to provide significant new areas of accessible green space at ground level. If UGF targets are met primarily through the provision of inaccessible green roofs and walls, there may be limited opportunities for people to use this greening type for amenity and recreation.		Mitigation: The guidance requires that applicants refer to urban greening priorities in the borough before designing the landscape in their developments. The UGF works alongside other policies, such as those related to design and those requiring the provision of amenity or play space; and encourages design choices that provide multiple benefits, such as the provision of play or other recreational space on roofs where appropriate.	0
Disability (consider different types of physical, learning or mental disabilities)	Positive: Increasing Londoners' access to green spaces within developments, and in the proximate public realm, could potentially make the external environment more welcoming for people of all abilities. The guidance is likely to have a positive impact for groups such as disabled people, as well as groups at greater risk of poor mental health including disabled adults. People in these groups may be more likely to experience physical and other potential barriers to accessing parks due to distance, so incorporating more high-quality greening in developments may enable inclusion for people living in or using those spaces and buildings. Encouraging public space within the built environment, close to where people live, to be more open, accessible and inclusive is likely to provide	1 2a 2b 2c 3		+2

	more opportunities for Londoners of every background to connect, helping to advance equality of opportunity and fostering good relations. This is therefore likely to be beneficial for groups who are at higher risk of social isolation, such as disabled Londoners. Negative: Vegetation planted in these greening areas may trigger or exacerbate symptoms for people with particular disabilities, such as people with asthma or other respiratory conditions. Providing urban greening elements within the development at different levels or terraces may provide challenges for accessibility.		Mitigation: The impacts of planting to meet UGF requirements are not likely to be significant in the context of the existing vegetation within London, but there may be some particular localised risks. The guidance recommends that landscape professionals are involved in the design of greening measures from early in the development process. Their skills will allow the designs to select appropriate species and avoid those known to trigger allergies. Mitigation: The UGF works in combination with other policies in the Plan, such as those requiring the provision of amenity space in housing developments. Consideration of accessibility to the space must be dealt with at the planning application stages to create green environments that are accessible.	+2 0 0

Gender reassignment	Positive: Increasing Londoners' access to green spaces within developments, and in the proximate public realm, could potentially make the external environment more welcoming for all. The guidance is likely to have a positive impact for gender reassignment groups who may be freely able to use the spaces, as they are part of either the development or the built environment. People in these groups may be more likely to experience physical and other potential barriers to accessing parks due to distance, cost or isolation, hence greening of the built environment may enable inclusion. Negative: Spaces integrated within developments or public realm may not provide an opportunity for these groups to enjoy green environment in spaces that feel safe.	1 2a 2b 2c 3	Mitigation: This is a larger issue that cannot be solely addressed through UGF guidance, but the UGF methodology provides opportunities for schemes to provide a variety of spaces and greening types. Designs should address the needs of different groups to allow people to interact with nature in an environment that feels safe.	+1 0

Marriage and civil partnership	None identified.			
Pregnancy and maternity	Positive: The UGF, in combination with other policies related to open space and public realm, encourages public space to be more open, accessible and inclusive. It is likely to provide more opportunities for Londoners to connect; and open up opportunities for social interaction in spaces that feel safe to all users during the day time and night. This is likely to have a positive impact on people who share the protected characteristic of pregnancy and maternity. Encouraging activities such as scootering in play streets, or the gathering of people with similar characteristics in green streets or pocket parks, or green spaces within development, could have a positive impact on pregnant people and parents with children who are too old for pushchairs, as it may help to enhance their mobility. Negative: Balancing the consideration of greening the built environment for wider public use could have a negative impact on pregnant women or mothers with young children. For example, some spaces may be problematic for people who may have more difficulty navigating barriers and obstructions within the public realm, such as pregnant people or parents with young children in pushchairs.	1 2a 2c	Mitigation: The guidance allows for site-specific approaches to urban greening and the consideration of various users. Consultation with community stakeholders would be essential during the application stage to tailor the design of these spaces. Mitigation: The needs assessment required through the guidance will enable planners and designers to identify availability of spaces for the	+1 +1 0 0

			users within the area and design appropriately, with due regard to consultation with community stakeholders to address deficiencies and ensure spaces are accessible to people with the protected characteristics of pregnancy and maternity.	
Race or ethnicity (consider refugees, asylum seekers, migrants, Gypsies and Travellers)	Positive: Evidence finds that places with a higher proportion of Black, Asian and Minority Ethnic residents also tend to have fewer green spaces. Areas that have almost no Black, Asian and Minority Ethnic residents have six times as many parks as those where more than 40 per cent of the population are Black, Asian and Minority Ethnic. The UGF guidance seeks to create opportunities for greening the built environment, thus enabling open space access in deficient areas. This guidance is likely to have a positive impact for Black, Asian and Minority Ethnic Londoners, as it aims to provide more opportunity for access to green spaces across London. During the pandemic, people from an ethnic minority background were more likely to report greater benefits to their mental health from green space and open space during lockdown than people identifying as White (S&SR Environment and Spaces Group, 2020). Hence, this guidance is expected to create better physical and mental health environments for Black, Asian and Minority Ethnic people.	1 2b 2c 3		+2 +1
Religion or belief	None identified.			

Sex	Positive: Girls and young women often report feeling unsafe when outside. Greening and spaces created as part of meeting UGF requirements will be integrated into the development and will generally be at a smaller scale than traditional open spaces. This can provide opportunities to interact with nature in a way that feels safe and may be of particular benefit to girls and young women.	1 2b 2c 3		 +1
Sexual orientation	Positive: There are a range of ways to deliver greening to meet UGF targets in combination with other related policy objectives; choices should be influenced by local needs and priorities. Creating green spaces within developments that feel safe to all users during the day and night is likely to be beneficial for certain protected characteristic groups who are more likely to experience fear of crime, such as LGBTQ+ people.	1 2b 2c 3		 +1
People on low incomes	Positive: More than half of London is deficient in access to public open space, and people on low incomes are much more likely to live in these locations. Urban greening provided to meet the UGF such as roof gardens, pocket parks or green streets will help to mitigate these inequalities where there are no opportunities to provide large new areas of public open space. Londoners on low incomes are also one of the groups of people disproportionately affected by	2a 2b		 +2 +1

	climate change, because they are those least able to respond quickly and recover from it. Furthermore, the impacts of climate change are also unevenly distributed across the city, with neighbourhoods with income and health inequalities at greater risk. Greening provided to meet the UGF will increase local climate resilience, and boroughs are encouraged to set targets that reflect local issues, which could include targets to prioritise greening that reduces climate vulnerability. Application of the UGF may increase opportunities for greening the built environment, creating low-traffic neighbourhoods and informal play streets for children. This may have a positive impact for people on low incomes who are less likely to have access to private outdoor space. If people feel safe and welcome to spend time in a space, and encourage their children to play and be active in a space, this may have a positive impact on the health of children from low-income families. At year five, children living in the most deprived areas are 15 percentage points more likely to be overweight or obese than children in the least deprived areas. Negative: If the greening measures installed as part of meeting UGF targets are not properly maintained, the quality may degrade over time and may render the spaces not useable.		Mitigation: Successful communal or public spaces need resources for stewardship, maintenance, community involvement, security or enlivenment. Planning authorities' Green Infrastructure Strategies that identify opportunities for urban greening must also identify funds for	

			maintenance, or require planning obligations and section 106 agreements to keep greening elements in good quality. The design of greening measures should consider opportunities to address inequalities in the quality and quantity of green space in different neighbourhoods, so that the benefits of proximity to urban nature are felt by every community.	

Overview of equality impacts

Using your findings from the table above, summarise the impacts for each group in the table below using the scoring listed above.

	Age	Disability	Gender reassignment	Marriage and civil partnership	Pregnancy and maternity	Race	Religion and belief	Sex	Sexual orientation	People on low incomes
UGF guidance	+2	+2	+1	No anticipated impacts	+1	+2	No anticipated impacts	+1	+1	+1

Consider whether to break the guidance down and introduce further rows in order to make clear different equality impacts for different aspects of the guidance.

Recommendation

Based your assessment, please indicate which course of action you are recommending to decision makers.

Outcome number	Description	Mark with an X (more than one box can apply)
Outcome one	**No major change to the guidance is required:** this EqIA has not identified any potential for discrimination or negative impact, and all opportunities to advance equality have been taken.	X
Outcome two	**Adjustments to the guidance are required** to remove barriers identified by the EqIA or better advance equality.	
Outcome three	**Justify and continue with the guidance** despite having identified some potential for negative impacts or missed opportunities to advance equality.	
Outcome four	**Stop, rethink or abandon** when the EqIA shows actual or potential unlawful discrimination	

Monitoring

Monitoring will take place through the London Plan Annual Monitoring Report and wider monitoring of the Mayor's other strategies, as well as part of reviewing the London Plan.

Appendix A: Evidence Reference and Content

London Plan IIA (including EqIA) and Addendums

Evidence

Age

Out of Bounds: Equity in Access to Urban Nature, Groundwork, May 2021

Habits formed in childhood often have consequences for adult engagement with nature. A study of the benefits of green spaces for wellbeing in Sheffield found that the presence or absence of positive childhood memories associated with green spaces had a significant influence on their use throughout adulthood (Improving Wellbeing through Urban Nature, 2019).

Girls and young women often report feeling unsafe when spending time in public spaces such as parks and green spaces. A survey conducted by Girlguiding found that 41 per cent of girls aged 11 to 16 feel unsafe when they go outside, rising to 49 per cent of young women aged 17 to 21. In the survey, 22 per cent of girls aged 11 to 16 said that they are often stared at and receive unwanted attention when they are outside, increasing to 41 per cent of young women aged 17 to 21. All these measures were higher for girls and young women who identify as disabled or LGBQ (Girlguiding, 2020).

A separate survey found that 60 per cent of children were found to have spent less time outdoors since the start of the COVID-19 pandemic, but this varied across the population: 71 per cent of children from ethnic minority backgrounds reported spending less time outside, compared to 57 per cent of White children. It also found that 73 per cent of children from households with annual income below £17,000 spent less time outdoors, compared with 57 per cent from households with an annual income above this level (Natural England, 2020b).

Equality, diversity and inclusion evidence base for London, GLA Intelligence, June 2019

The GLA has found that, as of 2019, over a fifth of London's population are under 16 (1.9m). Over two-thirds, or 6.2m, are working-age (between 16 and 64), and less than one in eight are 65 or over (1.1m). Despite the latter being the smallest age group in London's population, the number of Londoners aged 65 or over is projected to increase by 86 per cent between 2019 and 2050, faster than younger age groups. Therefore, there will be a growing need for accessible and inclusive infrastructure that supports an ageing population.

Outside of the home, the nature of London's built environment can support, or form barriers to, participating in city life. This is particularly relevant to older people and those with children in pushchairs, who face barriers in accessing many services and buildings because of how buildings, spaces and places are designed and managed.

Children in London are less likely than children in other parts of England to make visits to the natural environment: in London, 62 per cent make at least one visit a week and 15 per cent never visit, while these figures are 70 per cent and 12 per cent respectively at

an England level. Data at a national level also reveals that some groups of children are less likely to engage with the natural environment. This includes Black, Asian and Minority Ethnic children – 56 per cent of whom make at least one visit a week compared to 74 per cent of children who are not from Black, Asian or Minority Ethnic backgrounds. There is also a decrease among children whose parents are from a lower social class, with a gap in weekly visits of 12 percentage points between the highest social grade (77 per cent) and the lowest (65 per cent).

Monitor of Engagement with the Natural Environment (MENE) Report, 2018-2019 review, Natural England, 2020

Nationally there has been a decline in the amount of time that children spend outside in recent years. Research shows the amount of time they do spend outside depends largely on the frequency with which their parents take them on visits to green space.

The MENE data has shown that, for the majority of children, their main experience of the natural environment is close to home, in green spaces within towns and cities. This is particularly the case for children from Black, Asian and ethnic minority backgrounds and those living in less affluent areas who may be less able to travel further afield. In London 70 per cent of visits outside by children overall are to urban green spaces.

Making London Child Friendly – Designing Places and Streets for Children and Young People, GLA, January 2020

Children, particularly teenagers, are a complicated presence in public space – often stereotyped as proponents of antisocial behaviour, whilst also imposed with mobility restrictions due to perceived dangers of public space. In London, young people's perceptions of safety in their area decrease with age. A study conducted by ZCD Architects found knife crime, strangers, and adults' negative perceptions to be the most prominent factors for reluctance to go outside. Built-environment interventions and policy should therefore aim to fulfil a child's right to safety, both actual and perceived.

Girls, particularly teenage girls, are more likely to have restrictions placed on their mobility freedoms. Research in different housing typologies in London found that boys are more likely to play out, visit a park and ride a bicycle alone, and have fewer concerns over safety in public spaces. Design, planning and policy must understand these social and gendered issues when considering how built environment interventions will be experienced and impact on opportunities for mobility.

Designing for independent mobility needs to create safe and accessible routes between the home and the school, as well as connections to the other places that children and young people use. 'Third places' are places used away from home and school, such as parks, recreation facilities, libraries and other forms of social infrastructure. These informal urban greening spaces, where important social interactions occur, hold a key functional and symbolic role.

Disability

Equality, diversity and inclusion evidence base for London, GLA Intelligence, June 2019

There are 1.3m disabled adults in London, defined according to the Equality Act 2010 as having a physical or mental impairment that has a 'substantial' and 'long-term' negative effect on their ability to do normal daily activities. Disability is closely related to age: 13

per cent of the working-age population are disabled, versus 28 per cent of people aged 65 or over.

Disabled and older Londoners face barriers in accessing London's built environment, as a result of street design and clutter, a lack of dedicated parking, and a few accessible and specialised public toilets. Older Londoners are at risk of social isolation due to physical barriers preventing them from experiencing the city in full.

Out of Bounds: Equity in Access to Urban Nature, Groundwork, May 2021

Evidence suggests that urban nature is less accessible to disabled people. A survey found that 47 per cent of adults with a long-term illness or condition had made a visit in the last 14 days, compared to 62 per cent without a long-term illness or condition. Of those living with a long-term illness or condition, 29 per cent said they had not visited a natural space in the previous month, compared to 18 per cent of those without a long-term illness or condition (Natural England, 2020d).

Urban green and blue spaces can be disabling environments for people with impairments. Studies of the experiences of people with a mobility impairment found that the interviewees placed a high value on physical closeness to nature; and that a lack of accessibility could lead to negative experiences of exclusion from green spaces. The structural constraints to spending time in natural spaces identified included lack of information about accessibility and physical constraints in terms of paths, obstacles, parking and toilets (Corazon et al, 2019). Disabled people who use bikes as a mobility aid report being excluded from green and blue spaces where cycling is prohibited, and feeling uncomfortable and 'othered' by the attention their mobility aids attract (Inckle, 2019). Different impairments affect disabled people's access to natural spaces differently. The Sensing Nature project developed a guide to designing green spaces with sight impairment in mind. Barriers to accessing urban nature identified included a lack of talking/tactile maps, natural seasonal changes, public transport links, and having to walk along busy roads or cross large open areas which can be hard to navigate

Gender reassignment

Is England Fairer? The state of equality and human rights 2016, Equality and Human Rights Commission, 1 March 2016

A 2006 study of transgender and transsexual people's experiences of inequality and discrimination found that 73 per cent of surveyed transgender respondents had experienced harassment in public spaces (including comments; threatening behaviour; and physical, verbal or sexual abuse) with 10 per cent having been victims of threatening behaviour in public spaces (Whittle et al, 2007).

In 2015, the Home Office reported a 9 per cent rise in police recorded transgender hate crimes between 2013-14 and 2014-15. For almost all police forces (41 out of 44), transgender identity hate crime was the least commonly recorded hate crime (Home Office, 2015a).

Is Britain Fairer? Key facts and findings on transgender people, Equality and Human Rights Commission, 2015

A UK survey of transgender people carried out in 2012 indicated that respondents avoid some activities due to a fear of being harassed or identified as transgender. Many said

they avoided public toilets and gyms, and around a quarter said they avoided clothing shops, leisure facilities, clubs or social groups, public transport, travelling abroad, restaurants or bars. Those with 'clear and constant gender identities' as men avoided many more situations than those with 'clear and constant identities' as women. This was particularly the case with public toilets, with 77 per cent of transgender men avoiding them.

LGBT in Britain – Trans report, Stonewall, 2018

Trans people experience high levels of discrimination and poor treatment because of their gender identity, and often change their behaviour because of it. This ranges from verbal abuse and intimidation in the street and other public spaces such as toilets, to being discriminated against in shops, cafés, restaurants, bars and nightclubs. Trans people also face discrimination when using public services, and when looking for a house to rent or buy.

More than two in five trans people (44 per cent) avoid certain streets altogether because they don't feel safe there as an LGBT person

Marriage or civil partnership

No evidence was found that is relevant to the UGF.

Pregnancy and maternity

Equality, diversity and inclusion evidence base for London, GLA Intelligence, June 2019

Outside of the home, the nature of London's built environment can support, or form barriers to, participating in city life. This is particularly relevant to those with pushchairs, who face barriers in accessing many services and buildings because of how buildings, spaces and places are designed and managed.

Race

Equality, diversity and inclusion evidence base for London, GLA Intelligence, June 2019

GLA projections estimate that, as of 2019, 57 per cent of Londoners have a White British, White Irish or other White ethnicity, with the remaining 43 per cent having a Black, Asian or minority ethnicity.

Availability of green space is lower in more deprived areas and areas with a higher proportion of Black, Asian and Minority Ethnic residents, with children in London less likely to visit the natural environment than children elsewhere in England.

Office for National Statistics, 2020

In England, Black people are nearly four times as likely as White people to have no access to outdoor space at home. Even comparing people of similar age, social grade

and living situation, those of Black ethnicity are 2.4 times less likely than those of White ethnicity to have a private garden.

The survey also found that 21 per cent of households in London lack access to a private or shared garden which is the highest rate of any region in England. Across England, Black, Asian or Minority Ethnic people are less likely to have access to a garden than White people.

Out of Bounds: Equity in Access to Urban Nature, Groundwork, May 2021

Almost 40 per cent of people from ethnic minority backgrounds live in the areas that are most deprived of green space, compared to 14 per cent of White people (Friends of the Earth, 2020). People from ethnic minority backgrounds are less likely to live within five minutes' walk from a green space than people who identify as White (39 per cent compared to 58 per cent); less likely to report good walking routes where they live (38 per cent compared to 52 per cent); and less likely to report a variety of different green spaces within walking distance of where they live (46 per cent compared to 58 per cent) (the Ramblers, 2020).

Experiences of harassment or abuse can also prevent people from ethnic minority backgrounds from choosing to spend time in green or blue space. The perception that these spaces are dominated by White people and the experience of racism in these spaces can have an impact for several generations, as people take their lead from their parents' use of such spaces, or lack thereof (Collier, 2019). The presence of racist graffiti, or experiences of racist abuse, can be major barriers to the use of urban green space for ethnic minority groups (Seaman et al, 2010).

The way that urban natural spaces are designed can also reinforce barriers to use for people from ethnic minority groups. A study on the Queen Elizabeth Olympic Park in London found significant differences between the spatial practices and preferences of local people along ethnic lines (Snaith, 2015).

During the pandemic, people from an ethnic minority background were more likely to report greater benefits to their mental health from green space and open space during lockdown than people identifying as White (S&SR Environment and Spaces Group, 2020).

Religion or belief

No evidence was found that is relevant to the UGF.

Sex

Out of Bounds: Equity in Access to Urban Nature, Groundwork, May 2021

Girls and young women often report feeling unsafe when spending time in public spaces such as parks and green spaces. A survey conducted by Girlguiding found that 41 per cent of girls aged 11 to 16 feel unsafe when they go outside, rising to 49 per cent of young women aged 17 to 21. In the survey, 22 per cent of girls aged 11 to 16 said that they are often stared at and receive unwanted attention when they are outside,

increasing to 41 per cent of young women aged 17 to 21. All these measures were higher for girls and young women who identify as disabled or LGBQ (Girlguiding, 2020).

Sexual orientation

Out of Bounds: Equity in Access to Urban Nature, Groundwork, May 2021

Girls and young women often report feeling unsafe when spending time in public spaces such as parks and green spaces. A survey conducted by Girlguiding found that 41 per cent of girls aged 11 to 16 feel unsafe when they go outside, rising to 49 per cent of young women aged 17 to 21. In the survey, 22 per cent of girls aged 11 to 16 said that they are often stared at and receive unwanted attention when they are outside, increasing to 41 per cent of young women aged 17 to 21. All these measures were higher for girls and young women who identify as disabled or LGBQ (Girlguiding, 2020).

People on low incomes

Out of Bounds: Equity in Access to Urban Nature, Groundwork, May 2021

People from low-income households are also less likely to have good access to green space. People on low incomes are less likely to live within a five-minute walk of a green space (46 per cent of those with an annual household income under £15,000 compared to 70 per cent of people with an annual household income over £35,000), less likely to live somewhere where the streets are green (27 per cent compared to 53 per cent), and less likely to report good walking routes where they live (42 per cent compared to 59 per cent) (the Ramblers, 2020). Research in Sheffield found that urban deprivation was more likely to affect people's contact with nature for wellbeing than ethnicity; parks, neighbourhoods, roadsides and through-routes in deprived areas were more often described as having rubbish and not being looked after, which put some people off walking, cycling and visiting green spaces near where they live (Improving Wellbeing through Urban Nature, 2019).

In a separate survey, 74 per cent of people from the highest socio-economic groups reported visiting natural spaces at least once a week compared to 53 per cent of people from the lowest socio-economic groups (Natural England, 2019).

Equality, diversity and inclusion evidence base for London, GLA Intelligence, June 2019

Availability of green space is lower in more deprived areas and areas with a higher proportion of Black, Asian and Minority Ethnic residents. Children in London are less likely to visit the natural environment than children elsewhere in England.

Climate risk mapping, GLA and Bloomberg Associates, 2020

Londoners on low incomes are also one of the groups disproportionately affected by climate change, because they are those least able to respond quickly and recover from it. Furthermore, the impacts of climate change are unevenly distributed across the city: neighbourhoods with income and health inequalities are at greater risk

Gaps in evidence

None identified

Appendix B: Engagement summary

Summary of protected groups engaged and engagement record

Engagement events during the development of the guidance were aimed at relevant stakeholders involved in implementing the policy, including borough officers and decision-makers, developers, and landscape architects. During the consultation period, three online virtual seminars were held: an introductory session explaining the UGF, which was open to all; and two more technical sessions aimed at developers and local planning authorities. Four responses were received in relation to equality impacts: from the London Wildlife Trust and three individuals. Respondents raised the need to add greening at ground level in relation to age, and the need for green spaces to be accessible to people who use mobility devices in relation to disability. Respondents also raised the need for green spaces that are safe for women at night. For further detail see the UGF consultation report.

GLA Planning

Urban Greening Factor London Plan Guidance

Consultation summary report

January 2023

Copyright

Greater London Authority

January 2023

For more information about this document, please contact:

The London Plan Team, GLA Planning

Greater London Authority

City Hall

Kamal Chunchie Way

London E16 1ZE

www.london.gov.uk

Tel 020 7983 4000

Email planningsupport@london.gov.uk

Other formats and languages / Alternative accessible formats

For a large print, Braille, disc, sign language video or audio-tape version of this document, please contact us using the details above.

You will need to supply your name, your postal address and state the format and title of the publication you require.

If you would like a summary of this document in your language, please phone the number or contact us at the address above.

https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/london-plan-guidance

Table of contents

1. Introduction 4
2. Who took part? 4
3. Consultation feedback and GLA response 5
3.1 Overall approach 5
3.2. Calculating the UGF 6
3.3. Development of borough targets 10
3.4. Further comments 12
4. Equality impacts 14
5. Next steps and monitoring 15
Appendix 1 Summary of engagement 16

1. Introduction

On 30 September 2021, the Greater London Authority (GLA) launched a consultation on the Mayor's draft Urban Greening Factor (UGF) London Plan Guidance (LPG). The consultation closed on 20 December 2021. Three online seminars were held during the consultation, attended by 78 people.

The consultation received 49 written responses, which are summarised in this document. The Mayor would like to thank everyone who took part for engaging with the guidance.

2. Who took part?

Through the consultation period there were 78 attendees to virtual events; 3,384 views of a dedicated webpage page on the GLA's consultation platform; and 49 consultation responses (35 submitted through the online platform, and 14 sent directly via email). Detailed participant data is only available for those that responded to the consultation via the online platform, and represents a small sample of those engaged.

Respondents were asked what type of organisation they represent or whether they were responding as an individual; 23 respondents answered this question.

Respondent type	**Number**	**Percentage**
Individual	6	26%
Business	4	18%
Campaign group	4	18%
Community group	1	4%
Government body or agency	1	4%
Local authority outside London	0	0%
London borough	6	26%
Professional body	1	4%
Total	**23**	

Respondents were also asked equality monitoring information in order to assess how representative survey respondents were, compared to the demographics of Londoners. The number of responses received on those questions was limited and therefore the relevant analysis has not been included in this consultation summary report.

Other engagement

Other engagement was undertaken prior to the formal consultation, including:

- workshops with London boroughs
- workshops with landscape architects and other industry professionals.

Equality monitoring information was not collected for these engagements.

3. Consultation feedback and GLA response

As part of the engagement on the draft guidance, respondents to the formal consultation survey were asked to submit responses to specific questions, which are summarised here. Where numbers of responses are reported, these are responses received through the formal consultation survey; however, comments received by email were also considered, and are included in the analysis for the relevant questions.

This section also includes responses through the **other engagement** channels noted above. However, the key issues that arose from these were also raised in response to the formal consultation survey, and have been included in the analysis of responses.

3.1 Overall approach

Q1: To what extent do you agree or disagree with the following sentence? 'The guidance is clear about how to apply the Urban Greening factor (UGF) to development proposals.'

Thirty-five respondents answered this question. Of these, 77 per cent agreed that the guidance was clear about how to apply the UGF to development proposals; and 12 per cent either somewhat or strongly disagreed.

Response	Number	Percentage
Strongly agree	12	34%
Somewhat agree	15	43%

Neither agree or disagree	4	11%
Somewhat disagree	2	6%
Strongly disagree	2	6%
Total	**35**	

Q2: To what extent do you agree or disagree with the following sentence? 'The guidance is clear about how boroughs should set local UGF targets.'

Thirty-four respondents answered this question. Of these, 58 per cent agreed that the guidance was clear on how to set local UGF targets and 24 per cent disagreed.

Response	Number	Percentage
Strongly agree	7	20%
Somewhat agree	13	38%
Neither agree or disagree	6	18%
Somewhat disagree	5	15%
Strongly disagree	3	9%
Total	**34**	

3.2. Calculating the UGF

Q3: The guidance sets out how different greening types ('surface-cover types') are measured, weighted and scored in Table 3.1 and in more detail in Appendix Table A1.1. To what extent do you agree or disagree with the following sentence? 'The guidance on categorising and scoring surface-cover types is clear and easy to use.'

Thirty-four respondents answered this question. Of these, 67 per cent agreed that the surface-cover types were clear and easy to use and 18 per cent disagreed.

Response	Number	Percentage
Strongly agree	11	32%
Somewhat agree	12	35%

Neither agree or disagree	5	15%
Somewhat disagree	4	12%
Strongly disagree	2	6%
Total	**34**	

Q4: Please tell us if you think there are additional surface-cover types that you think should be included in Table A1.1.

Twenty-two respondents answered this question, and suggested the following:

- The guidance should be clear how rivers, streams, canals and other water bodies are scored.
- The guidance should clarify how blue roofs, brown roofs and scrub are scored.
- 'Green roof' should be replaced by 'living/biodiverse roof'.
- The guidance should disincentivise impermeable surfaces and be clearer on how specific types of paving are scored.
- The UGF should ensure non-native and invasive species are avoided.
- Some specific circumstances and types of greening should have a score of zero (e.g. standard trees in above-ground pots or containers and artificial grass).
- Minimum specifications should be given for soil quality and depth.
- The scores for different types of hedges should be clarified or amended.
- Green walls and green roofs can be expensive to maintain.

GLA response

Some of the comments suggested **amendments to the scores for existing greening measures** set out in Table 8.2 of the London Plan. This table sets out broad categories for surface-cover types that remain appropriate. The guidance cannot make amendments to the overall categories and scores in the London Plan. Some respondents suggested adding **additional layers of detail** or sub-categories to the surface-cover scoring table. While we acknowledge that further layers of detail could make the UGF scores more precise, the UGF is intended to be a flexible tool that is straightforward to use for applicants and planners. Making the surface-cover scoring more complex is likely to make the UGF tool more difficult to implement.

Amendments to the scoring based on **biodiversity value** were proposed by some respondents. While a key aim of the UGF is to deliver gains for biodiversity, this is not the sole function of the policy, which recognises the wider multifunctional role of green infrastructure – such as in supporting sustainable drainage. Changes were also requested to the scoring to promote the retention of **veteran trees**. The UGF works in combination with other London Plan policies such as G6 – Biodiversity and access to nature, and G7 – Trees and woodlands, which set out specific policy requirements on these topics.

There were a number of suggestions relating to **hedges** in terms of measurement and scoring. It is considered that it would be overly complex to include sub-categories of hedges as part of this guidance, so no amendments have been made. There were also comments relating to the use of **invasive species**. The UGF is a flexible tool that does not incorporate information on species selection. Proposals should follow existing legal requirements, local policies and best practice relating to the planting of invasive species. To make clear how **bodies of water** should be scored, Table A1.1 has been amended to clarify that this should include rivers, canals and streams. **Scrub** has also been included in the table. **Artificial grass** has been included to confirm that this should receive a zero score. Additional text has been added to table A1.1 to clarify that **brown roofs** should be scored according to substrate depth as per green roofs.

In circumstances where trees and other planting are included above **basements and underground structures**, the guidance has been amended to clarify that where this is at ground level, the relevant UGF score should be given for each type of planting (i.e. each corresponding surface type in the UGF table), rather than an overall green roof score.

Q5: The guidance sets out how to submit and assess UGF scores for a development site as part of a planning application. To what extent do you agree or disagree that 'the information applicants are required to submit on the UGF will allow applicants and planners to accurately assess and verify UGF scores'?

Thirty-four respondents answered this question. Of these, 58 per cent agreed that the information required would allow applicants and planners to accurately assess and verify UGF scores, and 18 per cent disagreed.

Response	Number	Percentage
Strongly agree	10	29%
Somewhat agree	10	29%
Neither agree or disagree	8	24%
Somewhat disagree	4	12%

Strongly disagree	2	6%
Total	**34**	

Q6: The guidance sets out how to submit and assess UGF scores for a development site as part of a planning application. Please tell us if you have any comments on the UGF assessment and verification process.

Twenty-nine respondents answered this question, and suggested the following:

- Further detail on the verification of UGF scores is required.
- A more detailed calculation table should be provided to identify and verify each individual area of planting.
- More guidance should be given on how to weigh up greening choices against other policy aims and constraints.
- Further clarity is needed on how the UGF is calculated for phased developments.
- The guidance should explain how adopted roads and other land not under control of the applicant within a site area should be accounted for in calculations.
- Clarity is needed on how the maturity of planting is captured in the calculations.
- Further information on whether greening measures must always be within the red line of a site is required.

GLA response

The guidance has been amended to include additional detail on **verifying information** submitted as part of a planning application.

It is not considered appropriate to make the **reporting of scores for areas of planting more complex**, as this level of detail will be disproportionate for most applications. However, the guidance has been updated to note that the local planning authority may request further detailed information, where necessary to clarify or verify proposed greening measures, e.g in the case of **large or more complex masterplans**.

The guidance has been amended to clarify how **roads and other similar land within the red line boundary** should be factored into calculations.

For **phased developments**, the guidance has been amended to provide further flexibility to achieve optimum greening across the site as a whole.

Further clarity on how the UGF scores for green measures account for the **maturity of planting** has been added to the guidance.

The intention of the UGF is for greening measures to be delivered as an integrated part of development and so should be delivered on site. However, there may be limited circumstances where some **off-site provision** is acceptable. The guidance has been amended to make clear that it is for boroughs to determine if this approach is appropriate, while being clear that this should be the exception and robustly justified.

3.3. Development of borough targets

Q7: The guidance sets out how to define a green infrastructure baseline and identify greening priorities in a borough. Please tell us if you have any comments on establishing a green infrastructure baseline and identifying borough priorities.

Twenty-seven respondents answered this question, and suggested the following:

- The relationship between the UGF, Green Infrastructure Strategies and forthcoming Local Nature Recovery Strategies (LNRS) and other related borough plans such as tree strategies be made clearer.
- Boroughs do not have sufficient resource and expertise to develop and enforce local UGF targets.
- Further guidance is needed on the use of offset payments and links to other sources of funding.
- The UGF should include mechanisms for recording biodiversity gain, contributions to canopy cover and more detail on soil quality.
- The guidance does not take into account the specific circumstances of boroughs which may constrain the amount of green infrastructure that can be delivered.

GLA response

The guidance has been updated to include further text on how the **UGF relates to green infrastructure strategies and LNRS**, and how it can be used by boroughs as **part of a suite of tools to promote nature recovery and enhance biodiversity**. References have been added to additional plans, strategies and data sources that may be useful in setting local UGF targets

It is recognised that **resources** for green infrastructure will vary from borough to borough. The London Plan provides a target that can be applied directly to major development schemes where a borough has not developed a local target. It has been made clearer in the guidance that boroughs can determine whether it is appropriate to **continue to apply the London Plan targets** or to pursue a more

specifically tailored local target. We will continue to offer support to boroughs through the guidance itself, and through training and workshop sessions for borough officers.

While some responses suggested adding further detail (e.g. in relation to biodiversity, canopy cover and soil quality), the UGF is intended as a simple tool to improve the quality and quantity of green infrastructure; and works **alongside other policy** measures (e.g. Policy G6 – biodiversity and access to nature) which have more specific aims. Introducing additional detailed elements would make the UGF disproportionately more complex to implement, compared with the additional benefits added detail would give.

Q8: The guidance sets out different approaches for boroughs to consider when setting a local UGF target. Please tell us if you have any comments on setting borough UGF targets, or if there are other options that should be included.

Twenty-two respondents answered this question, and suggested the following:

- The UGF should take account of existing green space provision and its access and capacity issues.
- There should be clarification on how often the UGF policy will be reviewed and how planning reform proposals will impact the UGF.
- Boroughs should only be able to set higher UGF scores than those set out in the London Plan; and conversely, boroughs should only be able to set standards lower than those in the London Plan.
- The GLA should provide further guidance about a threshold for applying the UGF to smaller-scale developments.
- Boroughs with different UGF targets will create complexity for developers working across different boroughs, and they should not set their own standards.
- There should be further detail on the methodology used to derive the London Plan targets.
- The guidance is too brief on methodology for setting targets for different locations.

GLA response

The **UGF sits alongside other London Plan policies** and guidance that must also be considered in setting local targets in Local Plans, and in applying the UGF to development proposals. It is not considered necessary to extend the scope of the UGF, as related matters raised by respondents are covered by other policies and guidance such as Policy G1 – Green Infrastructure; forthcoming guidance on Green Infrastructure Strategies; and Policy G6 – Biodiversity and access to nature.

The targets set in the London Plan are considered to be broadly achievable across London. There may be specific circumstances for some areas where a higher or lower target is appropriate. Boroughs will be expected to use **relevant evidence to support local targets** as part of the normal Local Plan development and Examination process.

London Plan Policy G5 sets out how the UGF should be applied to major developments. Boroughs are encouraged to explore how the principles of the UGF can be applied to **other scales of development**. Some additional examples have been added to this section and reference to the **evidence base for the London Plan targets** has been included. It will be for individual boroughs to determine appropriate thresholds if they wish to apply the UGF to developments below the major threshold set out in the London Plan.

While it is appreciated that varying targets across different boroughs will be less simple for developers operating in different boroughs to apply, this is considered necessary to allow for **local circumstances and opportunities** to be captured and realised. The guidance is clear that the **methodology and the weighting scores for greening measures** should be in line with those set out in the London Plan and guidance to ensure consistency in the overall approach across London.

Any review of the current targets and weighting scores set in Policy G5 would be through a future revision to, or replacement of, the London Plan. At this stage, the outcomes of any proposed **reforms to the planning system** are unknown; however, it is likely that the UGF will remain a useful tool for delivering greening that is compatible with design codes and with nationally mandated Biodiversity Net Gain.

3.4. Further comments

Q9: Do you have any further comments to make on the guidance?

Thirty-eight respondents answered this question, and suggested the following:

- It would be better to use the UGF alongside the proposed Green Infrastructure Strategies guidance.
- Monitoring information on how the UGF has already been applied to schemes would be useful to understand the impact it is having, and how this information will be shared and used to inform revisions to future policy (including the London Development Database, use of section 106 for monitoring).
- There is a weakness in enforcement and maintenance of green infrastructure features (including how long features should be retained, use of section 106).
- The UGF is seen as tick-box exercise.
- The guidance should be clearer on the relationship between the UGF and Biodiversity Net Gain.

- There should be further guidance on how to balance greening needs with other policy aims and requirements.
- TfL should improve on delivering greening.
- There is uncertainty on how local UGF targets will be scrutinised.
- Targets should be more ambitious to tackle the climate emergency.
- The targets should be applied flexibly, as target scores are unachievable on some sites.
- The greening measures encouraged by the UGF do not provide ground-level open space and play facilities
- Offsite payments where UGF targets have not been achieved should not be acceptable.
- The guidance is helpful in setting out how to apply the UGF to planning proposals, and how councils should approach a green infrastructure baseline, but further guidance should be provided on setting local scores.
- There are concerns about deliverability due to borough resources and capacity.
- The UGF scoring should reflect heritage concerns and historic landscapes.
- Clarity is needed on how building regulations and guidance relate to fire impact on greening measures.

GLA response

A significant number of comments in this section of the questionnaire related to topics covered in other questions. These comments have been included in the analysis for the relevant topic in this document.

A number of the points raised in this part of the consultation relate to matters that are beyond the scope of the UGF guidance; many are more relevant to **green infrastructure strategies**. Relevant comments raised in response to this consultation will be used to inform future guidance planned on preparing these strategies.

Further comments were made that requested **changes to elements of policy G5 in the London Plan**. Guidance cannot make changes to the London Plan policy, which would only happen through an update or replacement to the London Plan. Proposed local targets will be reviewed by the Mayor as part of the **Local Plan general conformity** with the London Plan process.

The guidance has been amended to emphasise that **greening should be a fundamental element of site design** and considered early in the design process. A

new section has been added to the guidance on providing advice in circumstances where **UGF targets are not met on-site**.

Minor amendments have been made to clarify how UGF scores are recorded in the **Planning Datahub.**

Additional text has been included in the guidance on securing greening measures, and on ongoing **maintenance and monitoring.**

The relationship between **UGF and Biodiversity Net Gain requirements** has been clarified.

4. Equality impacts

As part of the consultation, a draft Equality Impact Assessment (EqIA) was undertaken, which did not identify any negative equality impacts on protected groups. Questions relating to the EqIA were included in the UGF survey and were consulted on as part of the overall consultation on the draft guidance.

Four responses were received to the EqIA survey on the draft UGF guidance.

Respondents raised the following potential equality impacts arising in relation to the draft guidance:

- All urban greening elements added must be accessible for people with disabilities and those who use mobility devices.
- There is a need for all greening to create environments where women and girls feel safe when outside.

A further EqIA of the changes made to the guidance resulting from the consultation did not identify any negative equality impacts on protected groups.

GLA response

Both potential equality impacts raised in response to the draft UGF guidance had been identified during the draft EqIA, and mitigating actions were set out to maximise the positive overall impact of greening on these protected groups. The UGF works alongside other policies, such as those requiring the provision of accessible amenity space, to ensure that the planning process contributes to providing green environments that are accessible.

Creating green spaces within developments that are welcoming and well maintained is likely to have a positive impact for women and girls, supporting their right to safety, both actual and perceived, in these spaces. Greening of spaces as part of meeting UGF requirements will be integrated into the development and will generally be at a smaller scale than traditional open spaces. This can provide opportunities to interact

with nature in a way that feels safe, and may be of particular benefit to women and girls.

5. Next steps and monitoring

We would like to thank everyone who took the time to contribute to the development of the UGF guidance and engage with the consultation. All views that were shared with us have been considered in the development of the final UGF guidance document, and we have aimed to summarise the key points raised in this report.

For the latest information on the UGF guidance and the UGF calculator please visit the GLA's UGF webpage. For any queries please email: urbangreeningfactorlpg@london.gov.uk.

Appendix 1 Summary of engagement

Informal and/or early engagement

Activity type	Participation
Workshops, seminars and training sessions	Industry professionals including borough officers and councillors; the Landscape Institute; the Chartered Institute of Ecology and Environmental Management; Urban Design London; Public Practice; University College London

Formal engagement

Date	Activity type	Participation	Representation
30 September 2021 – 20 December 2021	Consultation survey and written responses	All	49 responses
19 October 2021	Webinar – Introducing the UGF	All	12 attendees
4 November 2021	Webinar – Applying the UGF to development proposals	All	26 attendees
16 November 2021	Webinar – Applying the UGF for local planning authorities	London boroughs	40 attendees

MAYOR OF LONDON

London Plan Guidance

Air Quality Neutral

December 2022

Copyright

Greater London Authority
December 2022
Published by:
Greater London Authority
City Hall
Kamal Chunchie Way
London
E16 1ZE

www.london.gov.uk
Enquiries 020 7983 4000
Email planningsupport@london.gov.uk

Other formats

If you require this document in a more accessible format, please get in touch via our online form and tell us which format you need.

Table of contents

1 About this document 2
1.1 What is 'Air Quality Neutral'? 2
2 Applying Air Quality Neutral 3
2.1 Air Quality Neutral Assessments for planning applications 3
2.2 Excluded development 3
2.3 Minor developments 4
2.4 Phased developments 5
2.5 Material and non-material amendments 5
2.6 Securing compliance for building emissions 6
2.7 Securing compliance for transport emissions 6
3 Building Emissions Benchmark (BEB) 7
3.1 Calculating the BEB 7
3.2 Calculating the predicted building emissions 10
3.3 Generators 12
3.4 Connecting to existing heat networks 13
4 Transport Emissions Benchmark (TEB) 14
4.1 Calculating the TEB 14
4.2 Calculating the predicted trip rate 16
5 Mitigation and offsetting 17
5.1 Mitigation measures 17
5.2 Offsetting payments 17
5.3 Calculation of transport emissions for offsetting purposes 19
6 Reporting 20
Appendix 1: Example Air Quality Neutral Calculations 21
A1.1 Example 1 21
A1.2 Example 2 26
A1.3 Example 3 28
A1.4 Example 4 30
Appendix 2: Application to a Phased Energy Strategy 32

London Plan Policy	Policy SI1 Improving Air Quality Part B(2)(a) and Part E
Local Plan making	N/A
Planning Application type and how the London Plan Guidance will be applied	All development, unless specifically excluded (see section 2.2), is required to submit an Air Quality Neutral Assessment (AQN Assessment) demonstrating how the Air Quality Neutral benchmarks in this guidance will be met. There is a simplified assessment for minor development (see section 2.3).
Who is it for	Planning authorities, architects, transport planners and engineers, energy consultants and engineers, and applicants. For use in designing and specifying building and transport in design and in quantifying and assessing air quality performance against relevant Air Quality Neutral benchmarks.

1 About this document

1.1 What is ‘Air Quality Neutral’?

1.1.1 An Air Quality Neutral development is one that meets, or improves upon, the Air Quality Neutral benchmarks set out in this document. These benchmarks set out the maximum allowable emissions of NO_x and particulate matter based on the size and use class of the proposed development. These benchmarks are based on research and evidence carried out by building and transport consultants and are designed to prevent the degradation of air quality from the combined emissions of individual developments.

2 Applying Air Quality Neutral

2.1 Air Quality Neutral Assessments for planning applications

2.1.1 There are two sets of benchmarks, which cover the two main sources of air pollution from new developments:

- Building Emissions Benchmark (BEB) – emissions from equipment used to supply heat and energy to the buildings
- Transport Emissions Benchmark (TEB) – emissions from private vehicles travelling to and from the development.

2.1.2 A development must meet both benchmarks separately in order to be Air Quality Neutral. If one or both benchmarks are not met, appropriate mitigation or offsetting will be required (see section 5). As the benchmarks are based on evidence and are designed to be challenging but achievable, mitigation or offsetting provisions should be the exception.

2.1.3 Calculations against the benchmarks should inform the design process. However, the final AQN Assessment itself can only be prepared once the energy and transport strategies for a development are suitably finalised or, where these strategies are not part of the application, development details are finalised for planning submission.

2.2 Excluded development

2.2.1 Developments, including major developments, that do not include additional emissions sources are assumed to be Air Quality Neutral and to meet the Air Quality Neutral benchmarks. As such, there is no need to do an AQN Assessment. This would include, for example, developments that have no additional motor vehicle parking, do not lead to an increase in motor vehicle movements[1], and do not include new combustion plant such as gas-fired boilers. It is good practice to advise the local planning authority that the development meets this criterion when submitting a planning application, for example in a cover letter or the planning statement.

2.2.2 Developments that are subject to Environmental Permits, issued either by the Environment Agency or the Borough Council, are subject to the Air Quality Neutral benchmarks for all emission sources within the development not controlled by the Environmental Permit.

[1] Taxi, delivery and servicing vehicle trips, as well as heavy vehicle trips produced by the operation of an industrial or commercial premises are not covered by Air Quality Neutral. Please see paragraph 4.1.5 for further information.

2.2.3 Where a Medium Combustion Plant (MCP) or Specified Generator (SG) is proposed as part of the energy strategy for a development and is subject to emissions limits through an Environmental Permit, the developer must nevertheless set out how the development as a whole, including the permitted appliance, complies with the BEB.

2.2.4 In cases where the permit Emissions Limits imply the potential for annual emissions higher than the BEB, achieving compliance with the BEB may require: the use of low or zero-emission technology to reduce the total emissions from the energy centre(s); limiting the hours of use of the appliance; installing an appliance that emits less than the Emission Limit stated in the standard rules permit; or other techniques to reduce emissions.

2.3 Minor developments

2.3.1 All developments in London are expected to meet the Air Quality Neutral benchmarks. However, for minor developments including:

- dwellings, where the number of dwellings to be constructed is between one and nine inclusive
- a site area of less than 0.5 hectares for the construction of dwellings where the number of dwellings to be constructed is not given in the application
- a development where the floor space to be built is less than 1,000 m^2 floor area or where the site area is less than one hectare (non-dwellings).

a full air quality assessment (which would normally incorporate the AQN Assessment) will likely not be required (unless required by the local planning authority as set out in 2.3.3 below). A simplified procedure for these developments is set out in sections 3.1.1, 3.1.2, 4.1.1 and 4.1.2.

2.3.2 Details of emission sources included in the development proposals should be set out in the planning application and may be secured by planning condition or legal agreement. For example, minimum emissions standards for combustion plant or maximum permitted car parking spaces.

2.3.3 In certain cases, such as developments in an Air Quality Focus Area, the local planning authority may require a full air quality assessment for a minor development due to the nature or location of the proposed scheme. In these cases, the full procedure for the Building Emissions Benchmark (BEB) and the full procedure for the Transport Emissions Benchmark (TEB) should be used in the AQN Assessment.

2.4 Phased developments

2.4.1 Where developments are phased, the entire development should be Air Quality Neutral; and should be Air Quality Neutral at the completion of each phase. This will normally require assessment against the benchmarks at a number of separate points, e.g. at outline application stage to demonstrate that the completed development should be Air Quality Neutral, with further assessments carried out as part of the application for each phase based on detailed proposals, and/or interim/final energy and transport assessments. Refer to Appendix 2 for further guidance.

2.4.2 If new car parking is brought forward in phases, the development should be tested against the TEB at the outline application stage, and again as detailed plans for each phase are brought forward.

2.4.3 If car parking is built as part of a single phase of the development, but intended to serve multiple phases, the applicant should show either of the following:

- parking spaces will only be released for use as the phase they are intended to serve is completed
- the phase in which the parking is delivered meets the TEB when considered in isolation.

2.5 Material and non-material amendments

2.5.1 Changes to the design, energy or transport strategy after planning permission has been granted may affect whether a development is Air Quality Neutral. A reassessment of compliance with this guidance will normally be required for amendments to a planning consent that affect any of the following:

- energy strategy
- the proposed type or number of power and/or heating appliances
- transport strategy and/or travel plan
- number of parking spaces
- parking management plan
- number of residential units
- floorspace assigned to non-residential use classes.

2.5.2 The reassessment should be proportionate and limited to the extent of the amendments. For example, a change to the number of car parking spaces would not need a reassessment of building emissions. A change that would unambiguously reduce emissions, such as replacing planned domestic boilers with heat pumps, or removing car parking could be allowed on that basis without reassessment at the discretion of the local planning authority.

2.6 Securing compliance for building emissions

2.6.1 Details of the specific appliance that will be installed in the completed development are not always known at the planning application stage. Even when a specific appliance is assumed at planning application stage, for many reasons, this may be different to the appliance that is installed in the completed development. It is therefore strongly advised that a condition requiring approval of the appliance details is used to ensure that the installed system is as good as, or better than, that used in the AQN Assessment. For larger and more complex systems, abatement equipment may be needed to minimise emissions. Where abatement is required, the installation, use and maintenance of the abatement equipment should similarly be required by condition.

2.7 Securing compliance for transport emissions

2.7.1 For most developments, the key driver of transport emissions is the provision of car parking spaces. Therefore, a condition or legal agreement restricting car parking spaces to a specified maximum (not exceeding the amount assumed for the Air Quality Neutral calculation) should be applied.

2.7.2 Where the development proposal requires specific local measures to reduce trip generation or trip length, these should be secured by condition or legal agreement.

3 Building Emissions Benchmark (BEB)

3.1 Calculating the BEB

Simplified procedure for the Building Emissions Benchmark (BEB)

3.1.1 Where minor developments (as set out within 2.3.1) include new heating systems, they can be assumed to meet the BEB in any of the following instances:

- the new heating system is a heat pump or other zero-emission heat source
- the new heating system includes one or more individual gas boilers with NOx emissions rated at less than 40 mg/kWh
- the development is connecting to an existing heat network.

3.1.2 Where a development meets the criteria above, the rest of section 3 does not apply. If the criteria above is not met, a full AQN Assessment against the BEB is required, as per the procedure below.

Full procedure for the Building Emissions Benchmark (BEB)

3.1.3 The BEB is defined in grams (g) of nitrogen oxides (NO_x) emitted per square metre (m^2) of floorspace over a year (gNO_x/m^2/annum). The floorspace is defined as the gross internal area (GIA). The benchmark NO_x emission rates are defined for different land uses and are dependent on the characteristics of the energy strategy adopted for the development. These are based on achievable emission rates for the type of technology used. The benchmark NO_x emission rates are defined in Table 3.1.

3.1.4 Most non-combustion heat sources such as electric panel heaters and heat pumps (including air source and ground source heat pumps) are assumed to have zero heat-related NO_x emissions. However, for the avoidance of doubt, checks should be made with the manufacturer or an air quality consultant when non-standard or innovative technologies are used.

3.1.5 Solid and liquid biomass/non-biomass fired appliances also emit fine particulate matter in addition to NO_x. The benchmark emission rate for particulate matter is zero. Any development that uses solid or liquid fuels for primary or secondary heating will therefore not be Air Quality Neutral and will require mitigation or offsetting (see section 5).

Table 3.1 BEB NO_x emission rates (gNO_x/m^2/annum)

Land use[2]	Individual gas boilers	Gas boiler network	CHP + gas boiler network	Heat pumps + gas boiler network
Residential (including student accommodation and large-scale purpose-built shared living development)	3.5	5.7	7.8	5.7
Retail	0.53	0.97	4.31	0.97
Restaurants and bars	1.76	3.23	14.34	3.23
Offices	1.43	2.62	11.68	2.62
Industrial	1.07	1.95	8.73	1.95
Storage and distribution	0.55	1.01	4.50	1.01
Hotels	9.47	15.42	38.16	15.42
Care homes and hospitals	9.15	14.90	36.86	14.90

[2] Where the use class/land use type is not specified in a development proposal or is not listed in Table 3.1 it is up to the discretion of the local planning authority to decide and use the most relevant land use from the table (given the information submitted at the planning application stage). Where use class E has been specified without further detail, the emission rates for retail should be used as the default worst-case scenario.

Land use[2]	Individual gas boilers	Gas boiler network	CHP + gas boiler network	Heat pumps + gas boiler network
Schools, nurseries, doctors' surgeries, other non-residential institutions	0.90	1.66	7.39	1.66
Assembly and leisure	2.62	4.84	21.53	4.84

3.1.6 The GIA for each land use is multiplied by the corresponding benchmark NO_x emission rate in Table 3.1 to calculate the benchmark NO_x emissions for each land use in the development proposal. These are then added together to calculate the BEB for the development, as shown in Table 3.2. Further example calculations are provided in Appendix 1.

Table 3.2 Example BEB calculation

Land Use	GIA (m^2)	Benchmark NO_x emission rate ($gNO_x/m^2/year$)	Total benchmark emissions ($gNO_x/year$)
Example land use 1	A	B	A x B = C
Example land use 2	D	E	D x E = F
BEB for the development			**C + F**

3.1.7 The GIA for each land use in the calculation should match the submitted planning documents, including the planning application form. Any deviation should be clearly indicated and justified.

3.2 Calculating the predicted building emissions

3.2.1 To calculate the total predicted building emissions, the typical energy use for each different combustion source proposed within the development, and an emission rate for each combustion source, will need to be known. The predicted annual energy use for each emission source can be found in the energy assessment[3] for the development proposal (in a table similar to Table 3.3 below).

3.2.2 Where there is no energy assessment available, information about the proposed emission sources, their predicted annual energy use and emission rates should be provided elsewhere in the planning application documents or appended to the AQN Assessment.

3.2.3 The NO_x emissions rate for grid electricity use reported in Table 3.3 should be assumed to be zero. This is because any NO_x emissions associated with electricity generation at power stations will be dealt with in local permissions for those facilities.

Table 3.3 Energy-use reporting template for predicted building emissions

Energy source	Total predicted residential energy use (MWh/year)	Total predicted non-residential energy use (MWh/year)
Grid electricity		
Gas boilers (communal/individual)		
Gas CHP		
Connection to existing district heat network		
Other gas use (e.g. cookers)		

[3] Further information can be found in the GLA's Energy Assessment Guidance.

3.2.4 The emission rate for each emission source will be included in the manufacturer's specification for the specific appliance. Where combined heat and power (CHP) is used, this may include selective catalytic reduction (SCR) or other technology to manage emissions. The size (output) of the CHP is the main factor that determines whether SCR is used, but there is no absolute cut-off point.

3.2.5 The predicted emissions for each source are:

Energy use for each source x emission rate of each source

3.2.6 These are then added together to give total predicted building emissions for the development (see Table 3.4). The development is considered Air Quality Neutral in terms of building emissions if the total predicted building emissions are less than the BEB.

Table 3.4 Example total predicted building emissions calculation

	Energy use (MWh/year)	NO_x emission rate (mg/kWh)	Total predicted NOx building emissions (mg/annum)
Emission source 1	A	B	A x B = C
Emission source 2	D	E	D x E = F
Total predicted building emissions for the development			**C + F**

3.2.7 Where it has not been possible to identify a specific unit that will be installed, the generic emission rates in Table 3.5 can be used in the assessment on the condition that the final units will not produce emissions that exceed those in the table.

Table 3.5 Generic emission rates for combustion technologies

Technology type	NO_x emission rate
Gas boiler	40 mg/kWh
Gas engine with SCR	25 mg/Nm^3 [4]
Heat pump	0

3.3 Generators

3.3.1 Backup plants installed for emergency and life safety power supply, such as diesel generators, may be excluded from the calculation of predicted building emissions. Normally, it is expected that the use of these generators for anything other than an emergency and operational testing (less than 50 hours per year) would be prevented by planning conditions. The NO_x and particulate matter emissions of generators used for purposes other than an emergency, such as selling power into the national grid, must be included in Air Quality Neutral calculations. Where appropriate, local authorities could seek a more restrictive condition if that would be consistent with the safe operation of the generator.

3.3.2 It should be noted that some generators are likely to be affected by MCP or SG limits and must comply with them. It is expected that smaller generators would also comply with these emissions limits.

Generators for temporary applications

3.3.3 Emissions from generators that form part of planning applications for temporary structures should be included in the calculation of building emissions, as per the provisions in paragraph 3.3.1.

3.3.4 Emissions from generators which form part of planning applications for temporary events,[5] where generators are required for the event operation, do not need to be included.[6]

[4] Emission standard quoted at reference conditions 273K, 101.3kPa, 5 per cent O_2, dry gas.
[5] Gov.uk, Temporary Events Notice (England and Wales)
[6] Legislation.gov.uk, The Town and Country Planning (General Permitted Development) (England) Order 2015

3.4 Connecting to existing heat networks

3.4.1 New developments in Heat Network Priority Areas are expected to prioritise connection to existing district heat networks or be future-proofed for connection to a proposed network. Connection to a district heat network does not mean the development is automatically considered to be Air Quality Neutral and an assessment will still need to be carried out. The assessment needed will depend on the type of heat network. Where the heat is genuinely from an existing source that would otherwise be wasted, the emission rate is zero.

3.4.2 However, if a heat network's capacity is being expanded to serve a new development, that additional capacity must come from low- and zero-carbon heat sources and will still need to be calculated in the normal way.

3.4.3 As a minimum, it is expected that the introduction of additional sources to an existing heat network will support the implementation of the network's decarbonisation strategy.

3.4.4 Where the heat is from a purpose-built communal heat network, the situation is more complex. In either of the following scenarios, any additional emissions from the heat network should be accounted for in the AQN Assessment:

- the development proposal results in the heat network operating at higher loads or longer hours
- a new plant is installed in the energy centre(s) to meet the increased demand of the development proposal.

3.4.5 The emission rate and energy use used should be based on the actual equipment installed in the energy centre. Technical details should be obtained from the energy and sustainability consultant, energy centre operator or other relevant specialist.

3.4.6 Where a new energy centre is being built to supply a communal heat network, the full emissions from the energy centre attributable to the development should be included in the building emissions calculation.

4 Transport Emissions Benchmark (TEB)

4.1 Calculating the TEB

Simplified procedure for the Transport Emissions Benchmark (TEB)

4.1.1 Where minor developments (as set out in 2.3.1) include new parking, they can be assumed to meet the TEB if the maximum parking standards set out in policies T6 and T6.1 to T6.5 of the London Plan are not exceeded. For land uses where maximum parking standards are not defined, a full calculation against the benchmarks should be carried out.

4.1.2 Where a development meets the criteria above, the rest of section 4 does not apply. If the criteria above is not met, a full AQN Assessment is required against the TEB, as per the procedure below. Where major developments meet the definition of 'car-free',[7] they can be assumed to meet the TEB and the rest of section 4 does not apply. This assumption does not exempt a development from considering building emissions (see section 3).

Full procedure for the Transport Emissions Benchmark (TEB)

4.1.3 The TEB is defined as the predicted number of single trips per m^2 of floorspace (GIA) over a year (trips/m^2/year) for non-residential use, or the anticipated number of single trips per dwelling (trips/dwelling/year) for residential use. An outward and return journey to and from a location therefore counts as two trips. Trip rate benchmarks are based on data from the Trip Rate Information Computer System (TRICS)[8] and are defined for different land uses and different areas of London. These are set out in Table 4.1.

4.1.4 The TEB only estimates car or light van trips undertaken directly by the development occupiers (residents, businesses etc and their staff / customers). The TEB does not include 'operational' trips generated by the developments. Deliveries and servicing, taxis or heavy vehicle movements from non-occupiers' assessment of these trips, for example, should be captured in the wider air quality impact assessment where one is required and should therefore be excluded from TEB calculations. If intended commercial uses are specified in a development proposal that falls under use class E, the corresponding benchmark from Table 4.1 should be used for this assessment.

[7] Developments that are defined as 'car-free' may include provision for disabled persons parking. The standards for disabled persons parking are outlined in the London Plan parking policies (T6 and T6.1 to T6.5) and supporting text.
[8] TRICS provides information based on observed trip rates from developments, and these will be monitored and updated where necessary.

Table 4.1 Benchmark trip rates

Land use[9]	Annual trips per	Trip rate benchmark		
		Central Activities Zone (CAZ)	Inner London (excluding CAZ)	Outer London
Residential (including student accommodation and large-scale purpose-built shared living development)	dwelling	68	114	447
Offices/light industrial	m^2 (GIA)	2	1	16
Retail (superstore)	m^2 (GIA)	39	73	216
Retail (convenience)	m^2 (GIA)	18	139	274
Restaurants/cafés	m^2 (GIA)	64	137	170
Drinking establishments	m^2 (GIA)	0.8	8	N/A
Hot food takeaway	m^2 (GIA)	0	32.4	590
Industrial	m^2 (GIA)	0	5.6	6.5
Storage and distribution	m^2 (GIA)	0	5.5	6.5
Hotels	m^2 (GIA)	1.0	1.4	6.9
Care homes and hospitals	m^2 (GIA)	0	1.1	19.5
Schools, nurseries, doctors' surgeries, other non-residential institutions	m^2 (GIA)	0.1	30.3	44.4
Assembly and leisure	m^2 (GIA)	3.6	10.5	47.2

[9] Where the use class/land use type is not specified in a development proposal or not listed in Table 4.1, it is up to the discretion of the local planning authority to decide and use the most relevant land use from the table (given the information submitted at the planning-application stage). Where use class E has been specified without further detail, the benchmark for office/light industrial should be used as the default worst-case scenario.

4.1.5 Where parts of the development will have no dedicated parking – for example, a residents' gym that is not accessible to the public – these should be excluded from the calculation of the TEB. The number of dwellings (residential) or GIA (non-residential) for each land use is multiplied by the benchmark trip rate to calculate the benchmark trip rates for each land use. These are then added together to calculate the TEB for the development as shown in Table 4.2. Further example calculations are provided in Appendix 1.

Table 4.2 Example TEB calculation

Land use	Annual trips per	Trip rate benchmark	Total benchmark trip rate (trips/year)
Example residential land use 1	'A' dwellings	B	A x B = C
Example non-residential land use 2	'D' m^2	E	D x E = F
TEB for the development			**C + F**

4.2 Calculating the predicted trip rate

4.2.1 A trip rate is usually calculated as part of the transport assessment for the development. This figure should be used in the AQN Assessment. Trip rates from TRICS can be used if they are also used in the transport assessment and multiplied to give an annual, rather than daily, number of predicted generated trips. In some cases, the transport assessment will only include peak hour trips. In these cases, either of the following actions should be taken:

- include additional data setting out the full number of predicted trips based on the same modelling as the transport assessment (as an appendix to the air quality assessment or transport assessment)
- show how daily and annual trip rates have been calculated from the peak hour trips in the transport assessment; this should be done in accordance with best transport assessment practice, as set out by Transport for London.

4.2.2 A breakdown of the predicted trip rate between different land uses is not required, but it may be helpful to do this if the TEB is exceeded. If the total trip rate is less than or equal to the TEB, the development is Air Quality Neutral in terms of transport emissions.

5 Mitigation and offsetting

5.1 Mitigation measures

5.1.1 The Air Quality Neutral benchmarks have been calculated to be achievable and designed to be consistent with the energy and transport policies of the London Plan.

5.1.2 If the assessment shows that the development fails to meet one or both benchmarks, details of the development should be amended to meet the benchmarks as a first step. This could include changes to the energy or transport strategies, or changes to the overall design of the development.

5.1.3 If development is still not able to meet the benchmarks, the next step is to seek agreement with the local planning authority to secure on- or off-site mitigation measures (with on-site measures preferred in accordance with Part E of Policy SI 1). Mitigation measures should exceed the minimum requirements in the London Plan policies. An example might be exceeding minimum requirements for cycle parking or phased removal of car parking.

5.1.4 Mitigation measures should be agreed following these principles:

- Measures should be demonstrably effective and show how they will reduce local emissions or concentrations.
- Measures should relate to the type of excess emissions – for example, measures to reduce building emissions should not be used to compensate for excess transport emissions. Similarly, local NO_x reductions should not be used to compensate for excess particulate matter emissions.
- The measures should be genuinely additional to all the measures already accounted for in the air quality assessment.
- The measures should be in place by the time the development is occupied.
- Implementation of the measures must be robustly secured via planning condition or legal agreement.

5.1.5 Measures may be suggested by the local planning authority or by the applicant, but the local planning authority must determine whether proposed measures are appropriate and adequate to meet the London Plan policy.

5.2 Offsetting payments

5.2.1 If it is not possible to identify or agree appropriate and adequate mitigation measures, it may be possible, at the discretion of the local planning authority, to agree an offsetting payment instead. The offsetting payment is calculated by multiplying the excess emissions above the benchmarks

(tonnes/annum) by the damage costs (£/tonne) over a 30-year period, with a 2 per cent annual uplift, as set out in Table 5.1. An example offsetting payment calculation is also provided in section A1.1 in Appendix 1. The damage cost per tonne of excess emissions should use the most up-to-date version of the Defra-published damage costs for air pollution. Most recently this sets both generic damage costs and specific damage costs for different emission sources. Where these differ, the highest-category damage cost applicable to any part of the development should be used.

Table 5.1 Example offsetting payment calculation

	Benchmark	Total predicted emissions	Excess emissions[10]	Damage cost	Annual offsetting amount
	(tonnes/annum)			(£/tonne)	(£)
Building NO_x emissions	A[11]	B	C = (B-A)	D	E = (C x D)
Building $PM_{2.5}$ emissions	F	G	H = (G-F)	I	J = (H x I)
Transport NO_x emissions	K	L	M = (L-K)	N	O = (M x N)
Transport $PM_{2.5}$ emissions	P	Q	R = (Q-P)	S	T = (R x S)
Total[12]	**{(E + J + O + T) x [(1+0.02)^{30} −1]}/0.02**				

5.2.2 The details of an offsetting payment and when it should be made are subject to agreement between the local planning authority and the developer. However, it would normally be collected via section 106 agreements, expected to be paid in full prior to the occupation of the development and will contribute towards measures to reduce local emissions or concentrations

[10] If the figure is less than 0, it should be entered as zero in the table. It is not permitted to use good performance against one benchmark to offset exceedances of another benchmark.
[11] For the purposes of offsetting, any NO_x emissions from solid/liquid fuels will be assumed to have a benchmark of 0
[12] The simplified formula is {(E + J + O + T) x 40.568079205

5.3 Calculation of transport emissions for offsetting purposes

5.3.1 For simplicity, the transport benchmarks only consider the trip rate generated by the development. However, for offsetting payments, an excess emission rate will need to be calculated. To calculate the excess emissions above the benchmark, both the benchmark and the predicted trip rates will need to be multiplied by a trip length and an emission factor. These are provided in Table 5.2 and Table 5.3. The trip lengths are only provided for a limited number of uses. Local planning authorities will advise which to use for other uses – but in general, this should be the higher of the possible options. An example offsetting calculation is provided in Appendix 1.

Table 5.2 Average distance travelled by car per trip

Land use	Distance (km)		
	CAZ	Inner London	Outer London
Residential	4.2	3.4	11.4
Office	3.0	7.2	10.8
Retail	9.2	5.5	5.4

Table 5.3 Emission factors per vehicle-km

Pollutant	Emission factors (g/veh-km)		
	CAZ	Inner London	Outer London
NO_x	0.48	0.39	0.35
$PM_{2.5}$	0.036	0.032	0.028

6 Reporting

6.1.1 For minor developments (as set out in 2.3.1), use the simplified procedure as set out in paragraphs 3.1.1 and 4.1.1 and include relevant details in a cover letter or in other planning application documents.

6.1.2 For most major developments, the AQN Assessment will form part of the wider air quality assessment. For clarity, the AQN Assessment should be set out in its own chapter or section of the air quality assessment. The minimum requirements for reporting are:

- tables showing the detailed calculation of the BEB and the TEB (sections 3.1 and 4.1)
- tables showing the detailed calculation of the predicted building and transport emissions for the development (sections 3.2 and 4.2)
- a final calculation and statement to demonstrate whether the development as planned is or is not Air Quality Neutral
- if the development does not meet the Air Quality Neutral benchmarks, the mitigation measures to be secured to ensure the development can be considered Air Quality Neutral
- supporting evidence or references to supporting evidence.

6.1.3 For phased developments, separate tables should be prepared for the development as a whole and for any phases where a full detailed design is included in the application.

6.1.4 Supporting evidence – such as GIAs for each land use, number of parking spaces and proposed heating technology – will be taken from other assessments and documents accompanying the application. Therefore, the source of any relevant information should be clearly referenced where appropriate.

6.1.5 The emission factor or trip rate used should be clearly stated. If a specific emission factor for building emissions is used, evidence should be included in or appended to the report. For instance, if a specific make and model of low NO_x boiler is assumed, then the manufacturer's data sheet should be included.

Appendix 1 Example Air Quality Neutral Calculations

A1.1 Example 1

A1.1.1 A mixed-use residential development in inner London for up to 29,022 m^2 of development, comprising:

- 324 residential dwellings up to 28,000 m^2
- retail, up to 120 m^2
- office, up to 110 m^2
- a doctors' surgery, up to 660 m^2
- a community hall, up to 130 m^2
- an energy centre comprising three gas-fired boilers.

Building emissions

A1.1.2 Total NO_x emissions from the development were calculated from the generic emission rate for gas boilers of 40 mg/kWh, and a total annual energy usage of 2,100,000 kWh as provided by the energy and sustainability consultant.

40 mg/kWh x 2,100,000 kWh = 84 kg

A1.1.3 The total benchmarked building NO_x emission is calculated from the land use categories and the emissions benchmarks for a gas boiler network, as shown in Table A1.1.

Table A1.1 Calculation of BEB (Example 1)

Land use	GIA (m^2)	Benchmark emission rate (g/m^2/annum)	Total benchmark emissions (kg)
Residential	28,000	5.7	159.6
Retail	120	0.97	0.12
Office	110	2.62	0.29
Doctors' surgery	660	1.66	1.10

Land use	GIA (m^2)	Benchmark emission rate (g/m^2/annum)	Total benchmark emissions (kg)
Community hall	130	4.84	0.63
Total			**161.7**

A1.1.4 The total building emissions (84 kg) are less than the total BEB (161.7 kg). The development is thus Air Quality Neutral in terms of building emissions.

Transport emissions

A1.1.5 The transport assessment for the development predicted that the development will generate a total of 140,590 car trips per annum, comprising trips relating to each of the following land uses:

- residential: 324 dwellings, up to 75,624 m^2
- retail: 120 m^2
- office: 110 m^2
- doctors' surgery: 660 m^2
- community hall: 130 m^2

A1.1.6 The total benchmark trip rates have been calculated as shown in Table A1.2.

Table A1.2 Calculation of TEB (Example 1)

Land use	GIA (m^2) / No. dwellings	Benchmark trip rate	Total benchmark trip rate
Residential	324 dwellings	114	36,936
Retail	120	139	16,680
Office	110	1	110
Doctors' surgery	660	30.3	19,998

Land use	GIA (m^2) / No. dwellings	Benchmark trip rate	Total benchmark trip rate
Community hall	130	10.5	1,365
Total (TEB)			**75,089**

A1.1.7 The total development trip rate is greater than the TEB. The development is thus not Air Quality Neutral in terms of transport emissions.

Entire development

A1.1.8 While the development was Air Quality Neutral in terms of building emissions, the total trip rate exceeded the TEB. Thus, mitigation of transport-related emissions would be required should no changes to the proposal be made.

Offsetting

A1.1.9 In the event that suitable mitigation cannot be agreed between the applicant and the local planning authority, an offsetting payment would need to be agreed to mitigate the excess transport emissions.

A1.1.10 In order to calculate the relevant offsetting payment, the TEB and total transport trip rates need to be converted into NO_x and $PM_{2.5}$ emissions (see Table A1.3 and Table A1.4).

Table A1.3 Calculation of benchmark emissions (Example 1)

Land use	Benchmark trip rate	Average distance per trip (km)	Emissions (g/veh-km)		Total emissions (kg)	
			NO_x	$PM_{2.5}$	NO_x	$PM_{2.5}$
Residential	36,936	3.4	0.39	0.032	49.0	4.0
Retail	16,680	5.5			35.8	2.9
Office	110	7.2			0.31	0.03

Land use	Benchmark trip rate	Average distance per trip (km)	Emissions (g/veh-km)		Total emissions (kg)	
			NO_x	$PM_{2.5}$	NO_x	$PM_{2.5}$
Doctors' surgery	19,998	7.2			56.2	4.6
Community hall	1,365	5.5			2.9	0.24
Total					**144.2**	**11.8**

Table A1.4 Calculation of development emissions (Example 1)

Land use	Development trip rate	Average distance per trip (km)	Emissions (g/veh-km)		Total emissions (kg)	
			NO_x	$PM_{2.5}$	NO_x	$PM_{2.5}$
Residential	75,624	3.4	0.39	0.032	100.3	8.3
Retail	21,568	5.5			46.3	3.8
Office	1,250	7.2			3.5	0.3
Doctors' surgery	38,698	7.2			108.7	8.9
Community hall	3,450	5.5			7.4	0.6
Total					**266.2**	**21.9**

A1.1.11 The excess emissions are then multiplied by the relevant damage costs and multiplied over 30 years, with a 2 per cent annual uplift, to give the total offsetting payment of £426,716.96 (see Table A1.5).

Table A1.5 Calculation of offsetting payment (Example 1)

	Benchmark	Total predicted emissions	Excess emissions	Damage cost	Annual offsetting amount
	(tonnes/annum)			(£/tonne)	(£)
Building NO_x emissions	0.162	0.084	0	N/A	N/A
Building $PM_{2.5}$ emissions	0	0	0	N/A	N/A
Transport NO_x emissions	0.144	0.266	0.122	52,587	6,415.61
Transport $PM_{2.5}$ emissions	0.012	0.022	0.010	410,293	4,102.93
Total annual offsetting amount	£10,518.54				
Total offsetting amount	**{(£10,518.54) x [(1+0.02)^{30} −1]}/0.02 = £426,716.96**				

A1.2 Example 2

A1.2.1 A mixed-use residential development in outer London for up to 9,271 m^2 of development, comprising:

- 112 residential dwellings, up to 7,688 m^2
- office, up to 1,583 m^2
- heating and hot water to be provided by individual boilers and air source heat pumps.

Building emissions

A1.2.2 Total NO_x emissions from the development were calculated from the generic emission rate for boilers of 40 mg/kWh, and a total annual gas usage of 500,000 kWh as provided by the energy and sustainability consultant.

40 mg/kWh x 500,000 kWh = 20 kg

A1.2.3 The total benchmarked building NO_x emission is calculated from the land use categories and the BEBs for individual gas boilers (as the gas boilers do not form a network with the ASHPs), as shown in Table A1.6.

Table A1.6 Calculation of BEB (Example 2)

Land use	GIA (m^2)	Benchmark emission rate (g/m^2/annum)	Total benchmark emissions (kg)
Residential	7,688	3.5	26.9
Office	1,583	1.43	2.3
Total			**29.2**

A1.2.4 The total building emissions (20 kg) are less than the total BEB (29.2 kg). The development is thus Air Quality Neutral in terms of building emissions.

Transport emissions

A1.2.5 The transport assessment for the development predicted that the development will generate a total of 113,100 car trips per annum, comprising trips relating to each of the following land use classes:

- 112 residential dwellings, up to 7,688 m^2
- office, up to 1,583 m^2

A1.2.6 The TEB has been calculated as shown in Table A1.7.

Table A1.7 Calculation of TEB (Example 2)

Land use	GIA (m^2)/no. dwellings	Benchmark trip rate	Total benchmark trip rate
Residential	112 dwellings	447	50,064
Office	1,583	16	25,328
Total (TEB)			**75,392**

A1.2.7 The total development trip rate is greater than the TEB. The development is thus not Air Quality Neutral in terms of transport emissions.

Entire development

A1.2.8 While the development was Air Quality Neutral in terms of building emissions, the total trip rate exceeded the TEB and thus mitigation of transport-related emissions would be required.

A1.3 Example 3

A1.3.1 A residential development in inner London for 38,753 m^2 of development, comprising:

- 428 residential dwellings, up to 38,478 m^2
- retail, up to 125 m^2
- on-site gym, up to 150 m^2
- heating and hot water to be provided by air source heat pumps with an emergency diesel generator to be tested 12 hours per year.

Building emissions

A1.3.2 The development's heat demand will be entirely met by ASHPs, which have no heat-related NO_x emission, and no BEB is defined. The diesel generator will not be used for any purpose other than for routine testing and maintenance.

A1.3.3 The development is therefore Air Quality Neutral in terms of building emissions.

Transport emissions

A1.3.4 The transport assessment for the development predicted that the development will generate a total of 9,163 car trips per annum, comprising trips relating to each of the following land use classes:

- 428 residential dwellings, up to 38,478 m^2
- retail, up to 125 m^2
- on-site gym, up to 150 m^2.

A1.3.5 The on-site gym is not expected to generate any trips as it is solely for use by residents. The trip rate benchmark calculation should therefore not include trips relating to the gym floorspace.

A1.3.6 The TEB has been calculated as shown in Table A1.8.

Table A1.8 Calculation of TEB (Example 3)

Land use	GIA (m^2)/no. dwellings	Benchmark trip rate	Total benchmark trip rate
Residential	428 dwellings	114	48,792
Retail	125	139	17,375
Total (TEB)			**66,167**

A1.3.7 The total development trip rate is less than the TEB. The development is therefore Air Quality Neutral in terms of transport emissions.

Entire development

A1.3.8 The predicted building and transport emissions are less than the BEB and the TEB. The development is therefore Air Quality Neutral and no further mitigation is required.

A1.4 Example 4

A1.4.1 A mixed-use residential development in inner London, comprising:

- 290 residential dwellings up to 25,000 m^2
- retail, up to 950 m^2
- an energy centre comprising four gas-fired boilers.

Building emissions

A1.4.2 Total NO_x emissions from the development were calculated from the generic emission rate for gas boilers of 40 mg/kWh, and a total annual energy usage of 3,750,000 kWh as provided by the energy and sustainability consultant.

40 mg/kWh x 3,750,000 kWh = 150 kg

A1.4.3 The total benchmarked building NO_x emission is calculated from the land use categories and the BEBs for a gas boiler network, as shown in Table A1.9.

Table A1.9 Calculation of BEB (Example 1)

Land use	GIA (m^2)	Benchmark emission rate (g/m^2/annum)	Total benchmark emissions (kg)
Residential	25,000	5.7	142.5
Retail	950	0.97	0.92
Total			**143.4**

A1.4.4 The total building emissions (150 kg) are greater than the total BEB (143.4 kg). The development is therefore not Air Quality Neutral in terms of building emissions.

Transport emissions

A1.4.5 The development will be 'car-free' and will only provide disabled persons car parking. It can thus be assumed that the development will meet the TEB and is therefore Air Quality Neutral in terms of transport emissions.

Entire development

A1.4.6 While the development was Air Quality Neutral in terms of transport emissions, the total building emissions exceeded the BEB. Thus,

mitigation of building-related emissions would be required should no changes to the proposal be made.

Offsetting

A1.4.7 In the event that suitable mitigation cannot be agreed between the applicant and the local planning authority, an offsetting payment would need to be agreed to mitigate the excess building emissions.

A1.4.8 The excess emissions are multiplied by the relevant damage costs and multiplied over 30 years, with a 2 per cent annual uplift, to give the total offsetting payment of £4,876.28 (see Table A1.10).

Table A1.10 Calculation of offsetting payment (Example 1)

	Benchmark	Total predicted emissions	Excess emissions	Damage cost	Annual offsetting amount
	(tonnes/annum)			(£/tonne)	(£)
Building NO_x emissions	0.143	0.150	0.007	17,171	120.20
Building $PM_{2.5}$ emissions	0	0	0	N/A	N/A
Transport NO_x emissions	N/A	N/A	N/A	N/A	N/A
Transport $PM_{2.5}$ emissions	N/A	N/A	N/A	N/A	N/A
Total annual offsetting amount	£120.20				
Total offsetting amount	**{(£120.20) x [(1+0.02)^{30} −1]}/0.02 = £4,876.28**				

Appendix 2 Application to a Phased Energy Strategy

This appendix provides a worked example of how a large, phased development should be brought forward to ensure the development remains compliant with the Air Quality Neutral benchmarks.

A2.1.1 An applicant is seeking permission for a six-phase development, with Phases 1 and 2 set out as detailed proposals and Phases 3 to 6 in outline. A district heating network is proposed, with the energy centre to be built in Phase 3.

A2.1.2 At the initial application stage, the AQN Assessment should include:

- an assessment of all phases together (both detailed and indicative) to show that the whole scheme, once completed, is capable of meeting the Air Quality Neutral benchmarks
- an assessment of the detailed proposals for Phases 1 and 2 based on the interim energy strategy (that is without the energy centre, as this is delivered in Phase 3).

A2.1.3 If substantial changes are made to Phase 2 (after initial permission is granted) that are likely to change the building emissions, a revised assessment of the new detailed proposals should be made based on the new interim energy strategy.

A2.1.4 When the detailed proposals for Phase 3 are brought forward, including the initial operational phase of the energy centre, the AQN Assessment should include an assessment of Phase 3, and Phases 1 and 2 if connected to the energy centre, as it will operate at the completion of Phase 3. This should show that Phases 1 to 3 are Air Quality Neutral upon connection to the energy centre.

A2.1.5 If the design of the energy centre or the proposed quantum of development has changed since the outline application, the assessment of the full 6-phase development (including indicative plans for the remaining phases) should be reviewed to ensure the final development is still capable of meeting the benchmarks.

A2.1.6 When the detailed proposals for Phases 4 to 6 are brought forward, each phase should be assessed following the principles set out in section 3.4 on connecting to heat networks.

A2.1.7 As well as ensuring that the aims of the policy are delivered, this approach should allow developers sufficient flexibility to evolve the energy strategy over time as technology changes or to address any significant changes in the development proposals.

Equality Impact Assessment (EqIA) for London Plan Guidance

London Plan Guidance:	Air Quality Neutral
Teams involved:	London Plan team and Air Quality team
Date:	20 September 2022

1. Please provide an outline of the guidance, who it is aimed at and any key issues to be aware of.

London Plan Policy SI 1 (Parts B and E) require all development in London to be Air Quality Neutral (AQN), which is defined as developments that do not contribute to air pollution beyond allowable benchmarks. As a result, the guidance sets out the detailed process for calculating the benchmark and the expected emissions rates for developments as well as how to perform the comparison and other technical considerations. The guidance also revises the benchmark emission rates set in the previous Supplementary Planning Guidance which has now been revoked (Sustainable Design and Construction).

The intention of the policy is to manage and minimise regional increases in pollutant emissions from development in London. Accordingly, the guidance sets benchmarked emission rates for nitrogen dioxide (NO_2) and particulate matter, which new developments should not exceed.

The guidance is aimed at developers, designers and air quality specialists.

The guidance, and the policy that underpins it, form part of a wider set of integrated policies and interventions (including policies outside the planning system) to improve London's air quality.

2. Which of the Public Sector Equality Duty aims are relevant to the guidance and the impacts identified?

The Public Sector Equality Duty (PSED) set out at section 149 of the Equality Act 2010 is relevant to the guidance. Listed below are examples of how the guidance seeks to meet the three aims of the PSED:

1. *Eliminate discrimination, harassment and victimisation and other conduct prohibited under the Act;*

   The guidance builds on the London Plan policies, which aim to ensure that residents are not treated differently depending on where they live. All Londoners deserve to live in a place that has safe levels of air quality, and where their quality of life is not impacted by air pollutants. Areas of high deprivation often have the poorest air quality, and this guidance aims to address this imbalance by requiring development, in all parts of London, to comply with the air quality benchmarks.

2. *Advance equality of opportunity between people who share a protected characteristic and those who do* not;

   The guidance aims to minimise the exposure to poor air pollution by requiring development to meet the two sets of benchmarks. These will be applied to all development throughout London, irrespective of location, size and tenure. The Building Emissions Benchmark (BEB) aims to reduce the building emissions while the Transport Emissions Benchmark (TEB) ensures that developments do not allow an unacceptably high amount of car parking spaces, which will in turn lead to increases in emissions. These benchmarks will benefit both those who share a protected characteristic and those who do not, as all will be able to live and work in a less polluted environment.

3. *Foster good relations between people who share a protected characteristic and those who do not.*

   New developments have the potential to increase or maintain poor air quality in an area, and this can disadvantage the existing residents. These may be residents that have lived in the area for a long period of time, and may include those who share a protected characteristic. As a result, this guidance sets out the benchmarks that apply to new development. This aims to promote and foster good relations between existing and new residents, some of whom may share a protected characteristic.

Assessment

List aspects of the guidance that might affect particular groups

Guidance key aspects, chapter headings, theme etc	Particular group that could be affected
Chapter 3: Building emission benchmarks (in particular, discussion on particulate matter benchmarks for building emissions)	Black, Asian and other minority ethnic people Young people and elderly people Pregnant people and maternity Disabled people Low income
Chapter 4: Transport emission benchmarks	Black, Asian and other minority ethnic people Young people and elderly people Pregnant people and maternity Disabled people Low income

* It should be noted that the general policy requirement and principles are already required through the London Plan. This London Plan Guidance is providing further detail on how the policies should be implemented, and therefore further amplifying the effects

Equality impacts, mitigating actions and justification (where applicable)

Group	Potential impact description What positive and negative impacts have been identified (known and potential) for particular groups? Refer to evidence (including engagement). Check the objectives from the IIA and the EqIA guide questions and use these where relevant to structure your answers. Check the EqIA elements from the original IIA and any subsequent assessments.	Relevant PSED aim (1, 2a, b or c, and/or 3)	Actions identified and/or justification For negative impacts, set out mitigating actions to minimise or eliminate negative impacts and any action plan. If negative impacts cannot be mitigated, provide **objective justification**. For positive impacts, consider how these could be maximised.	Assessment of equality impacts Score each impact as either: +2 Strong positive +1 Positive 0 Neutral - 1 Negative - 2 Strong negative Mixed or uncertain
Age (consider particularly children, under-21s and over-65s)	Positive: Evidence suggests that areas with the highest proportion of both younger and older people tend to be those with the lowest average pollution levels and vice versa. Nevertheless, young people and older people are known to be particularly vulnerable to the health impacts of exposure to air pollution. As a result, this guidance will disproportionately benefit those most vulnerable (in particular, both older and younger Londoners) to the health impacts of pollution and is part of the wider policy framework designed to reduce air pollution concentrations across London. In particular, targeted intervention at locations most frequented by younger	2 (a) (b)		+1

	or older people (e.g. schools) could potentially increase the benefits of any air quality policy for these groups. Negative: Elderly people may be more reliant on private vehicles, or less able to shift to active travel modes, and may be impacted by measures to reduce car use. Elderly people are also more likely to experience mobility issues. Introducing a TEB may reduce the number of parking spaces in a development, which lead to less parking spaces for elderly residents. Please also refer to impacts on disability, as elderly people are more likely to be disabled than other age groups.		Mitigation: London Plan policy T3 (transport capacity, connectivity and safeguarding) states that development proposals should support capacity, connectivity and other improvements to the bus network; and ensure it can operate efficiently to, from and within developments, giving priority to buses and supporting infrastructure as needed. As a result, improvements in public transport are likely to mean that elderly residents can use public transport near to where they live.	
Disability (consider different types of physical, learning or mental disabilities)	Positive: People with certain physical disabilities may be more likely to spend time indoors. Depending on the airtightness of a building, pollution from outdoor sources can travel indoors through open windows, for example. The policy puts buildings and TEBs in place to minimise the amount of allowable emissions generated by a development. In doing so, it can have an indirect positive impact on indoor air quality and exposure.	2 (b)		+1

	Negative: People with certain physical disabilities may be more reliant on private vehicles. The transport emission benchmark combines with and amplifies other policies in the London plan which seek to minimise parking levels. As a result, overly restrictive parking policies could disadvantage people who rely on private vehicles to move around.		Mitigation: The transport emission benchmarks allow for developments to have up to the specified maximum number of parking spaces set out in policies T6 and T6.5 of the London Plan. In all cases, these include provision for appropriate numbers of accessible disabled parking bays (including 'car-free' developments).	
Gender reassignment	Positive: No anticipated impacts. Negative: No anticipated impacts.			0
Marriage and civil partnership	Positive: No anticipated impacts. Negative: No anticipated impacts.			0
Pregnancy and maternity	Positive: There is evidence linking increased exposure air pollution with increased risk of miscarriage and stillbirth. There is also growing evidence that certain forms of air pollution can pass through the placenta and impact the health of the unborn child in the uterus. Reductions in exposure to air pollution	2 (a)	Actions to maximise impacts: Risks to unborn children are particularly associated with exposure to fine particulate matter ($PM_{2.5}$). The previous iteration of the policy guidance had particulate emissions benchmarks based on the larger PM_{10} fraction. This guidance resets the benchmark for PM emission from buildings to zero and focusses the TEBs on $PM_{2.5}$. These changes will maximise the impact of this	+1

	would therefore likely have additional benefits for this group. <u>Negative:</u> No anticipated impacts.		policy on $PM_{2.5}$ concentrations in London.	
Race or Ethnicity	<u>Positive:</u> There is little evidence of the susceptibility to the health impacts of air pollution between different ethnic groups. However, there is evidence on the differences in exposure, showing that Black African/Caribbean/British communities are proportionately more likely to live in areas where they are exposed to higher levels of NO_2. Respondents that identified as "Mixed/Multiple" and "Other" ethnic groups also live in areas where they are exposed to higher levels of NO_2. Improvements in air pollution are therefore likely to disproportionately benefit ethnic groups who are over-represented in areas of high pollution. <u>Negative:</u> No anticipated impacts.	2 (a)		+1
Religion or belief	<u>Positive:</u> No anticipated impacts. <u>Negative:</u> No anticipated impacts.			0

Sex	<u>Positive:</u> No anticipated impacts. <u>Negative:</u> No anticipated impacts.			0
Sexual orientation	<u>Positive:</u> No anticipated impacts. <u>Negative:</u> No anticipated impacts.			0
People on low incomes	<u>Positive:</u> The relationship between exposure to air pollution and income is complex. However, people living in the most deprived neighbourhoods are, on average, more likely to be exposed to high levels of air pollution. Improvements in air pollution are likely to disproportionately benefit this group.	2 (a)	<u>Actions to maximise impacts:</u> Independent assessment of the impact of the of the suite of air quality policies in the London Environment Strategy (LES) (of which this policy is a part) found that improvements in air quality will be largest in the currently most polluted areas. In principle different benchmarks could be devised for developments in areas of high deprivation. However, it is not clear that these would accelerate or increase the rate of improvement in air quality in these areas. In practice, tighter benchmarks might act as a deterrent to developments in these areas because: • the benchmarks proposed are already challenging, and tighter standards may not be achievable	+1

	Negative: Tighter BEBs might act as a deterrent to development, which could prevent investment in neighbourhood restoration and regeneration in deprived areas. Tighter BEBs may also increase capital costs for redevelopment, which may get passed onto the end-users or occupiers.		• if they are achievable, it is likely to be at a cost. Mitigation: The proposed AQN benchmarks are designed to be challenging, but achievable. They are likely to be met using technology that is now readily commercially available. Where areas are selected for regeneration or restoration, AQN will manage and minimise regional increases in pollutant emissions from development in London. It will also work alongside other policies found within the London Plan to ensure that development results in the best possible outcome in terms of air quality; and does not reduce benefits that result from the Mayor's or boroughs' activities to improve air quality. It should also be noted that developments in areas of pre-existing high pollution are likely to be subject to wider assessment of the impacts on air pollution beyond the scope of this guidance.	

Overview of equality impacts

Using your findings from the table above, summarise the impacts for each group in the table below using the scoring listed above.

	Age	Disability	Gender reassignment	Marriage and civil partnership	Pregnancy and maternity	Race	Religion and belief	Sex	Sexual Orientation	People on low incomes
Guidance 1	+1	+1	0	0	+1	+1	0	0	0	+1

Consider whether to break the guidance down and introduce further rows in order to make clear different equality impacts for different aspects of the guidance.

Recommendation

Based your assessment, please indicate which course of action you are recommending to decision makers.

Outcome Number	Description	Mark with an X (more than one box can apply)
Outcome One	**No major change to the guidance is required** This EqIA has not identified any potential for discrimination or negative impact, and all opportunities to advance equality have been taken.	X
Outcome Two	**Adjustments to the guidance are required** to remove barriers identified by the EqIA or better advance equality.	
Outcome Three	**Justify and continue with the guidance** despite having identified some potential for negative impacts or missed opportunities to advance equality.	
Outcome Four	**Stop, rethink or abandon** when the EqIA shows actual or potential unlawful discrimination	

Monitoring

Monitoring will take place through the London Plan Annual Monitoring Report and wider monitoring of the Mayor's other strategies as well as part of reviewing the London Plan.

Appendix A: Evidence Reference and Content

London Plan IIA (including EqIA) and Addendums

Evidence

Age

Updated Analysis of Air Pollution in London, Aether, February 2017

The younger and older populations in London are particularly at risk given their greater susceptibility to the health impacts of air pollution. However, the more vulnerable under-19 and over-65 age groups are not disproportionately exposed to high levels of air pollution concentrations.

Air Pollution Exposure in London: Impact of the Environment Strategy, Aether, January 2019

Equality, diversity and inclusion evidence base for London, GLA Intelligence, June 2019

Disability is closely related to age: 13 per cent of the working-age population are disabled, versus 28 per cent of people aged 65 or over.

Disability

Travel in London: Report 12, Transport for London, 2019

In order to achieve our overall active, efficient and sustainable modes aim, it is necessary to support Londoners to remain healthy throughout their lives so they can continue to travel by sustainable modes (as data shows that people with disabilities are less likely to walk, cycle or use public transport).

Healthy Streets for London: Prioritising walking, cycling and public transport to create a healthy city, Transport for London, February 2017

Some Londoners will continue to make essential journeys by car, particularly people with accessibility needs.

Equality, diversity and inclusion evidence base for London, GLA Intelligence, June 2019

Disability is closely related to age: 13 per cent of the working-age population are disabled, versus 28 per cent of people aged 65 or over.

Indoor Air Quality in Schools, GLA, May 2018

Outdoor NO_2 concentrations and the airtightness of the building envelope explained 84 per cent of the NO_2 variation between classrooms, indicating the influence of strong outdoor pollution sources and the importance of the building envelope.

Gender reassignment

N/A

Marriage or civil partnership

N/A

Pregnancy and maternity

Air Quality and Health: Reviewing evidence and planning policy in London
(Still to be published – link to be provided soon)

Race

Air Pollution Exposure in London: Impact of the Environment Strategy: Second Addendum Report: Further Analysis of Ethnicity and Exposure, Aether, April 2019

All ethnic groups benefit as a result of policies in the LES, and ethnic groups currently most affected by poor air quality (non-White groups) benefit the most. Areas where White people are most likely to live on average see an average reduction in NO_2 concentrations of 46 per cent, whereas areas where non-White people are most likely to live see concentrations improve between 48 and 53 per cent.

Religion or belief

N/A

Sex

N/A

Sexual orientation

N/A

People on low incomes

Equality, Diversity and Inclusion Evidence Base for London, GLA Intelligence, June 2019

Areas of greater deprivation tend to see high levels of air pollution. Research conducted on behalf of the GLA assessed where the population exposed to the highest levels of NO_2 concentration lived. This research found that this group tended to be concentrated in the most deprived parts of London. For example, almost 1 in 5 of people exposed to the greatest NO_2 concentrations live in the most deprived areas, despite only 9 per cent of London's population living in those places.

Gaps in Evidence

None identified.

Appendix B: Engagement summary

Summary of protected groups engaged

N/A

Engagement record

Engagement undertaken which is relevant to the EqIA for example with specific community groups, or protected characteristic groupings, or to fill identified evidence gaps.

Event details	Specific groups represented	Key findings
n/a	n/a	n/a

GLA Planning

Air Quality Neutral and Air Quality Positive London Plan Guidance

Consultation summary report

December 2022

Copyright

Greater London Authority
December 2022

For more information about this document, please contact:
The London Plan Team, GLA Planning
Greater London Authority
City Hall
Kamal Chunchie Way
London E16 1ZE
www.london.gov.uk

Tel 020 7983 4000
Email planningsupport@london.gov.uk

Other formats

If you require this document in a more accessible format, please get in touch via our online form and tell us which format you need.

Table of contents

1 Introduction 4
2 Who took part? 4
2.1 Respondent demographics 5
3 Consultation feedback and GLA response 5
3.1 Summary of Air Quality Positive LPG consultation responses 5
3.2 Summary of Air Quality Neutral LPG consultation responses 16
4 Other themes raised during engagement 34
5 Equality impacts 35
6 Next steps and monitoring 36
Appendix 1 Summary of engagement 37

1 Introduction

Between 12 November 2021 and 27 February 2022, the Greater London Authority (GLA) carried out a public consultation on the Mayor's draft Air Quality Neutral (AQN) and Air Quality Positive (AQP) guidance. This consultation summary report summarises the responses received during this consultation. The Mayor would like to thank everyone who took part for engaging with the guidance.

2 Who took part?

Through the consultation period there were 282 attendees to virtual events[1] and 2,929 page views of the consultation webpage. In total, 49 consultation responses were received during the consultation. Of the responses, 32 were received through the Bang the Table surveys and 17 via email. This document provides a summary of all the consultation responses received, including both those received via the surveys and emails. The information around who took part in the consultation is taken from information submitted alongside consultation responses. There is limited data available about event attendees and those who responded via email. Therefore, the data on who took part represents only a small sample of those engaged with and does not reflect the true breadth of engagement. Survey respondents were asked whether they were responding as an individual; and, if not, what type of organisation they represented. The respondent types are broken down in the table below:

Respondent type	**Number**	**Percentage**
Individual	7	14%
Business	8	16%
Campaign group	0	0%
Community group	2	4%
Government body or agency	3	6%
Local authority outside London	0	0%
London borough	23	48%
Professional body	6	12%
Total	**49**	**100%**

[1] See Appendix 1 for summary of the engagement events.

2.1 Respondent demographics

Survey respondents were asked equality monitoring information in order to assess how representative respondents were compared to the demographics of Londoners. However, the number of responses received on those questions was limited; therefore, the relevant analysis has not been included in this consultation summary report.

3 Consultation feedback and GLA response

3.1 Summary of Air Quality Positive LPG consultation responses

As part of the engagement on the draft guidance, respondents were asked to submit responses to specific questions. This section also includes responses through other engagement channels such as emailed responses.

Question 1: The guidance requires Air Quality Positive to be applied at the plan-making stage (to masterplans and development briefs that include large-scale development sites that are likely to be subject to an Environmental Impact Assessment) and at the planning application stage (to masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment). In the planning application context, 'large-scale development' refers to planning applications that are referable to the Mayor under the following categories of the Town and Country Planning (Mayor of London) Order 2008 which are detailed in Appendix 1:

> **Category 1A, Category 1B, Category 2C(1)(a)-(f), Category 2C(2), Category 2C(3), Category 2D**

Do you agree with how the guidance is applied to development in London? Please share any comments you have on the routes to applying Air Quality Positive.

Thirteen responses were received to this question via the online survey. A summary of the responses to this question is detailed below:

- Most respondents agree with the approach.
- **Scope** of the policy could be expanded to include: developments not subject to Environmental Impact Assessments (EIAs); those proposed in Air Quality Focus Areas (AQFAs) and other sensitive locations; all developments; additional categories of the Town and Country Planning (Mayor of London) Order 2008; or developments beyond a specific size or floorspace.

GLA response

The **scope** within which AQP should be applied has been established based on the ability of the policy to make a meaningful and relevant impact to local air quality. It is recognised that strategically important/larger developments offer more potential for innovative designs that can actively contribute to improving air quality within/around the development or masterplan area.

The availability of resources has also been considered when determining the scope of this policy. Proposed developments that are subject to EIAs are more likely to have the funding required for specialist expertise to fulfil the requirements of AQP, since advice from the same sources are likely required during the completion of general air quality assessments.

Whilst the LPG provides guidance on the sites for which AQP is considered most relevant, in certain cases local planning authorities may include requirements in their Local Plans for the policy to apply to additional developments – as long as they are appropriate and adequate to meet the London Plan policy.

Question 2: The guidance sets out criteria for when an Air Quality Positive Statement is required. To what extent do you agree or disagree with these criteria?

Nineteen responses were received to this question through the online survey. The majority of respondents stated they 'somewhat agree', while three disagreed.

Response	Number	Percentage
Strongly agree	3	15.8%
Somewhat agree	12	63.2%
Neither agree nor disagree	1	5.3%
Somewhat disagree	2	10.5%
Strongly disagree	1	5.3%
Total	**19**	**100%**

Question 3: Please share any comments you have on when an Air Quality Positive Statement should be required.

Fourteen responses were received to this question via the online survey. A summary of the responses to this question is detailed below:

- Not enough content/details provided in statement, including around **enforcement**.

- AQP should be a material consideration for the **majority of developments**/all major developments.
- Greater degree of flexibility in the **minimum requirements** of statement needed, depending on the design stage of a proposal – i.e. in the early stages.
- **Definition** of AQP should be clearer – for example, should be percentage improvement over **AQN**.
- AQP should reference **Policy SD4 (Central Activities Zone (CAZ))** of the London Plan and provide guidance on the scale of development that should be considered for application.

GLA response

The LPG suggests the minimum requirements of the AQP Statement, but it is ultimately up to the local planning authority to determine if the details presented in the Statement satisfies the criteria outlined in 4.2.1 of the guidance. And while we recognise the potential for enforcement of the AQP Statement to be resource-intensive, the local planning authority can seek to secure planning conditions and/or **enforcement** of section 106/section 278 agreements to ensure the implementation of measures proposed in the Statement.

The scale of the development and resourcing requirements needed to effectively apply an AQP approach means that application of this policy to the **majority of developments** would be impractical. However, in certain cases, local planning authorities may require additional developments in sensitive sites to take an AQP approach by including this requirement in their Local Plans.

The proposed contents of the AQP Statement have been designed to ensure relevant developments demonstrate that they have been designed to maximise benefits to local air quality, and minimise exposure to air pollution. This policy aims to drive consideration of air quality during early design stages, so reducing the **minimum requirements** at that stage would weaken the overall impact of this policy. It is, however, anticipated that the content of the Statements will vary between schemes and ultimately, the local planning authority must be satisfied that the criteria in 4.2.1 of the guidance have been met. This also means that Statements that deviate significantly from those submitted at earlier stages of the application, or produced during masterplanning, will need to be updated to confirm that air quality conditions will be as good as or better than previously anticipated.

A more concise **definition** and description of the policy has been provided in Paragraph 1.1.1 of the updated LPG. AQP has been developed based on the principles set out in section 9.1.3 of the London Plan and is not intended to be a numerical standard, like the **AQN** policy. This means AQP will draw out project-specific design approaches and measures for each development, driving innovation and design solutions, rather than setting predetermined benchmarks or targets.

Policy SD4 (CAZ) of the London Plan is based on the principle of using an AQP approach, where possible, to address issues related to climate change and the

urban heat island effect in the CAZ. A reference to Policy SD4 (CAZ) has been added to Section 2 of the LPG.

Question 4: The Air Quality Positive Statement will be deemed compliant if it demonstrates how the proposal will maximise benefits to air quality and mitigate exposure to air pollution. This should be outlined in a matrix of adopted measures, under four key themes (better design and reducing exposure; building emissions; transport emissions; and innovation and future-proofing). Do you agree or disagree with these four themes under which the different measures could fall within?

Nineteen responses were received to this question through the online survey. The majority of respondents strongly or somewhat agreed, while three disagreed.

Response	Number	Percentage
Strongly agree	9	47.4%
Somewhat agree	6	31.6%
Neither agree nor disagree	1	5.3%
Somewhat disagree	1	5.3%
Strongly disagree	2	10.5%
Total	**19**	**100%**

Question 5: Please share any comments you have about the requirement for development proposals to complete a matrix of adopted measures. If you feel this could be improved, please specify why and how this could change.

Twelve responses were received to this question via the online survey. A summary of the responses to this question is detailed below:

- Statements/measures likely to be non-**binding**.
- More radical solutions needed; the sample matrix should be expanded to include more **examples** and/or made into a toolkit.
- Ambiguity around when a development is deemed AQP, lack of **minimum requirements**; validation checklist should be required comparing how the development delivers specific improvements beyond **AQN** benchmarks.
- Reference to best practice of siting plant **flues** and criteria to assess emissions from these.
- Potential **unintended consequences** from design measures and **limitations of green infrastructure** should be flagged for those completing the matrix.
- Specific reference to the **Urban Greening Factor LPG** should be made to assist with designing of public and green spaces within development.

- Section on transport measures should include more guidance on **delivery and servicing**, and more emphasis should be placed on the use of **public transportation**.
- **Construction** emissions should be considered – as should **green energy**.
- Additional sections on limitations and **future iterations** should be added to ensure information is not lost and remains consistent and **updated** over different phases of development/proposal.

GLA response

The AQP Statement includes a requirement for developers to indicate how measures will be secured – for example, by **binding** conditions; monitoring plans to ensure future milestones are fulfilled; and establishing timescales for delivery of measures. These will be approved, monitored and enforced by local planning authorities.

AQP is meant to be a holistic policy that encourages creative thinking and innovation. The inclusion of a long list of specific **examples** may result in the use of the LPG as a shopping/tick list, which could hinder its full potential. It is therefore the intention for the GLA to collect examples of best practice and innovation in the coming years; and to share these in order to inspire continued generation of ever-bolder and more effective solutions.

Minimum requirements of the AQP Statement have been provided in section 4.2 of the LPG, and developments are considered to be 'AQP' if they are able to demonstrate to the planning authority that the proposal will maximise benefits to air quality and minimise human exposure to air pollution. AQP does not function in the same way as a quantitative policy like **AQN**; a validation check against a specific and detailed list would likely be difficult and ineffective – for example, comparing emissions generated from transport and buildings against proposed measures to improve dispersion and exposure.

Additional guidance on good design principles, location of air intakes, stacks, and **flues**, etc., lie outside the direct scope of AQP as they may be subject to detailed rules through building regulations, the Clean Air Act requirements and other regimes. However the air-quality professionals engaged with the project should be able to provide advice on these matters; and any development-specific issues can be addressed in the "Better design and reducing exposure" section of an AQP statement.

A paragraph has been added to the LPG to caution against **unintended consequences** of designs that are intended to benefit local air quality or reduce exposure, but can potentially lead to issues of, for example, accessibility or wind tunnels.

In addition to a new link to the **Urban Greening Factor LPG**, the guidance signposts to Using Green Infrastructure to Protect People from Air Pollution, which provides further information on the **limitations of green infrastructure** for urban air quality, Furthermore, a link to TfL's Delivery and Servicing Plan Guidance has now been

embedded into the LPG to help developments optimise **delivery and servicing** activities.

AQP supports and encourages proposals to adopt the 'Healthy Streets Approach' and include detailed consideration of how walking, cycling and **public transport** routes are convenient and attractive to use within the development site.

Emissions from **construction** are addressed directly by a separate London Plan policy (SI 1 D) and are therefore outside the scope of AQP. The GLA has retained The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance (SPG) to reduce pollutants from construction and demolition activities, and is committed to updating this particular piece of guidance in the near future.

The use of **green energy** and the energy hierarchy is covered by the GLA's Energy Planning Guidance and Policy SI 2 of the London Plan.

The text in the LPG reflects the expectation that proposals with approved AQP Statements should be **updated** and resubmitted to reflect changes to the application in terms of addressing AQP measures; and to ensure the benefits and principles originally assumed are not worsened or lost during the different phases of development. However, we recognise that the AQP Statement will vary between different schemes, so there is a level of flexibility offered in terms of how this additional information is captured and presented to the local planning authority for review.

Question 6: To what extent do you agree or disagree with the proposed content and structure of the Air Quality Positive Statement?

Nineteen responses were received to this question through the online survey. The majority of respondents strongly or somewhat agreed, while four disagreed.

Response	Number	Percentage
Strongly agree	4	21%
Somewhat agree	10	53%
Neither agree nor disagree	1	5%
Somewhat disagree	3	16%
Strongly disagree	1	5%
Total	**19**	**100%**

Question 7: Do you have any comments or suggestions for how the required content and structure of the Air Quality Positive Statement and/or matrix could be improved?

Thirteen responses were received to this question via the online survey. A summary of the responses is detailed below:

- Include more detailed requirements for what it means to be AQP – for example, it is not possible to improve dispersion if a development is being built on an **empty site**; well-designed spaces only minimise disbenefits as opposed to maximising benefits.
- Too many uses prioritised for **less polluted areas** to minimise exposure – for example, residential areas versus parks and public spaces.
- Addition of a separate section detailing limitations and **variations** of the Statement.
- LPG could benefit from more examples of **best practice**, quantitative tools, assessment methods (i.e. a hierarchy of measures before offsetting is proposed) and references to expert technical guidance across the four themes.
- Costs of implementation/**cost-benefit analysis** should be included in the matrix.
- Clarity needed for purpose of the '**Assessment and Reporting**' column of the matrix.
- AQP Statements for hybrid**/outline applications** should be secured by condition or notice of intent.
- The Statement should refer to **impact** on inequalities.
- Building emissions should specifically include those produced through **commercial cooking**.
- Statement should include reference to **offsite** emissions control, i.e. permitted sites, and how the policy interacts with the agent of change principle.
- The Statement should be integrated into the air quality report or mitigation chapter of the EIA; all air quality documents should be incorporated together (for example, AQP Statement, AQN Assessment, air quality assessment, EIA) instead of **cross-referenced**.

GLA response

It is true that development on **empty sites** will never improve dispersion, and all new development has options that are better or worse for air quality. However, the aim of this policy is to drive developers to seek the best outcomes possible through good design and layout.

Appropriate placement of both residential areas and shared public spaces in **less polluted areas** within a development can be challenging, but it is not an insurmountable challenge. We would expect the development's team of experts to find an appropriate balance between use versus exposure during the design stages.

The GLA anticipates that AQP will become a minimum standard and **best-practice** approach in planning. Future examples of best practice for innovation, assessment, and other solutions across the four main themes will be collated and shared with interested stakeholders as these become available. However, there is a possibility

that the introduction of a hierarchy of measures could hinder the process of encouraging innovative designs.

A requirement for quantification and **cost-benefit analysis** could potentially lead to a preference for the cheapest measures to be selected for implementation. Furthermore, the quantified benefits of many air quality measures are also poorly understood, so the compliance of the AQP Statement and the proposed matrix of measures would depend heavily on the professional judgement of the planning officer in any case, making these extra calculations superfluous.

A footnote has been added to the matrix template to explain the purpose of the '**Assessment and Reporting**' column and the expected content that should be included in it.

It is expected that **outline planning applications** for large-scale developments subject to an EIA must be accompanied by an AQP Statement that details how measures will be secured in subsequent reserved matters applications. It is also expected that the Statement and its matrix should be kept up to date to reflect the specifics of the application.

Text has been added to the LPG signposting to the updated Air Quality Guide for Public Health Professionals, which contains borough-specific information on air-pollution levels, including around sensitive sites such as schools, hospitals and care homes. With this information, developers will be able to account for a development's **impact** on groups that are disproportionately affected by air pollution.

New sections have now been added to the LPG to encourage opportunities to reduce or eliminate $PM_{2.5}$ emissions from **commercial cooking** and the application of the 'agent of change' principle, where preliminary assessments have identified **offsite** nuisances/issues from nearby developments.

If the contents of the AQP Statement are split across different sections of other reports, it is no longer a statement of its own. However, by suggesting that the Statement can signpost to relevant information contained in other documents, the need to provide duplicated information is reduced or removed. It is also an option to submit the AQP Statement as an appendix to the Environmental Statement. Keeping documents separate, but allowing **cross-referencing** where needed, should mean a less onerous and complicated process for the air-quality professionals to undertake, whilst promoting integration of the AQP approach throughout the development process. It should also be noted that air quality assessments (which follow industry standard guidance and methodology, and are not specific to London), AQP and AQN all function differently and address different facets of air quality in planning.

Question 8: To what extent do you agree or disagree with the minimum requirements for an Air Quality Positive Statement to be judged as compliant?

Nineteen responses were received to this question through the online survey. The majority of respondents somewhat agreed while six disagreed.

Response	Number	Percentage
Strongly agree	2	10.5%
Somewhat agree	9	47.4%
Neither agree nor disagree	2	10.5%
Somewhat disagree	4	21.1%
Strongly disagree	2	10.5%
Total	**19**	**100%**

Question 9: Do you have any further comments to make on the guidance?

Thirteen responses were received to this question from the online survey. A summary of the responses is detailed below:

- The guidance implies non-mandatory self-governance with no backstops/**enforcement**.
- **Scale** for application should be broadened to include other smaller/major developments that may not necessarily be subject to EIAs.
- Statement does not provide adequate **evidence** to show improvements or justification for measures rejected by developers.
- Effectiveness of measures should be measured against specific **targets** of reduction.
- It should be made clear that the **Atmospheric Dispersion Modelling System** (**ADMS)** 5 rather than ADMS Roads should be used; and further detail on the modelling process should be included.
- **Modelling** should be undertaken alongside the road network being modelled to be useful; design process dispersion modelling should be required.
- Emphasis should be placed on **monitoring** of measures post-completion; reference to **Breathe London** sensors should be removed due to margin of error of data compared to regulatory monitoring devices.
- Environment Agency's simplified monitoring guidance for **medium combustion plant** may be referenced.
- **Training** for local planning authority colleagues is welcome.
- More technical guidance and **best-practice examples** are welcome.
- Consultation of AQP Statement with the **local community** should be required.
- Not enough specifics around enforcement of measures; **model conditions** should be provided; local planning authorities would welcome opportunities to **control more sources** of air pollution from new major developments, i.e. woodburning.
- Applicants should be required to liaise with **Environmental Health Officers** before the pre-app stage and before dispersion modelling is carried out.

- **Hyperlinks** to the London Plan should be embedded into guidance where appropriate, along with links to external resources.
- AQP should be referenced in **design guidance** to inform non-air-quality specialists.
- Reference to **transitional** provisions could be included at masterplanning level.

GLA response

The draft guidance explicitly states that measures that are fundamental to the design of a development are expected to be secured through legal and binding agreements or conditions, and **enforced** where necessary. However, additional text has now also been added to support the use of conditions and legal agreements to secure measures that are relevant to the monitoring of the application, or those seeking further details that may potentially change. Meanwhile, appropriate monitoring methods and requirements can be secured in the 'Implementation and monitoring' section of the Statement.

It is expected that large project teams will be established early on for **large-scale** developments that are likely subject to EIAs and will be able to provide sufficient expertise to develop and test ideas during the design process. It will also likely be possible for these large-scale developments to align AQP approaches with related area-wide policies, such as Healthy Streets and energy masterplanning, and seek opportunities to go beyond the simple requirements of London Plan Policy SI1.

The AQP Statement is expected to capture **evidence** of why specific measures have been identified and how they will be implemented and monitored. There is also an expectation that evidence will be provided to support the decisions to implement these measures. Similarly, justification and evidence to support circumstances where measures have not been implemented, but could reasonably be expected to be, will also be required.

It should be noted that AQP is meant to be a holistic approach to encourage creative thinking and innovation; and that it does not function as a quantitative policy, as with AQN. Its purpose goes beyond emissions reductions alone. As such, requiring calculated examples of emissions reductions against specific **targets** may lead to results drawn from hypothetical bases, bringing about similar conclusions to those currently proposed. Moreover, the quantitative benefits of many measures may not be well known at this time, especially for new and innovative ones, so it would be difficult to stipulate specific targets against which each one should be compared. The inclusion of targets and thresholds for measures where a firm evidence base is not available – for example, an improvement of x per cent on baseline NO_2 concentrations for an area – would likely result in unachievable targets. We also know of designs that are beneficial, but are not quantifiable – for example, measures that drive positive behavioural change such as the installation of bike shelters to promote active travel.

AQP is one policy amongst a package of others found in the London Environment Strategy, the London Plan and the Mayor's Transport Strategy that are in place to

control air pollution in the city. As such, the suitability of evidence provided in the Statement will be down to the professional judgement of the planning officer.

Specific versions of the **ADMS** and other modelling programmes have not been referenced in the guidance, as it is generally assumed that the **modelling** would be undertaken by air-quality professionals who should be staying abreast of the appropriate tools and modelling methods to use. A similar assumption is made in terms of **monitoring** the impact of implemented measures, which will rely on professional standards and the available options. The specific reference to **Breathe London**, however, has now been removed and replaced with a broader reference to low-cost indicative monitoring options.

A reference to the Environment Agency's guidance for monitoring emissions from **medium combustion plant** has been included to assist with those developing emission testing programmes for combustion appliances.

Depending on the areas for which **training** is requested, and on available resources, there may be scope for workshops to be delivered in the future.

The GLA intends to create a database of **best-practice examples** and case studies across the four themes within the AQP approach, which will be shared with interested stakeholders as these become available.

Local authorities and developers may choose to engage with **local communities** and consult on a new development's AQP Statement if they wish, and the GLA would not oppose this process. Whilst the guidance states that the 'Implementation and monitoring' section of the AQP Statement should detail any consultation stakeholders that have informed the AQP approach, it is not a specific requirement of the policy for engagement with local communities to be undertaken.

It is difficult to include specific methods of enforcement, including **model conditions**, in the LPG without first understanding what measures are being proposed for implementation. However, the matrix includes a section for further information around how measures will be secured, and the implementation and monitoring requirements should detail how binding agreements will be fulfilled before conditions are discharged.

Additional text to support local authorities wishing to propose measures and approaches to developers have now been included, so that they may be able to **control more sources** of air pollution. It should be noted that AQP is one policy within a package of others aimed at improving air quality in London. Therefore, whilst this policy alone cannot address all sources of pollution, there are others found within the Mayor's Transport Strategy, the London Environment Strategy and the London Plan that can support this aim. The AQN policy, for example, restricts the use of solid fuels such as wood for primary and secondary heating; and any new development that uses solid and liquid biomass/non-biomass appliances would not be AQN.

Text has been added to suggest that discussions with **Environmental Health Officers** could be helpful to identify local pollution sources, which could influence designs to benefit air quality.

Additional **hyperlinks** have been added to the LPG to help users navigate between relevant London Plan policies and GLA/TfL guidance documents. However, a decision has been made to exclude hyperlinks to external information as these may become broken over time and the GLA has no control and ability to fix them.

AQP is referenced in the **design guidance**, Optimising site capacity – A design-led approach LPG and Housing Design Standards LPG.

The LPG's text has been modified to include the suggestion that, where full build-out will take many years, it may also be necessary to consider intermediate and **transitional** phases of infrastructure delivery and the implementation of measures to prevent negative impacts to air quality in the short term.

3.2 Summary of Air Quality Neutral LPG consultation responses

As part of the engagement on the draft guidance, respondents were asked to submit responses to specific questions. This section also includes responses through other engagement channels, such as emailed responses.

Question 1: To what extent do you agree or disagree with the following sentence? 'Having the Air Quality Neutral guidance will help to improve air quality in London.'

Thirteen responses were received to this question from the online survey; and 77 per cent of respondents strongly or somewhat agreed that having the AQN guidance will help to improve air quality in London.

Response	Number	Percentage
Strongly agree	5	38.5%
Somewhat agree	5	38.5%
Neither agree nor disagree	0	0%
Somewhat disagree	2	15.4%
Strongly disagree	1	7.7%
Total	**13**	**100%**

Question 2: Please tell us why you answered the way you did to the previous question.

N.B. This question refers to question 1: 'To what extent do you agree or disagree with the following sentence? "Having the Air Quality Neutral guidance will help to improve air quality in London."'

Thirteen online consultation respondents provided an answer to this question. A summary of the responses, including responses submitted by emails and online/in-person events, are shown below:

- Benchmarks are an effective tool and useful measure of AQN and will drive a reduction in emissions.
- Guidance will reduce air pollution from new developments, along with associated emissions.
- AQN is clear and user-friendly. It is useful to have clear guidance.
- **Scope** of AQN is limited, does not improve air quality, and does not drive change; it should be clear that AQN prevents erosion of baseline air-quality conditions.
- AQN should include more stringent benchmarks for **sensitive locations**.
- Option of **offsetting** could lead to mitigation avoidance.
- Needs to be clearer that AQN is the minimum standard.
- There should be no **exclusions** for major developments, even if there are no new emissions sources.

GLA response

The **scope** of the policy is aimed at preventing the gradual degradation of air quality through the sum of many smaller contributions by individual developments to air pollution. It is one policy amongst a package of others found in the London Environment Strategy, London Plan and Mayor's Transport Strategy to improve the air quality in London more broadly.

We have made the decision to maintain the broad applicability of the benchmarks found in the policy, however local authorities may choose to implement more stringent benchmarks in their Local Plans provided they are appropriate and do not conflict with the aim of this policy and the London Plan.

Offsetting payments have been provided as a final option, at the discretion of the local planning authority, for situations where it is not possible to identify or agree appropriate and adequate mitigation measures. However, offsetting payments are deliberately high and prohibitive to counter the risk of developers using this option to avoid mitigation.

Although AQN allows for **exclusions** from a detailed calculation for certain major developments, air quality assessments still need to be carried out for these types of developments as per the London Plan requirements where AQN would still need to be addressed.

Question 3: To what extent do you agree or disagree with the methodology set out for meeting the Building Emissions Benchmarks?

Thirteen responses were received to this question from the online survey, 76 per cent of respondents strongly or somewhat agreed with the methodology set out for meeting the Building Emissions Benchmarks (BEBs).

Response	Number	Percentage
Strongly agree	1	7.7%
Somewhat agree	8	61.5%
Neither agree nor disagree	4	23.1%
Somewhat disagree	1	7.7%
Strongly disagree	0	0%
Total	**13**	**100%**

Question 4: Please share any comments you have on the Building Emissions Benchmarks, including your views about the benchmark emissions rate for Particulate Matter being set at zero.

Eleven online consultation respondents provided an answer to this question. Many respondents indicated support for the concept of the BEBs and supported the benchmark emissions rate for particulate matter to be set at zero. A summary of the responses is shown below:

- Agreement in principle with benchmark emissions rate for particulate matter being set at zero and the concept behind BEBs.
- BEBs should not include standby **generators**; evidence needed for allowance of less than 50 hours of testing.
- Scope of the BEBs should be wider, i.e., to include **woodburning**.
- Liquid and solid fuels from biomass can create pollution but have benefits for **circular economy** and carbon; Table 3.5 needs updating as lacks generic emission rates for these sources.
- Emissions from regular **temporary events/temporary uses** should not be excluded; definition for temporary events needed.
- BEBs for NO_x are provided for different **land uses** that do not match existing class coding under the Town and Country Planning Order 1987.
- Would be better to set emission standards for the **equipment** and exclude land use.
- **Gas combustion** still produces particulate matter; therefore the benchmark for this pollutant cannot be set at zero.
- Particulate matter from **commercial catering** should be tackled.
- BEB for **hotels** should be lower.

- Exception for developments using **wasted** heat from existing heat network should be removed.
- Guidance should be clear that **non-biomass** solid and liquid fuels are not AQN.
- BEBs for additional **combustion plant technology**/technology types should be provided.
- BEBs should be **technology-neutral**.
- Emission rates for **boilers with selective catalytic reduction (SCR)** are not consistent with figures found in the GLA's SPG and many local authorities' Local Air Quality Management (LAQM) plans.

GLA response

We recognise the potential use of **generators** for emergency uses and operational testing (less than 50 hours per year as per Government guidance on specified generator and medium combustion plant permitting) but expect emissions from uses other than those stated to be included in the AQN calculations. Additional text has been added to the LPG to suggest that, where appropriate, local authorities could impose more restrictive benchmarks as long as they are consistent with the safe operation of the equipment.

AQN does not permit the use of solid and liquid fuelled appliances, including **woodburning**, for primary or secondary heating due to the particulate matter emissions produced by these methods. The benchmark emission rate for particulate matter is zero, so the use of these appliances for the purposes stated would mean the development is not AQN. This is the reason that there are no benchmarks for solid and liquid fuels included in the BEBs.

We consider that the burning of biomass does not support a **circular economy** since the material is burnt. A circular economy keeps materials in use for as long as possible.

AQN benchmarks are assessed against annual emissions, so it is unlikely that this policy could be applied effectively against **temporary events**. However, there are policies in place that would be more effective in controlling emissions from these sources, e.g., London's Low Emissions Zone for Non-Road Mobile Machinery; local licensing, etc. A footnote has also been added to the LPG to define temporary events. **Temporary uses** and structures, however, should be seeking to achieve the benchmarks. Unlike events, temporary uses can be in place for long periods of time and thus should be encouraged to meet the benchmarks.

The benchmarks have been based on **land uses** as opposed to use classes in order to make the guidance simpler and more user-friendly. Where land uses have been combined, this was done on the basis of similar fuel energy densities or travel patterns and, as such, may not exactly reflect class coding under the Town and Country Planning (Use Class) Order 1987 (as amended).

The current methodology reflects our understanding that different land uses, **equipment** and technologies will likely influence the levels of emissions produced from heating and power and it has been applied to the BEBs outlined in the LPG.

Particulate matter emissions from domestic **gas combustion** are not well enough understood or routinely measured as part of type-testing for appliances. For this reason we are unable to set an evidence-based benchmark for these emissions.

Emissions from **commercial catering** do need to be addressed and the GLA will review options to do this in future. However, they currently lie outside the scope of this policy. Inclusion of a benchmark for commercial catering could also, potentially, lead to the inclusion of emissions from domestic cooking appliances; we currently do not have an evidence base for either against which we can set informed benchmarks.

Hotels are very energy-intensive developments, and efforts to reduce the BEB without evidence on reduced energy use could create a risk potentially rendering most future development of this type non-compliant.

The LPG states that connection to a district heat network does not mean the development is automatically considered to be AQN, but where the heat is genuinely from an existing source that would otherwise be **wasted**, the emission rate is zero. Removing this exception has the potential to: fail to reduce emissions from these sources; and continue to allow for the creation of unproductive pollution from them. Additional text has been added to the LPG to explain that *any new* heat sources will require AQN calculations.

Text in guidance modified to clarify that both biomass and **non-biomass** liquid and solid fuels are not AQN due to the particulate matter that they emit, in addition to NOx.

BEBs for other **combustion plant technology** are not included due to their PM emissions, for which the benchmark is set at zero. Furthermore, other technology types are not directly supported in Policy SI 3 of the London Plan.

It would not be possible to set **technology-neutral** BEBs because doing so would either effectively outlaw other sources that are needed in the transition to heat networks, or allow the installation of higher-pollution boilers.

The rates for **boilers with SCR** found in the model SPG previously published by the GLA as part of the London LAQM (LLAQM) regime has now been withdrawn.

Question 5: The guidance sets out the methodology for calculating generic predicted building emissions where a combustion source is not known. Please share any comments you have regarding this process.

Seven online consultation respondents provided an answer to this question. A summary of the responses is shown below:

- Agreement in principle for calculating generic predicting building emissions and the methodology.
- Guidance required for circumstance where **generic emission rates** are different to the actual emission rates of the installed. This may change the outcome of whether the proposed development is AQN or not; methodology should assume worst-case scenario when developers have not disclosed combustion source; generic values used by the developer need to be secured through a condition that require such emissions rates to be met.
- Clarification requested for how generic rates are calculated; supporting **research** should be published.

GLA response

Text has been added to clarify that generic emission rates from Table 3.5 can be used in an AQN Assessment when subject to a condition that ensures that the final units will not produce emissions which exceed those figures.

Whilst **generic emissions rates** can be used when a developer is not yet aware of/unable to disclose the specific units that will be installed in a development, the appropriate BEB will still need to be met in order for a development to be deemed AQN. This is ultimately a matter for the planning authority to require the details before making a planning decision. In circumstances where this is not possible, the procedure for an outline application should be followed.

The **research** behind the updated benchmarks and generic emission rates has been published on London.gov.uk here.

Question 6: The guidance sets out the process of gathering data on energy usage and emissions rates for combustion sources. Please share any comments you have regarding this process and suggestions for how it can be improved.

Seven online consultation respondents provided an answer to this question. Many respondents indicated support for the process of gathering data on energy use and emission rates for combustion sources. A summary of the responses is shown below:

- Agree in principle with the process.
- Why **heat networks** don't have an estimated combustion rate; and heat pumps set at zero.
- Uncertainty if emissions from the **grid** should be included in the BEB. It is included in table 3.3, but there is an emission rate of zero at point of use.
- LPG should state that running diesel **generators** to feed into the grid should be discouraged due to emissions.
- **Combustion-based heating** should not be allowed.
- Guidance to facilitate **estimation of energy use** should be included.

GLA response

Fully heat-pump-driven **heat networks** do not produce NO_x emissions, which is why the NO_x emission rate is set at zero. For more complex networks, there are no generic emissions available because they vary according to size; further details should be sought from the energy supply company.

Additional text has been added to the LPG to clarify that the NO_x emissions rate for **grid** electricity should be assumed to be zero. This is because emissions from electricity generation at power stations will be dealt with in local permissions for those facilities.

Emissions from **generators** that are not being used for emergency, life-saving or operational testing, are included in the AQN calculations. The default position is that these would not be considered AQN as they exceed the particulate matter benchmark. It is thus the intention of the policy to promote the use of more energy-efficient technologies.

It is currently not GLA policy to exclude **combustion-based heating** sources.

Additional footnote added to reference GLA's Energy Assessment Guidance to support robust **estimation of energy use**.

Question 7: The guidance sets out generic emissions rates for combustion technologies where specific units have not yet been selected. Please share any comments you have regarding the emission rates or how the process can be improved.

Seven online consultation respondents provided an answer to this question. A summary of the responses is shown below:

- Agree in principle with the process.
- **Methodology** of the calculations and conditions under which the benchmarks are calculated need to be provided. For **mg/kWh** it is very difficult to find out the correct basis for the calculation. For mg/Nm^3 the guidance needs to define what is meant by **Nm^3** (i.e. what are the parameters for normalisation – N).
- **Minor developments** can be assumed to meet the benchmarks if the system is a gas boiler meeting the NO_x emission rate of 40 mg/kWh. Does this apply to a development with multiple boilers that meet this standard?

GLA response

The research and **methodology** behind the updated benchmarks has been published on London.gov.uk here and the basis for calculation for **mg/kWh** can be found in the information supplied by the manufacturer.

A footnote has been added to the LPG to set the parameters for normalisation, the 'N' in **Nm^3**.

Additional text has been added to the LPG to clarify that a **minor development** with a new heating system can be deemed AQN if it consists of one or more individual gas boilers with NO_x emissions rated at less than 40 mg/kWh.

Question 8: To what extent do you agree or disagree with the methodology set out for meeting the Transport Emissions Benchmark?

Thirteen responses were received to this question from the online survey. Under a quarter of respondents of the online survey disagreed with the methodology set out for meeting the Transport Emissions Benchmark (TEB).

Response	Number	Percentage
Strongly agree	1	7.7%
Somewhat agree	7	53.8%
Neither agree nor disagree	2	15.4%
Somewhat disagree	3	23.1%
Strongly disagree	0	0%
Total	**13**	**100%**

Question 9: Do you have any additional comments on the Transport Emissions Benchmark, including the use of TRICS data to calculate the new proposed benchmarks? If you disagree with the use of TRICS data, please specify what data the Transport Emissions Benchmarks should be based on.

Ten online consultation respondents provided an answer to this question from the online survey. These responses have been combined with those received by email. The most frequent comment was that car-free developments should not be excluded from transport emission assessments. A summary of the responses is shown below:

- Too many elements are out of scope, reducing impact on central London sites. For example, it excludes deliveries, deliveries from depots, **HGV** vehicles, servicing, petrol scooters and emissions from non-occupiers. It is only aimed at large car parking sites, which are less common in central London. “Car-free developments” should not be excluded from transport emission assessment.
- Agree with the methodology in principle.
- Unclear why **offices/light industrial** should generate more trips in the CAZ than in inner London. If residential development generates more trips in inner London than in the CAZ, the office/light industrial trip rates should follow.
- Query regarding how **Public Transport Accessibility Level (PTAL)** ratings impact on air-quality emissions.

- If additional transport is included in wider air quality impact assessments, developers should still be required to provide this information in one **single document**.
- Additional guidance from the GLA requested on whether **local authorities** may enforce the CAZ TEBs in areas that fall outside the formal boundaries of the CAZ.
- The definition of transport benchmarks should be based on the desirable trip generation to be achieved to reach sustainable development, as opposed to using the "as is" situation as reported in Trip Rate Assessment Valid for London (TRAVL)[2] survey results as acceptable; trip rates should be based on **sustainability principles**, not TRICS/TRAVL.
- AQN requirements are based on improving air quality, not on keeping current hotspot locations. Therefore, the use of "**achievable** benchmarks" is not considered strict enough to support the policy.
- Trip rates too low for **logistics**, service and distribution centres; and not consistent with TRICS/TRAVL.
- Request for the GLA to continually **review** and improve the stringency and scope of these benchmarks, to reflect best practice, emerging issues and pollutants.
- Further detail requested for methodology behind emission factors found in **Table 5.3**.
- Use of **TRICS**/TRAVL data is circular; developments would not exceed benchmarks if the same data were used to identify trip rates.
- Difference of trip rates between CAZ and outer London are too high; trip rates for hotels too high.
- Do trip rates include **public transport**?
- Unclear if TEB only includes **private vehicles**.
- Unclear if trip rates are based on **one-way** or two-way trips.

GLA response

AQN focuses on minimising emissions from transport that can be controlled via the planning process, for example, limiting parking available for staff and customers to reduce the number of trips generated by private vehicles and should align with the transport policies of the London Plan. Emissions generated by other sources such as **HGVs**, servicing and delivery, will be assessed in an air quality assessment, which reviews the air quality impacts of a development as a whole.

The updated benchmarks are based on TRICS data that was available at the time the research was commissioned and should reflect travel patterns to the relevant land uses. It should be noted that trip rates for **office/light industrial** land use are based on trips per m^2; and for residential use, trips per dwelling.

[2] The TRAVL was used to set TEBs in the previous AQN guidance. TRAVL has now been merged with the national TRICS database, but some responses to the consultation used the old name.

The impact and inclusion of **PTALs** can be complicated because they can change regularly and, in fact, the new development itself can have an impact on a local area's PTAL. The GLA will consider options to include PTAL ratings within the TEBs in future updates of the LPG.

Whether the AQN Assessment is presented within a **single document**, for example, within the air quality assessment, or separately, is a matter of preference. We feel that cross-referencing between relevant documents is also an acceptable approach to take. It should be noted that not all types of new developments require air quality assessments, so AQN Assessments would need to be presented as a separate document in those occasions in any case.

Local authorities may set tighter TEBs for AQFAs, for example, as long as they are appropriate and adequate to meet the requirements of this policy and the London Plan.

Basing trip rates on **sustainability principles** and not TRICS would mean a fundamental change in the policy, and would lead to difficulties in evidencing benchmark numbers.

The AQN benchmarks are meant to be challenging, but **achievable**. An unachievable policy would not only be unfair, it could become one that forces offsetting as an outcome, which is not its aim or purpose.

The GLA has revisited the data used to inform the TEBs proposed for the **logistics** industry in the draft LPG; and has revised them in order to support the policy's aim to set realistic benchmarks that are both challenging *and* achievable. The new Trip Rate Benchmarks for the 'Industrial' and 'Storage and distribution' uses in inner and outer London have been sense-checked against real-world examples; and have been adjusted to the following:

Land use	Annual trips per	Trip Rate Benchmark		
		CAZ	Inner London (excluding CAZ)	Outer London
Industrial	m^2	0	5.6	6.5
Storage and distribution	m^2	0	5.5	6.5

These benchmarks, as with others found in the LPG, will be kept under **review** and updated in line with technological and commercial advances.

The 2016 London Atmospheric Emissions Inventory (LAEI) informed the emission factors found in **Table 5.3**. The LAEI provides an estimate of the total emissions from all passenger cars in central, inner and outer London in 2016. These emissions are based on a detailed inventory of link speeds and include a provision for cold-starts. The LAEI also provides the total vehicle-kilometres driven by cars in 2016 in each area. The approach has been to divide the total emissions by the total vehicle-

kilometres; thus providing the average assumed emissions per vehicle-kilometre in each area in 2016.

TRICS allows people to estimate trip generation on a "per parking space" basis. The benchmark can be exceeded if there is excessive parking on site. Conversely, the benchmark can be met if enforceable measures are in place to reduce journeys. Using TRICS, therefore, provides a consistent method for understanding the impacts of the site on transport emissions.

The TEBs reflect the latest evidence that we had available at the time external research was commissioned.

The trip rates do not include **public transport**. The GLA and TfL are working towards zero-emission public transport, so these trips are not relevant within the scope of AQN.

The TEBs only account for **private cars/vehicles**. The TEBs do not include operational trips generated by deliveries and servicing, taxis or heavy vehicle movements from non-occupiers. Extra text has been added to the LPG to stress that these types of trips should be excluded from TEB calculations, as they will be captured in the air quality assessment.

The TEBs are defined as the predicted number of single trips per m^2 of floorspace or dwelling; and each **one-way** trip is counted. This means an outbound and return journey to and from a location is counted as two trips. Additional text has been added to the LPG to clarify this.

Question 10: The BEB and TEB in the guidance are defined for different land uses. To what extent do you agree or disagree with the following sentence? 'The way the land use categories have been grouped and defined are clear and easy to apply.'

Thirteen responses were received to this question from the online survey; 61 per cent of responses indicated agreement that the way land use categories were grouped and defined was clear and easy to apply.

Response	Number	Percentage
Strongly agree	3	23.1%
Somewhat agree	5	38.5%
Neither agree nor disagree	1	7.7%
Somewhat disagree	3	23.1%
Strongly disagree	1	7.7%
Total	**13**	**100%**

Question 11: The new Class E was introduced under the Town and Country Planning (Use Classes) (Amendment) (England) Regulations 2020 following the development of the guidance. As a result, separate use classes for commercial uses, including retail and offices, have now been replaced by use Class E. Please comment on whether you think this guidance takes the right approach to calculating the Building Emissions Benchmark for uses within Class E based on the intended and anticipated use of the land under this category. If you think this is not the right approach, please detail how this approach should be modified.

Nine online consultation responses were received for this question. The majority (five) of respondents indicated that they agreed in principle with the approach. A summary of responses is detailed below.

- Agree in principle with the approach.
- Further differentiation is needed to accommodate different trip rates/emissions associated with different use classes within **class E**.
- Additional guidance required on sub-categories of **land use that are not included in Table 3.1**.
- The **official land use classes** should be added to the table, as per planning portal.

GLA response

The text in the LPG has been amended to further clarify that, where the use class/land use type is not specified in a development proposal, it is up to the discretion of the local planning authority to decide and use the most relevant benchmarks (given the information submitted at the planning application stage). Alternatively, where use **class E** has been specified without further detail, the land uses with the strictest emissions/trip rates from Tables 3.1 and 4.1 should be used as the default worst-case scenarios. Similarly, in situations where a **land use is not included in Table 3.1**, the final decision regarding which benchmark should be used will rest with the professional judgement of the planning authority.

Official land use classes have not been added to the table because the guidance is meant to be more user-friendly, with less reference to technical language and we have made the decision to continue with this format. Furthermore, some land uses within use classes may have been split and grouped with others as they share similar fuel energy densities or travel patterns.

Question 12: The new Class E was introduced under the Town and Country Planning (Use Classes) (Amendment) (England) Regulations 2020 following the development of the guidance. As a result, the guidance requires the benchmark for office/light industrial to be used for use Class E (or where separate uses within use Class E are not specified). Please comment on whether you think this guidance takes the right approach to calculating the benchmark trip rates for uses within Class E. If you think this is not the right approach, please detail how this approach should be modified.

Eight online consultation responses were received for this question. Whilst many agreed with the approach in general, several respondents sought the application of the worst-case benchmark if there was no more specific detail available than use class E, and a clarification on the approach taken. A summary of the responses is detailed below:

- Agree in principle with the approach.
- Worst-case use should be applied if the use of class E is **not known**; there should be flexibility for local planning authorities to determine the most likely use of the Class E floorspace, or if land use is not specified at the planning application stage/outline application stage.
- Approach taken in Table 4.1 (TEB trip rates) contradicts the approach taken in Table 3.1, as in this case where the separate Class E uses are not specified the benchmark for office/light industrial is to be used.
- An application relying on an assessment done on the basis that it is office/light industrial, should attract a condition **limiting use** to office/light industrial, and requiring a new air quality assessment if they implement any use other than office/light industrial.
- **Doctors' surgeries** should not be included in the same land use as schools and nurseries, but should be a separate category, with different benchmark trip rates.
- Unclear why the retail land use has been broken down to two separate land uses: **superstore** and convenience.

GLA response

The LPG has been amended to provide additional clarity that where the use class/land use type is **not known**/not specified in a development proposal, it is up to the discretion of the local planning authority to decide and use the most relevant Trip Rate Benchmark. Where use class E has been specified without further detail, the benchmark for office/light industrial should be used for calculating the TEB; and the benchmark for retail should be used for calculating the BEB, as these land uses reflect the 'worst-case scenarios' for both benchmarks. This means the strictest benchmarks applicable to use class E would apply.

It may not always be possible to restrict changes within use class E, **limiting use** in a blanket way via conditions – for example, by not allowing a development to change from a shop to a café. However, in the event that there is a restriction of use within a class E, the relevant benchmarks would still need to be applied and permission would need to be sought from the local planning authority to approve any subsequent changes. Additional text has been added to clarify that where the use within class E is unrestricted the tightest benchmark should be applied to prevent excess emissions.

The updated Trip Rate Benchmarks are based on external research commissioned by the GLA and the consultants would have considered the latest data/travel patterns available to them at the time. The benchmarks proposed were based on use classes and use class D1 includes schools, **doctors' surgeries** and nurseries.

Similarly, the consultants made the distinction between **superstores** and convenience stores when analysing the TRICS data because it was the sensible approach to take based on available data.

Question 13: To what extent do you agree or disagree with the methodologies set out for mitigation and offsetting, including the switch of focus from PM_{10} to $PM_{2.5}$?

Thirteen responses were received to this question from the online survey. Over 75 per cent of respondents agreed strongly or somewhat with the methodologies set out for mitigation and offsetting.

Response	Number	Percentage
Strongly agree	7	53.8%
Somewhat agree	3	23.1%
Neither agree nor disagree	2	15.4%
Somewhat disagree	1	7.7%
Strongly disagree	0	0%
Total	**13**	**100%**

Question 14: Do you have any comments on the mitigation measures and offsetting calculations?

Nine responses were received to this question from the online survey. Numerous respondents agreed with the mitigation measures and the switch in focus from PM_{10} to $PM_{2.5}$. A summary of responses is given below:

- Agree in principle with the mitigation measures and a switch in focus from PM_{10} to $PM_{2.5}$.
- Request for an indicative **list of mitigation measures** for offsetting excess building and transport emissions.
- Further guidance is needed on the methodology for the **offsetting** including worked example; details on how the offsetting payments should be made and for what measures.
- The text should be amended to make sure **mitigation** measures are specific to specific land uses.
- Firmer language needed to encourage **redesign** before mitigation.
- Offsetting should be considered a measure of **last resort**, and the guidance wording should be strengthened to make this more explicit; development should be refused if benchmarks not met; guidance is not clear about the relationship between achieving the standards and the necessary amount of mitigation.

- It is not clear how Table 5.1 and the offsetting calculation is linked to **Tables 5.2 and 5.3** and relate to the calculation for offsetting for TEBs shortfall in a development.
- Offsetting should be updated to reflect the DEFRA Emission Factor Toolkit (**EFT**); using fixed emission factors over a 30-year period does not show developers the benefits of adopting cleaner fleets.
- NO_x benchmarks needed for offsetting calculations on **solid/liquid fuels**.
- Further guidance needed for offsetting building emissions of **particulate matter**.
- Additional guidance needed for how to offset emissions from **mixed-use** developments.
- More emphasis should be placed on **post-completion monitoring** and quantification of mitigation.

GLA response

A general indicative **list of mitigative measures** has not been included as mitigation should be locally specific to produce effective outcomes.

A further example of **offsetting** calculations has been added to the LPG in addition to a footnote simplifying the offsetting formula. Text has also been added to state that the expectation is for the offsetting payment to be used to improve local air quality and how it could be collected.

The LPG states that, where a development cannot meet the benchmarks, agreement can be sought with the local planning authority to secure **mitigation** measures, with a preference for on-site measures in accordance with Part E of Policy SI 1. Mitigation measures should exceed the minimum requirements in the London Plan policies.

The guidance is clear that **redesign** should be the first step taken if a development fails to meet one or both benchmarks, after which mitigation can be an option. Further guidance on the amount of mitigation required is outlined in 5.1.3 and 5.1.4. Offsetting is presented as a **last resort** option at the discretion of the local planning authority and should be reserved only for situations when it is not possible to identify or agree appropriate and adequate mitigation measures and to help developers compensate for emissions that cannot be avoided. The option of offsetting cannot be removed completely. Paragraph 9.1.21 of the London Plan also recognises that offsetting payments may be an option for developments that are unable to meet AQN standards.

Paragraph 5.3.1. in the LPG explains the role of **Tables 5.2 and 5.3** in the offsetting calculations and the guidance signposts to a worked-out example in Appendix 1.

Modifying the offsetting methodology to reflect the **EFT** would reduce the current incentive structure in place to motivate developers to redesign or mitigate before agreeing an offsetting payment option with the local planning authority. The 30-year time frame is typical for carbon emissions, which is the assumed lifetime of the development's services. Similarly, whilst the grid is decarbonising, there is no discount offered for carbon offset payments.

Additional text has been added to the LPG to clarify that, for the purposes of offsetting, any NO_x emissions from **solid/liquid** fuels will be assumed to have a benchmark of zero.

Heating technologies that emit **particulate matter** are not permitted under this policy; therefore the benchmark for this pollutant is set at zero. The same benchmark can be used for AQN calculations and offsetting.

Text has been modified to clarify that, for **mixed-use** developments, the highest-category damage cost applicable to any part of the development should be used to calculate the offsetting payment.

Post-completion monitoring can be secured through a condition to ensure/evidence that specific outcomes have been achieved from mitigative measures.

Question 15: Do you have any further comments to make on the guidance?

Nine responses were received to this question from the online survey. A summary of the responses is detailed below:

- Are the GLA planning any **training** or information sessions on the AQP/AQN guidance for development management colleagues or developers?
- GLA should provide a **model-planning condition** to require submission of the appliance details.
- The BEBs should include both **PM_{10}** and $PM_{2.5}$ emissions.
- "Emergency and **life-saving power**" should be clearly defined within the AQN guidance to avoid unnecessary emissions from over-sized generators.
- Clarification on **phased developments**, and when applications for amendments to the approved scheme should trigger reassessment is requested.
- No definition is provided within this guidance of what a "**minor development**" is and, therefore, when the simplified procedures for assessment should be used.
- Would like endorsement from **DEFRA** and departments responsible for physical planning for London and beyond, their full backing in cases of difficulty will be crucial.
- For minor applications, the LPG should require a clear **statement** on the AQN status of the application in the planning statement or Design & Access document.
- Diesel-fuelled backup generators should be not neutral by default, **zero-emission alternatives** should be proposed.
- Benchmarks for all **backup generators** must be provided in the LPG and conformed with.
- Text should be amended to reflect the need to take **location** into account, particularly hot spot/sensitive locations. The benchmarks need to also be consistent with the LAQM endeavours to improve air quality within problematic areas.

- Guidance should explain **relationship** between AQN and AQP, i.e. one is a minimum standard and AQP pushes development beyond this.
- GLA should **monitor** application of the policy.
- Text should be repeated in relevant sections of the LPG to help users **navigate** through the guidance.
- GLA should provide reference to **Heat Network Priority Areas** and links to TRAVL system and TRICS.
- Clarity needed to confirm if solid/liquid fuels include **non-biomass** sources
- A full AQN Assessment should be required for minor developments in **Air Quality Management Areas (AQMAs)**.
- Clarification needed on relationship between AQN, permitted installations and **permitting**.

GLA response

Depending on resources available, there may be scope for **training** workshops to be delivered in the future, so best-practice can be shared, and **model-planning conditions** can be discussed.

In 2018, the London Environment Strategy introduced a new focus on fine particulate matter pollution ($PM_{2.5}$) as opposed to the coarser fraction (**PM_{10}**). This change of emphasis is also reflected in the London Plan, which in turn means that we are proposing similar changes to the AQN benchmarks. It should be noted that the benchmark emission rate for particulate matter is zero. Any development that uses solid or liquid fuels for primary or secondary heating will therefore not be AQN.

There is no formal definition for 'emergency and **life-saving**' power, but it is generally considered to include emergency and standby systems that provide backup power to fire/life-safety systems and critical equipment. It would be difficult to define exactly what equipment should be included due to the complexities of how some of the systems work or are interlinked – for example, a data centre uninterruptable power supply might support the cloud software running the systems that support hospital infrastructure.

Additional text has been added to indicate points at which a **phased development** should be reassessed against the AQN benchmarks.

The LPG text has been modified to provide a clearer definition for '**minor development**'.

The GLA will continue to promote our air quality policies to **DEFRA**, but it will be equally important for stakeholders and supporters of AQN and AQP to endorse this policy for use nationwide.

The LPG is clear that all developments, unless specifically excluded, must meet the AQN benchmarks and carry out an AQN Assessment. We are allowing flexibility in terms of how this information is being presented for minor development, i.e. not as a specific type of **statement**, in order to impose proportional assessment/resource implications.

Endorsement of **zero-emission** alternatives to diesel generators sits outside the scope of this LPG's template/style. However, we are supportive of these alternative sources and the push for zero-emission developments and will promote these outsides of the guidance for example, on the LPG's landing page.

It is expected that the use of **backup generators** for anything other than an emergency and operational testing would be prevented by planning condition. The NO_x and particulate matter emissions from these sources other than for an emergency must be included in AQN calculations. Where appropriate, boroughs could seek a more restrictive condition for these sources, if that would be consistent with the safe operation of the generators.

Local authorities may wish to encourage stricter benchmarks locally, for example, a development's **location** in a pollution hotspot, but evidence will need to be available to support this approach within their local plan examinations.

An explanation of the **relationship** between AQN and AQP and how they work together will be provided on the london.gov.uk landing page following the publication of the LPGs.

Application of AQN is **monitored** in the LLAQM Annual Status Reports on a local level, the London Plan Monitoring report will capture referable applications that meet AQN standards, and the Planning London Datahub will also help the GLA record NO_x and PM emissions on a borough level from development.

Additional hyperlinks have been embedded into the LPG to help readers **navigate** through the document without the addition of unnecessary text.

A hyperlink has been added to signpost to **Heat Network Priority Areas** in the London Plan. We are unable to signpost to TRICS data, as it is not freely available and must be purchased.

Additional text added to state that solid and liquid biomass *and/or* **non-biomass** appliances emit particulate matter and are therefore not considered AQN.

The LPG states that local planning authorities may require a full air quality assessment for a minor development, for example, for those proposed in an **AQMA/AQFA**, in which case full procedures for calculating the BEB and the TEB should be used in the AQN Assessment.

Additional text has been added to the LPG to clarify when AQN can apply to sites regulated by local authority or Environment Agency **permitting.**

4 Other themes raised during engagement

Air Quality Positive LPG

Some feedback received through the consultation process included themes and comments that were not addressed in the final draft of the LPG, as they lie outside the scope of the policy, its objectives and/or the planning process. A summary of these comments is included in the list below:

- Policy not stringent enough to prevent “unnecessary development”.
- Policy should be explicitly linked to the climate emergency and carbon emissions.
- AQP should be combined with AQN to provide a zero-emission framework.
- An AQP Statement should be mandatory at the pre-app stage, with up to five versions produced by the point of discharge of planning conditions.
- Discussions prior to pre-app meetings should be recommended to calculate emissions reductions/produced for each design option.
- Unnecessary use of vans, lorries and other diesel vehicles should be banned
- AQP does not mandate favouring reusing existing buildings.
- LPG should include roadmap for broader application of the policy in the future.

Air Quality Neutral LPG

Some feedback received through the consultation process included themes and comments that were not addressed in the final draft of the LPG as they lie outside the scope of the policy, its objectives and/or the planning process/requirements. A summary of these comments is included in the list below:

- BEBs should include unregulated sources of emissions.
- Engagement with air-quality professionals at design stage should be required.
- Examples of acceptable mitigation for $PM_{2.5}$ from combustion sources should be provided.
- Consideration required for upgrades including glazing and roofing.
- Impact of ventilation for heat conservation vs. indoor air pollution and COVID.
- Pollutants from neighbouring boroughs and sources not included in the BEB.
- Designers/architects and air quality specialists should be brought together at the design stage to influence clean-by-design options and calculate total emissions and exposure risks.
- The use of DEFRA’s damage cost calculator should be recommended to calculate the cost to society and support section 106 contributions.
- Guidance should clearly state that emission reductions achieved by each mitigation measure proposed must be quantified and not be based on subjective assessments.
- Benchmark for new last mile delivery companies should be included.
- A better definition of an AQFA should be provided.
- LPG should include emissions from construction and link with waste/circular economy.

- AQN should be a requirement for energy assessments and developers should be expected to provide statements for energy efficiency improvement for new builds/major works.

5 Equality impacts

Respondents raised the following potential equality impacts arising in relation to the draft guidance:

- Welcome the focus on improving London's air quality as this has a potential positive impact on children, the elderly and those living near busy roads.
- Concern that the AQN benchmarks benefit inner London more than outer London.
- More stringent measures should be in place where the application site sits in the vicinity or catchment area of a sensitive receptor, with particular attention to hospitals, schools, and care homes.
- Improved air-quality measures should ensure that issues of accessibility are also considered.
- Improved air quality can benefit under-21s, over-65s and those with a disability.
- Improvements to walking, cycling and public transport accessibility, through air quality measures, can benefit those without a car.
- The need for wording that reflected transport and active travel networks being accessible for all was highlighted, especially ensuring that cycle infrastructure was accessible to all groups and supporting different groups to cycle more.

GLA response

The GLA welcomes the broad support for additional guidance aimed at improving air quality in London. Both the AQN and AQP guidance documents aim to improve London's air quality over the long term. In particular, the AQP LPG notes the importance of considering the placement of different land uses to ensure that more sensitive uses, such as schools, hospitals and public spaces, are placed in locations where there is good air quality. The AQP guidance also advocates that the layout of development should be designed to improve the dispersion of air pollution; and further advice has now been added in the LPG to suggest that wider, smoother pavements can improve accessibility for those on foot as well as people with disabilities, i.e. wheelchair users.

The AQN guidance provides strict benchmarks on transport and building emissions while recognising the difference in car use in outer London. Nevertheless, both documents strongly advocate improvements to walking, cycling and public transport accessibility.

6 Next steps and monitoring

The consultation took place in late 2021 and early 2022, towards the easing of coronavirus pandemic restrictions. Nevertheless, due to the uncertainty over possible new restrictions, brought in at short notice, the consultation events were held online, with virtual meetings and different ways of responding publicised through the GLA's online platforms. Following the consultation and analysis of responses, the AQN and AQP documents have been updated to reflect the points raised as part of this process. Updated documents will then be approved by the Mayor and it is expected that the documents will be adopted in winter 2022-23.

Following the adoption of the London Plan in 2021 a consultation was undertaken on a new framework for the Annual Monitoring Report (AMR). The consultation has concluded, and the new AMR framework has now been published. A new AMR covering the period 2021-22 is due to be published in March 2023. Monitoring of this guidance will fall under the key performance indicator on air quality.

Appendix 1 Summary of engagement

Formal engagement

Date	Activity Type	Participation	Representation
12 November – 27 February 2022	Consultation survey and written responses	All	49 responses
25 November 2021 10:30 – 15:00	CERC-ADMS User Group	Users of ADMS modelling software	168 attendees
3 December 2021 13:00 – 14:30	Webinar – Overview of AQN and AQP	London borough officers	45 attendees
7 December 2021 18:00 – 19:30	Webinar – Overview of AQN and AQP	General public	16 attendees
10 December 2021 10:00 – 11:30	Webinar – Overview of AQN and AQP	Air-quality professionals	53 attendees

MAYOR OF LONDON

London Plan Guidance

Air Quality Positive

December 2022

Copyright

Greater London Authority
December 2022
Published by:
Greater London Authority
City Hall
Kamal Chunchie Way
London
E16 1ZE

www.london.gov.uk
Enquiries 020 7983 4000
Email planningsupport@london.gov.uk

Other formats

If you require this document in a more accessible format, please get in touch via our online form and tell us which format you need.

Table of contents

1 About this document 2
1.1 What is the 'Air Quality Positive approach'? 2
1.2 Integrating an Air Quality Positive approach in the design process 2
2 Applying an Air Quality Positive approach 3
2.1 Masterplanning and development briefs 3
2.2 Planning applications 3
3 Identifying measures and approaches 5
3.1 Minimum Requirements 5
3.2 Better design and reducing exposure 5
3.3 Building emissions 7
3.4 Transport emissions 8
3.5 Innovation and futureproofing 9
4 Air Quality Positive Statement 10
4.1 Purposes of the statement 10
4.2 Minimum requirements 10
4.3 Structure of the statement 11
4.4 Technical assessments 15
Appendix 1: Mayor of London Order (2008) 17
Appendix 2: Air Quality Positive matrix 19
Appendix 3: Technical assessments 27
A3.1 Overview 27
A3.2 Dispersion modelling 27
A3.3 Advanced analysis tools 27
A3.4 Qualitative tools 28
A3.5 Measuring and monitoring 28
A3.6 Other assessments 29

London Plan Policy	Policy SI 1 Improving Air Quality – Part (C) Policy SD4 The Central Activities Zone (CAZ)
Local Plan making	Air Quality Positive should be applied at the plan-making stage to masterplans (for example, Supplementary Planning Documents) and development briefs that include large-scale development sites that are likely to be subject to an Environmental Impact Assessment (EIA).[1] An Air Quality Positive Statement (AQP Statement) should be produced as part of the evidence base outlining the Air Quality Positive approach taken.
Planning Application type and how the London Plan Guidance will be applied	Air Quality Positive should be applied to masterplans and development briefs for large-scale development proposals subject to an EIA. In this context, 'large-scale development' refers to planning applications that are referable to the Mayor under the following categories of The Town and Country Planning (Mayor of London) Order 2008 detailed in Appendix 1: • Category 1A • Category 1B • Category 2C(1)(a)-(f) • Category 2C(2) • Category 2C(3) • Category 2D An AQP Statement should be submitted as part of the EIA and updated as appropriate for reserved matters applications, outlining the Air Quality Positive approach taken. Where the proposal meets the above criteria for a large-scale development subject to an EIA, but does not have a masterplan or development brief, Air Quality Positive should still be applied.
Who is it for	All relevant parties should use this guidance when undertaking masterplans and development briefs for large-scale development. Applicants (and their planners, designers and architects) should use this guidance to ensure applicable planning applications are designed and delivered using an Air Quality Positive approach. Planning authorities should use this guidance when reviewing an AQP Statement submitted as part of an EIA.

[1] These are developments listed under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

1 About this document

1.1 What is the 'Air Quality Positive approach'?

1.1.1 The Air Quality Positive approach is a process of identifying and implementing ways to push development beyond compliance with both the Air Quality Neutral benchmarks and the minimum requirements of an air quality assessment. To achieve this, an AQP Statement should be submitted that demonstrates how benefits to local air quality have been maximised, and how measures to minimise pollution exposure will be implemented.

1.2 Integrating an Air Quality Positive approach in the design process

1.2.1 To deliver an Air Quality Positive approach, technical air quality expertise should inform every stage of the design process to maximise air quality benefits. It requires planners, designers, architects and air quality experts to show, in their AQP Statement, what measures have been taken throughout the design stages. Air Quality Positive does not use a threshold in the assessment; it instead brings together a range of evidence to show how air quality has been considered holistically, and how the proposal maximises benefits to air quality.

1.2.2 Development design teams should identify opportunities to deliver an Air Quality Positive development in combination with addressing other requirements of London Plan policies at an early stage, such as those relating to design and layout, transport and energy.

1.2.3 This guidance considers measures that contribute to the delivery of an Air Quality Positive scheme under four key themes, set out in section 3:

- better design and reducing exposure
- building emissions
- transport emissions
- innovation and futureproofing.

2 Applying an Air Quality Positive approach

2.1 Masterplanning and development briefs

2.1.1 As a minimum, the guidance in section 3 should be followed in the development of relevant masterplans and development briefs to identify measures and approaches that have the potential to benefit local air quality, at an appropriate strategic or area-wide level.

2.1.2 Where possible, these plans should consider the phasing and timing of future key infrastructure delivery, such as energy centres, heat networks and transport. This is to ensure delivery in a way that secures the most beneficial outcomes to air quality. Where full build-out will take many years, it may also be necessary to consider intermediate and transitional phases of infrastructure delivery; and the implementation of measures to prevent negative impacts to air quality in the short term.

2.1.3 These plans should provide a framework within which individual sites within the masterplan or development brief can reinforce and enhance the Air Quality Positive approach, to ensure the benefits and principles are not lost during the subsequent development of individual plots of land. This may be achieved through a design code or phasing strategy. An AQP Statement should be produced to form part of an evidence base for any such plan (see section 4).

2.2 Planning applications

2.2.1 This guidance provides examples and best practice to inform the preparation of statements for developments taking an Air Quality Positive approach.

Full planning applications

2.2.2 Full planning applications for large-scale developments subject to an EIA require the most specific and detailed commitments to Air Quality Positive measures. These applications must be accompanied by an AQP Statement, which should be submitted as part of the EIA at the planning application stage (see section 4).

2.2.3 Air Quality Positive measures that are fundamental to the design of a development, are relevant to the monitoring of the application, or seek further details that may potentially change are expected to be secured through conditions or legal and binding agreements, and enforced where necessary (see London Plan paragraph 9.1.15).

2.2.4 Consideration should be given to providing a legal mechanism – e.g. section 106 or 278 agreements – to secure off-site measures where appropriate, such as off-site infrastructure improvements or post-completion monitoring.

Outline planning applications

2.2.5 Outline planning applications for large-scale developments subject to an EIA must be accompanied by an AQP Statement that details how measures will be secured in subsequent reserved matters.

Central Activities Zone (CAZ)

2.2.6 As per London Plan Policy SD4, particular attention should be given to large-scale development proposals in the CAZ. Such proposals should address issues relating to climate change and the urban heat island effect; and set out practical measures to improve air quality through an Air Quality Positive approach.

Where an AQP Statement has already been produced

2.2.7 Where an application is made for a site that already has an AQP Statement approved (for example, for an adopted site brief, adopted masterplan or granted outline permission), this should be updated to reflect the specifics of the application in terms of addressing Air Quality Positive measures; and resubmitted as part of the EIA at the planning application stage. The AQP Statement should:

- show how the relevant approaches and measures have been followed through, and implemented in the application
- highlight any areas of change or variation; the potential impacts of these changes; and how these have been mitigated or addressed
- highlight any detailed consideration that was absent at the earlier stage, which could impact on delivery of Air Quality Positive; and detail the potential impacts of these changes, and how these have been mitigated or addressed.

2.2.8 If the application is in accordance with the original AQP Statement and there are no additional detailed matters that need to be addressed, a summary statement outlining how the proposed measures are being delivered is sufficient.

2.2.9 Where full or reserved matter applications deviate significantly from those at the outline stage, it will be necessary to submit an updated AQP Statement to show that air quality conditions are at least as good as, if not better than, initially assumed. It should also be shown that any changes to the application do not prejudice the ability of subsequent phases to implement an Air Quality Positive approach.

3 Identifying measures and approaches

3.1 Minimum requirements

3.1.1 This section outlines the measures and approaches that should be considered in order to meet the requirements of paragraph 9.1.13 of the London Plan.

3.2 Better design and reducing exposure

3.2.1 A key element to achieving an Air Quality Positive-compliant development or masterplan is using the design and layout of a development or plan area to improve the dispersion of air pollution. The approach should consider how the design can promote or create better air quality, and reduce exposure to pollution in the public and private spaces – day and night, and throughout the year.

Buildings

3.2.2 The design of buildings within a site has a significant impact on air flow, and therefore on the dispersion of pollutants. The following approaches can help optimise development design to maximise air quality benefits:

- optimising site layout, locating the most sensitive land uses, such as schools, nurseries and residential dwellings, in less polluted parts of a site
- avoiding the creation of street canyons, which may result in an accumulation of air pollution by restricting dispersion, and encouraging air flow where possible
- using building form, such as angles and stepped façades, to improve dispersion of pollution.

3.2.3 When considering design measures, care should be taken to consider unintended consequences – for example, high or uncomfortable wind speeds; creation of inaccessible green spaces; poor public realm; fragmented streetscape; poor-quality soundscape, etc.

Transport infrastructure and connectivity

3.2.4 Both the design of transport (e.g. highway and public space, site layout, parking and entrances) and transport links themselves have an impact on emission sources from transport; and provide an opportunity to deliver greater modal shift toward sustainable transport, which is necessary to deliver Air Quality Positive outcomes. The following design approaches can help to achieve this:

- direct and attractive routes to access and move around the site on foot and cycle, that are more convenient than using a private vehicle and can be used 24 hours a day – this encompasses, for instance, low-car or car-free development
- segregated cycle provision that is well integrated into the wider area; and key cycle network routes and destinations
- 'car as guest' road layouts, with pedestrians and cyclists having right of way and limitations on vehicle penetration into a development
- junctions and transitions between different pedestrian and cyclist routes prioritising sustainable transport
- modal filters, including those with bus gates/filters where appropriate
- cycle parking and secure storage facilities that go beyond London Plan Policy T5 as a minimum; meet London Cycling Design Standards; and are at least as convenient as any car parking provision
- separation of highway space for vehicles from sensitive receptors to air pollution, including pedestrians and cyclists, entrances to buildings, and public spaces and play areas
- smooth, wide and clear pavements to enhance accessibility
- facilities for cargo cycles and micro-consolidation services to encourage smarter delivery practices, and reduce emissions from freight and servicing
- provision of sufficient and suitably located land for the development of the current and expanded public and active transport system, supporting London Plan Policy T3.

3.2.5 Development proposals and masterplans should adopt the Healthy Streets Approach and consider both the location and the function of highway space at an early stage, prioritising strategies that enhance access and connectivity for sustainable modes of transport. Proposals should include detailed consideration of how walking, cycling and public transport routes are convenient and attractive to use 24 hours a day; prioritised over car use; and link sensibly to the wider network and important destinations. The allocation of space for both parked and moving vehicles should also be minimised and designed to protect vulnerable road users; make sustainable transport modes convenient; and separate modes of transport that pollute from sensitive receptors on the site to reduce exposure to poor air quality.

Public and green spaces

3.2.6 To reduce exposure to air pollution, outdoor areas such as parks and public spaces should be located in areas where there are already low pollutant concentrations; or where the development will create the conditions for low pollutant concentrations.

3.2.7 Well-considered use of green infrastructure may also form part of Air Quality Positive proposals, and should be considered in line with Using Green Infrastructure to Protect People from Air Pollution guidance, the Urban Greening Factor LPG, and London Plan Policy G5 Urban Greening – Part (C).

Land uses

3.2.8 Applicants must consider the layout of land uses in relation to one another. Potential off-site sources of emissions may include roads and railways; neighbouring energy centres; industry (light or heavy); and energy from waste facilities, as well as direct emissions from the heating and energy systems of nearby buildings. The location of these elements within or near the development site or masterplan can have a significant impact on the dispersion or accumulation of pollutants. This includes, for instance, the height of exhaust flues, and their relationship to host or surrounding buildings.

3.2.9 These issues of land use should normally be considered holistically, alongside other key design considerations such as density. Failure to consider the layout of land uses at an early stage may create issues that are difficult to address once the design and layout is fixed. For outline applications, mechanisms will also need to be put in place to ensure that subsequent detailed designs do not undermine or reduce the expected outcome. For example, changes in detailed designs could include the re-orientation or relocation of buildings, roads or emission sources in a way that increases exposure, which must be avoided (see section 2.2).

3.3 Building emissions

3.3.1 Building emissions primarily arise from heat demand. The policy framework for energy infrastructure is set out in London Plan Policy SI 3. To achieve Air Quality Positive, developments for which an energy masterplan is in place or is being produced, or where there is an existing heat network, should seek to reduce or eliminate energy centre emissions by:

- undertaking measures to ensure that energy systems will achieve low or zero-emissions of air pollutants
- seeking opportunities to provide low or zero-emission heat to surrounding areas beyond the site boundary, both where there are

existing housing, commercial or other uses, or where new developments are planned

- future-proofing heating and energy systems to ensure there is a plan in place to manage growth and new connections without creating additional emissions.

3.3.2 Where the initial energy strategy includes combustion-based heat, future-proofing should include the possibility to transition to a zero-emission heating system in the future. Where combustion appliances are unavoidable, consideration should be given to instituting a programme of emission testing to ensure that the installed system functions as expected. The Environment Agency has developed simplified standards for monitoring emissions from medium combustion plant, which should be used as a point of reference.

3.3.3 Opportunities to eliminate or reduce emissions of $PM_{2.5}$ from sources outside of heating and energy sources should also be considered – such as those produced from commercial cooking – in order to help achieve World Health Organization targets for particulate matter (see London Plan paragraph 9.1.2).

3.4 Transport emissions

3.4.1 Applicants should examine how their developments can positively influence travel behaviour in the surrounding area. Consideration should be given to the character and connectivity of the area around the clock, as well as existing and proposed land uses, and how these affect travel patterns. Car-free schemes should become the norm where appropriate. Furthermore, safe and convenient access to, and use of, the site by walking and cycling, both day and night, should be prioritised, so that they become the preferred option for access to and around the site.

3.4.2 Adopting smarter delivery practices (such as consolidation services and micro-consolidation services, or scheduling deliveries at quieter times of day or night) and measures to encourage clean transport (such as cargo cycles and zero-emission vehicles) should be used to reduce emissions from freight, deliveries and servicing. Electric-vehicle (EV) charging infrastructure should be provided.

3.4.3 The Air Quality Positive approach to transport can be secured through travel plans, legal agreements (including section 278 agreements); planning conditions; and evidence of integration into wider approaches, such as the Healthy Streets indicators. The key elements of travel plans needed to secure Air Quality Positive should be identified (including the ways in which their successful implementation can be objectively measured) and secured through conditions or legal agreements.

3.5 Innovation and futureproofing

3.5.1 This guidance is not designed to represent an exhaustive list of measures to support an Air Quality Positive approach. The Mayor seeks to encourage new and innovative solutions to improve air quality. As well as exploiting new and emerging low and zero-emission technologies, innovation can include enhancing and extending best practice from elsewhere, or using a wider range of analysis techniques to improve understanding of the air pollution environment. AQP Statements should consider and explore new and emerging approaches and technologies.

3.5.2 Where innovative approaches are being considered, it will be beneficial to consult on these in detail with the local planning authority at an early stage. As experience with Air Quality Positive developments grows, the Mayor will publish case studies highlighting innovative approaches that can be used elsewhere.

4 Air Quality Positive Statement

4.1 Purposes of the statement

4.1.1 The AQP Statement must demonstrate how all aspects of a development – including the buildings, public spaces, landscaping and infrastructure – will lead to beneficial outcomes for air quality. Compiling the statement should be a continuous process throughout the design of the development.

4.1.2 The AQP Statement should be submitted as part of an EIA, alongside or as an appendix to the Environmental Statement. It should not duplicate information already contained in other documents, such as that contained in the air quality assessment or Environmental Statement. It should instead act as:

- a guide to understanding how air quality has influenced the decision-making
- a document of reference indicating where to find the supporting information in the wider application or evidence pack
- a list of the measures that need to be taken to secure the expected outcomes.

4.2 Minimum requirements

4.2.1 The AQP Statement will vary considerably between schemes, but, in general, an AQP Statement will be deemed compliant with London Plan Policy SI 1 if it demonstrates how the proposal will maximise benefits to air quality and mitigate exposure to air pollution using the following criteria:

- it meets all the minimum content requirements outlined in Table 4.1
- there is evidence that air quality considerations have informed the design of the development
- the reasons for undertaking each measure are justified and appropriate to deliver benefits to air quality and/or a reduction in exposure to air pollution
- the expected benefits to air quality are backed up by reasonable evidence
- justification and evidence to support circumstances where measures have not been implemented, but could reasonably be expected

- there is suitable evidence that measures are incorporated into the development application, i.e. evidence of assessment and/or reporting
- there is a realistic mechanism to ensure the measures will be secured
- there is a suitable implementation and monitoring plan for longer-term targets.

4.3 Structure of the statement

4.3.1 The statement should contain all the elements detailed in Table 4.1, below.

Table 4.1 AQP Statement structure

Statement section	What to include
Introduction	• Description of the development • Method statement
Constraints and opportunities	• Summary of site air quality constraints and opportunities • Map of constraints and opportunities
Measures adopted	• Matrix of adopted measures that will benefit air quality and minimise exposure to poor air quality on the site • Rationale for adoption/non-adoption of measures • Glossary of technical evaluations and assessments that have informed the adopted measures
Implementation and monitoring	• Consultation • Implementation plan covering how measures will be secured, e.g. against variation in the future, and actions to be taken if the predicted outcomes are not achieved • Monitoring plan

Introduction

4.3.2 The introduction should provide:

- the planning description of the proposal
- any information on phasing, such as whether the development is part of a larger masterplan or phased development; or whether further phases will come forward – and if so, when
- the method statement, providing a summary of the design process and how an Air Quality Positive approach has influenced the development; this can include:
    - details on meetings and workshops
    - how preliminary work has informed the final proposals
- references to any supporting technical documents (such as the energy statement or transport assessment) and where these can be found in the application pack
- where preliminary assessment has identified potential problems arising from existing or planned nearby developments, developers should apply the 'agent of change' principle and may wish to seek cooperative offsite approaches to mitigation.

Constraints and opportunities

4.3.3 This section should provide evidence of how the air quality context of the site has informed the design process, including:

- a map of the site
- a summary of its air quality constraints and opportunities
- relevant designations (Air Quality Management Areas, Air Quality Focus Areas, etc.)
- major off-site sources of air pollution (roads, railways, industrial sources, energy centres, incinerators/energy from waste, etc.)
- a general overview of off-site sensitive receptors (proximity to residential, schools, hospitals)
- proximity to energy networks
- transport infrastructure opportunities (rail/tube stations, cycle routes, etc.)

- site permeability and access (in terms of pedestrian, cyclist and vehicular, both day and night).

4.3.4 Qualitative tools can be useful for understanding the constraints and opportunities of a site. The Mayor's School Air Quality Audits toolkit provides one possible method for applying a rigorous qualitative approach (see Appendix A3.4).

4.3.5 The GLA has recently published an updated Air Quality Guide for Public Health Professionals to be shared with public health officers in the London boroughs. These contain borough-specific information on air pollution levels, including around priority sites such as schools, hospitals and care homes. This will enable effective local responses through setting out knowledge, recommendations or approaches for action. The documents have been tailored to support and enhance collaboration and public health leadership to address air pollution.

4.3.6 Early discussions with an Environmental Health Officer may also be helpful for identifying specific local pollution sources to be considered during the design stages.

Measures adopted

4.3.7 The range of measures adopted and the reason for adoption should be summarised in a matrix, using the template below.

Table 4.2 Air Quality Positive matrix template

Measure	Summary of the measure	Reason for undertaking measure	Expected benefits	Assessment and reporting[2]			How this measure will be secured
				Methods	Quantitative	Qualitative	
Better design and reducing exposure							
Building emissions							
Transport emissions							
Innovation and future-proofing							

4.3.8 An example matrix is provided in Appendix 2, and should be used as a benchmark for the level of detail that is expected to be provided. The matrix should break down measures by the four key themes listed in paragraph 1.2.3.

[2] Describe how the measure was assessed and determined to be effective quantitatively and/or qualitatively.

4.3.9 This should consider as many measures as possible, based on the constraints and opportunities at the site. If measures are not being implemented where they could reasonably be expected, the applicant should provide a rationale for not adopting these. Where the air quality benefits of a particular measure or approach are not evident in the supporting documentation alone, further description should also be provided. In addition to the matrix, free text description is also encouraged, should this be deemed necessary.

Implementation and monitoring

4.3.10 This section should detail any consultation with the local planning authority, the GLA, Transport for London (TfL) and other stakeholders that has informed the Air Quality Positive approach. This will include consultation on how measures are to be secured and implemented.

4.3.11 While the matrix will identify how specific, individual measures will be implemented, an implementation and monitoring plan should go into greater depth. It should outline tangible, specific and measurable targets and commitments, and describe how often these will be monitored and reported. Applicants should be able to answer, 'Who, what, when and how?' in the implementation and monitoring plan.

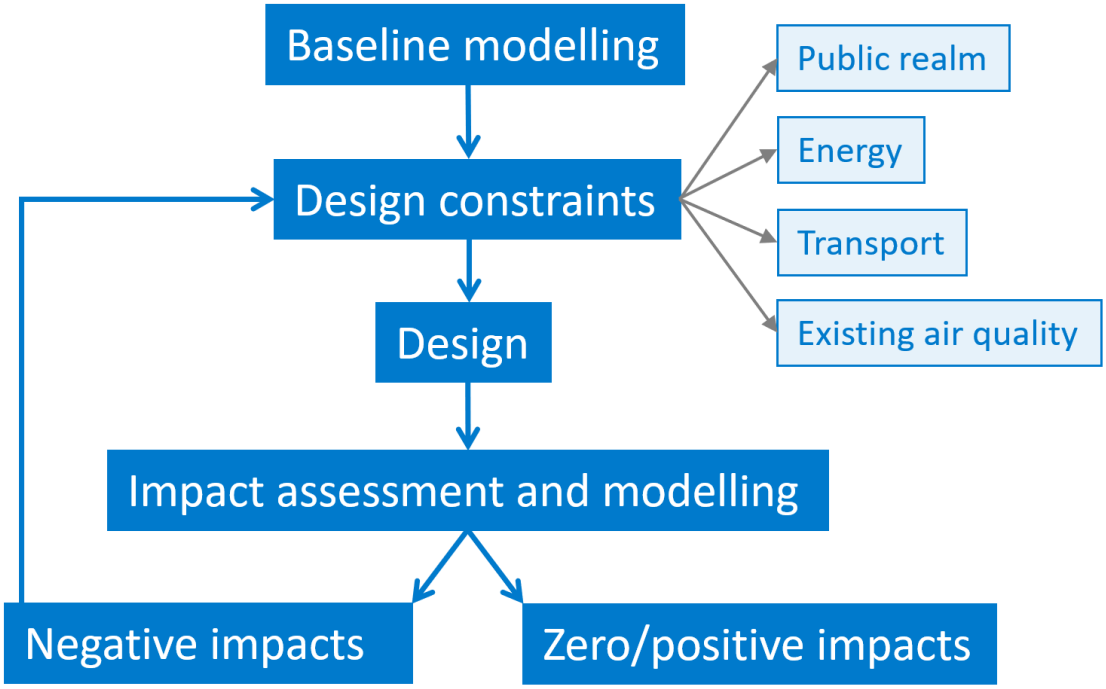
4.3.12 For outline developments, the implementation plan should include an explanation of how the Air Quality Positive approach will be secured at the detailed design and application stage.

4.3.13 This section must also detail the monitoring and reporting requirements that will ensure the measures are implemented as stated – for example, frequency of reporting, achievement of targets, fulfilment of section 106 agreements, etc.

4.4 Technical assessments

4.4.1 Applicants and their consultants are encouraged to use a variety of assessment tools in designing an Air Quality Positive development. These tools both provide evidence for an Air Quality Positive approach, and advance understanding of how the development is affected by the design process. An example approach has been illustrated in Figure 4.1.

Figure 4.1 Schematic approach to best practice for technical air quality assessments[3]



4.4.2 More detailed information on the range of technical assessment methods available is provided in Appendix 3.

[3] The list of design constraints are examples of conditions that may impact the opportunities to improve air quality or reduce exposure across the development as a whole; and that may need addressing under any of the Air Quality Positive themes. The list is not exhaustive, and each site may present a different range of opportunities.

Appendix 1 Mayor of London Order (2008)

A1.1.1 In this London Plan Guidance, 'large-scale development' refers to planning applications that are referable to the Mayor under the following categories of The Town and Country Planning (Mayor of London) Order 2008 and subject to an EIA:

Table A1.1 Applicable Categories of The Town and Country Planning (Mayor of London) Order 2008

Category	Description
Category 1A	Development which comprises or includes the provision of more than 150 houses, flats, or houses and flats.
Category 1B	Development (other than development which only comprises the provision of houses, flats, or houses and flats) which comprises or includes the erection of a building or buildings: (a) in the City of London and with a total floorspace of more than 100,000 m^2 (b) in Central London[4] (other than the City of London) and with a total floorspace of more than 20,000 square metres; or outside Central London and with a total floorspace of more than 15,000 m^2.
Category 2C: Paragraph 1, parts (a) to (f)	Development to provide: (a) an aircraft runway (b) a heliport (including a floating heliport or a helipad on a building) (c) an air passenger terminal at an airport (d) a railway station or a tram station (e) a tramway, an underground, surface or elevated railway, or a cable car (f) a bus or coach station.

[4] 'Central London' is defined in the Mayor of London Order.

Category	Description
Category 2C: Paragraph 2	Development to alter an air passenger terminal to increase its capacity by more than 500,000 passengers per year.
Category 2C: Paragraph 3	Development for a use which includes the keeping or storage of buses or coaches where: (a) it is proposed to store 70 or more buses or coaches or buses and coaches; or (b) the part of the development that is to be used for keeping or storing buses or coaches or buses and coaches occupies more than 0.7 hectares.
Category 2D	Waste development which does not accord with one or more provisions of the development plan in force in the area in which the application site is situated and which falls into one or more of these sub-categories: (a) it occupies more than 0.5 hectares; (b) it is development to provide an installation with a capacity for a throughput of more than: (i) 2,000 tonnes per annum of hazardous waste; or (ii) 20,000 tonnes per annum of waste.

Appendix 2 Air Quality Positive matrix

An example matrix of Air Quality Positive measures is provided in Table A2.1, which aims to provide a starting point for how to summarise and report on the measures employed in order to achieve an Air Quality Positive-compliant development. This example demonstrates the level of detail required for each measure, but the number of measures included can vary.

Table A2.1 Example measures in an Air Quality Positive matrix

Measure	Summary of the measure	Reason for undertaking measure	Expected benefits	Assessment and reporting			How this measure will be secured
				Methods[5]	Quantitative	Qualitative	
Better design and reducing exposure							
Localised low traffic neighbour-hood	The proposed development will close Elderfield Street[6] to through traffic, except for pedestrians,	Elderfield Street suffers from excessive through-traffic and conflict with pedestrians and cyclists. It is a narrow road with	Elderfield Street will be quieter, and more accessible and attractive to active travel	Air quality and transport assessments carried out, including surrounding roads.	Y	Y	Secured through the section 106, agreement and in agreement

[5] All references to other documents in this column should be accompanied by an appropriate citation or direction.
[6] This is a fictional street, included for the purpose of illustrating this guidance.

Measure	Summary of the measure	Reason for undertaking measure	Expected benefits	Assessment and reporting			How this measure will be secured
				Methods[5]	Quantitative	Qualitative	
	cyclists and local buses.	more appropriate through-routes nearby.	modes, with air quality benefits for new residential dwellings adjacent to the roadside.	Consultation with TfL on diverted bus route along Elderfield Street. Bus journey times reviewed two years after implementation.			with the local highways authority and TfL.
Road realignment	The proposed development will require road realignment to accommodate a new junction. An air quality assessment was carried out to inform the design and improve air quality for	The realignment was necessary to accommodate the development. Consideration has been given to the optimum design of the revised junction.	Lower concentrations of pollutants at sensitive receptors.	Air quality assessment carried out.	N	Y	Secured through the section 106 agreements, and in agreement with the highway authority.

Measure	Summary of the measure	Reason for undertaking measure	Expected benefits	Assessment and reporting			How this measure will be secured
				Methods[5]	Quantitative	Qualitative	
	existing and proposed receptors.						
Building design	The proposed development has been designed to avoid creating a street canyon on High Street,[7] and to include building forms that aid dispersion.	Reduce the potential to increase pollutant concentrations on High Street.	Reduced exposure to high levels of pollutants for new and existing residents of High Street.	CFD modelling carried out to assess the effect on High St showed a 10 per cent reduction in pollutant concentrations. The design is described in the design and access statement.	Y	Y	Secured through approved plans.

[7] This is a fictional street, included for the purpose of illustrating this guidance.

Measure	Summary of the measure	Reason for undertaking measure	Expected benefits	Assessment and reporting			How this measure will be secured
				Methods[5]	Quantitative	Qualitative	
Ventilation strategy	Passive ventilation strategy on all habitable rooms following re-siting of buildings away from roadside.	Acceptable air quality is provided to future residents without requirement for mechanical ventilation (cooling hierarchy).	Future residents will experience acceptable air quality without recourse to energy-intensive ventilation systems.	Air quality assessment shows air quality acceptable for future residents. Ventilation strategy report. Design informed by preliminary air quality assessment and explained in DAS.	N	Y	Secured through approved plans.
Further measures	*(Complete if necessary)*						
Building emissions							

Measure	Summary of the measure	Reason for undertaking measure	Expected benefits	Assessment and reporting			How this measure will be secured
				Methods[5]	Quantitative	Qualitative	
Energy Strategy	The heat demand for the scheme will be met using communal air source heat pumps in combination with peak gas boilers; and will include a heat exchanger for future connection to the nearby district heat network.	The Energy Strategy sets out the rationale for the measure and quantifies the impact on NOx emissions compared with other options such as combined heat and power (CHP).	The selected option will meet the carbon-emission targets but will also deliver a 95 per cent reduction in on-site NOx emissions, as compared to connection to a standalone energy centre with CHP/boilers.	Energy strategy.	N	Y	Delivery is subject to conditions and/or section 106 agreement.
Further measures	*(Complete if necessary)*						
Transport emissions							

Measure	Summary of the measure	Reason for undertaking measure	Expected benefits	Assessment and reporting			How this measure will be secured
				Methods[5]	Quantitative	Qualitative	
Rapid EV charging hub	A rapid charging hub for 10 vehicles will be fully funded and installed prior to the opening of Phase 2 (retail and commercial) of the development. This will take account of best-practice design principles.	Additional rapid EV charging capacity will improve local access to rapid charging infrastructure, and increase accessibility of EV use. The hub will be delivered to coincide with the opening of the retail element where short-term parking is more likely.	Increased availability of suitable charging infrastructure will incentivise EV use which will help to reduce tailpipe emissions from road traffic in the future.	EV charging hub is designed into approved plans.	Y	N	Delivery is subject to section 106 agreement.
Sustainable transport strategy	A sustainable or Healthy Streets transport strategy has been carried out on on-site and off-site routes covering	Report against the TfL Healthy Streets indicators to increase the attractiveness of walking and cycling.	Reduced emissions associated with increased walking	Transport Assessment.	Y	N	Cycling and walking infrastructure secured by approved

Measure	Summary of the measure	Reason for undertaking measure	Expected benefits	Assessment and reporting			How this measure will be secured
				Methods[5]	Quantitative	Qualitative	
	different times of day and night across the week.		and cycling for short journeys.				plans or conditions.
Car park leasing	100 per cent of on-site parking spaces will be leased only to owners of low or zero-emission vehicles.	Encourage the uptake of low or zero-emission vehicles, and reduce emissions associated with private vehicle use.	Reduced emissions associated with private vehicle trips, and increased uptake of low-emission vehicles.	Travel Plan.	Y	N	Car park leasing plan to be secured by section 106 agreement.
Further measures	*(Complete if necessary)*						
Innovation and future-proofing							

Measure	Summary of the measure	Reason for undertaking measure	Expected benefits	Assessment and reporting			How this measure will be secured
				Methods[5]	Quantitative	Qualitative	
Zero-emission generators	Emergency life-safety generators will use zero-emission gensets.	Diesel generators are high NOx and particulate matter emitters, and contribute to background pollutant concentrations; alternatives are now available.	Reduced contribution of the building to background pollution and pollution hotspots.	Air quality assessment showed impact of diesel generator.	Y	Y	Secured by condition.
Further measures	*(Complete if necessary)*						

Appendix 3 Technical assessments

A3.1 Overview

A3.1.1 The fundamental determinants of exposure to poor air quality are easily understood. How much pollution is there? Where is the pollution likely to concentrate, and where are people expected to be? However, the relationships between these determinants are complex; understanding how the development contributes and responds to each of them will usually require a variety of technical assessments.

A3.1.2 The traditional approach, where a development is tested against specific pollution thresholds after the major design work is complete, is unlikely to be sufficient for many Air Quality Positive developments.

A3.1.3 Developers and their consultants are encouraged to use a variety of assessment tools to understand the air quality impact of the development throughout the iterative and detailed phases of design.

A3.2 Dispersion modelling

A3.2.1 Dispersion models, such as the Atmospheric Dispersion Modelling System and the American Meteorological Society/Environmental Protection Agency Regulatory Model, are widely used for air quality assessments in support of planning applications. These modelling packages are continuously being developed; consultants working on these should keep their knowledge up to date, and ensure that they are able to use advanced features that may provide additional information relevant to a development's design.

A3.2.2 Dispersion models can also be used early in the design process to help describe the existing air quality environment within and around the development site, informing the discussion of constraints and opportunities.

A3.2.3 During the design process, dispersion models can be used to understand the air quality impacts of different design options. This can inform decisions on how to progress to more detailed stages of design.

A3.3 Advanced analysis tools

A3.3.1 A limitation of the most common dispersion models is that they can struggle to describe how complex built environments interact with very local effects on pollutant concentrations.

A3.3.2 More advanced air quality models are in development, and these may be used where appropriate. Alternatively, computational fluid dynamics models and wind tunnel or microclimate models can be used to aid

understanding and describe how the built environment may affect pollutant dispersion and accumulation. This is especially applicable in the case of larger, complex developments, or tall buildings, which can have major impacts on the local microclimate.

A3.3.3 Air quality professionals should ensure they are aware of how best to use these tools to supplement and enhance understanding gained through dispersion modelling.

A3.4 Qualitative tools

A3.4.1 It is not always possible to fully quantify the impact of a development on air quality, nor to numerically describe likely patterns or determinants of exposure. Nor is it realistic to expect every possible design iteration to be subject to detailed air quality modelling.

A3.4.2 The Mayor's Schools Air Quality Audit programme pioneered innovative approaches to robust qualitative analysis of air quality at the local scale. Although not fully transferable to development planning, the toolkit produced contains a number of key themes and ideas that can be applied to qualitative assessment, interpretation and the identification of measures.

A3.4.3 Air quality professionals are encouraged to maintain a working knowledge of qualitative methods and how to combine them with quantitative analyses.

A3.5 Measuring and monitoring

A3.5.1 Concentrations of air pollutants in the real world can be measured with a variety of instruments depending on the density, level of accuracy and purpose of the monitoring campaign. Direct air quality monitoring is not, however, an alternative to action and should not be used as a "mitigation" for avoidable impacts.

A3.5.2 For development management purposes, monitoring is likely to be most useful as a way of either: testing assumptions or models of local air quality at the baselining stage; or monitoring and promoting the success of the scheme. Monitoring should happen at different times of the day, week and month to ensure it accurately reflects how air quality changes during these different times. Use of low-cost indicative monitoring could enable access to high-resolution data; support boroughs in air pollution monitoring; and demonstrate a willingness to be transparent about a development's impact on local air quality.

A3.5.3 Measures proposed as part of the Air Quality Positive approach are expected to be tangible, specific and measurable. Wherever possible, the AQP Statement should set out how success will be measured, but this will not always be in terms of direct ambient pollution monitoring. For instance, a proposal to incentivise cycle ownership and reduce reliance on private

cars is more directly measured by counting how often the incentive is accessed than by measuring ambient air quality.

A3.6 Other assessments

A3.6.1 EIA developments and masterplans are often subject to a variety of analyses that may contribute to understanding how the proposals affect local air pollution. For example, wind comfort assessments can provide important information about air flows; and, where significant changes to traffic flows are expected, detailed traffic modelling can provide information about congestion and queueing.

A3.6.2 The outcomes of these analyses are unlikely to yield quantitative information about air quality. Air quality professionals should consider how best to interpret them qualitatively.

A3.6.3 EIA developments are likely to contain a variety of information useful to understanding how the development interacts with air pollution. In particular, the “cumulative impacts” section of an EIA can indicate where there are specific issues that need to be dealt with in terms of air quality.

Equality Impact Assessment (EqIA) for London Plan Guidance

London Plan Guidance:	Air Quality Positive
Teams involved:	London Plan team and Air Quality team
Date:	20 September 2022

1. Please provide an outline of the guidance, who it is aimed at and any key issues to be aware of.

The Air Quality Positive (AQP) approach aims to maximise the benefits to local air quality in and around significant development site or masterplan areas; and minimise exposure to existing sources of poor air quality. It encourages planners, designers, architects and air quality experts to actively seek ways to achieve the best possible outcomes from their developments in terms of air quality; and to go beyond simply meeting the maximum threshold of allowable contribution to air pollution.

For large-scale development requiring submission of an Environmental Impact Assessment (EIA), it is expected that air quality expertise has been engaged throughout the design process in order to maximise the potential benefits. The AQP approach does not use a threshold in its assessment; it instead brings together a range of evidence in support of a planning application to show how air quality has been considered holistically, and how the proposal provides benefits to air quality.

London Plan policy SI 1 C states that masterplans and development briefs for large-scale development proposals subject to an EIA should be accompanied by an AQP Statement. These statements should demonstrate:

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

The guidance sets out: the minimum standards for an acceptable AQP Statement and how to apply the approach to different scales of development, and at different stages in the planning process (e.g. at the masterplanning stage versus at the detailed-application stage).

The guidance is aimed at local authority officers, developers, designers and air quality specialists.

The guidance, and the policy it elaborates on, form part of a wider set of integrated policies and interventions (including policies outside the planning system) to improve London's air quality.

2. Which of the Public Sector Equality Duty aims are relevant to the guidance and the impacts identified?

The Public Sector Equality Duty (PSED), set out at section 149 of the Equality Act 2010, is relevant to the guidance. Listed below are examples of how the guidance seeks to meet the three aims of the PSED:

1. *Eliminate discrimination, harassment and victimisation and other conduct prohibited under the Act.*

   The guidance builds on the London Plan policies, which aim to ensure that residents are not treated differently depending on where they live. All Londoners deserve to live in a place that has safe levels of air quality and where their quality of life is not impacted by air pollutants. Areas of high deprivation often have the poorest air quality and this guidance aims to address this imbalance by encouraging development, in all parts of London, to make an active contribution to improve air quality.

2. *Advance equality of opportunity between people who share a protected characteristic and those who do not.*

   The guidance aims to ensure that new large-scale developments make an active contribution to improving air quality in and around a development site or masterplan area; and minimise the exposure to existing sources of poor air quality. The guidance requires applicants to consider a development's impact on air quality throughout the design process. Through an AQP Statement, applicants of large-scale development are required to identify measures that contribute to the delivery of improved air quality. These measures come under the following four key themes:

   - better design and reducing exposure
   - building emissions
   - transport emissions
   - innovation and futureproofing.

3. *Foster good relations between people who share a protected characteristic and those who do not.*

   By requiring certain large-scale development to take an AQP approach throughout the design process, planners, architects and designers should identify opportunities to enhance access and connectivity for sustainable modes of transport that are prioritised over car use. Consideration of accessible walking, cycling and public transport routes that are attractive within the site can lead to increased social interaction within a community that fosters good relations between people who share a protected characteristic and those who do not.

Assessment

List aspects of the guidance that might affect particular groups

Guidance key aspects, chapter headings, theme etc	Particular group that could be affected
3.2 Better design and reducing exposure (buildings, roads and transport links, public and green spaces, land uses)	Black, Asian and minority ethnic people Pregnant people and maternity Disabled people Elderly people Women Residents in areas of high level of deprivation
3.3 Building emissions	Black, Asian and minority ethnic people Residents in areas of high level of deprivation
3.4 Transport emissions	Black, Asian and minority ethnic people Pregnant people and maternity Disabled people Elderly people Residents in areas of high level of deprivation
3.5 Innovation and futureproofing	Black, Asian and minority ethnic people Pregnant people and maternity Disabled people Elderly people Women Residents in areas of high level of deprivation

* It should be noted that the general policy requirement and principles are already required through the London Plan. This London Plan Guidance is providing further detail on how the policies should be implemented, and therefore further amplifying the effects.

Equality impacts, mitigating actions and justification (where applicable)

Group	Potential impact description What positive and negative impacts have been identified (known and potential) for particular groups? Refer to evidence (including engagement). Check the objectives from the IIA and the EqIA guide questions and use these where relevant to structure your answers. Check the EqIA elements from the original IIA and any subsequent assessments.	Relevant PSED aim (1, 2a, b or c, and/or 3)	Actions identified and/or justification For negative impacts, set out mitigating actions to minimise or eliminate negative impacts and any action plan. If negative impacts cannot be mitigated, provide **objective justification**. For positive impacts, consider how these could be maximised.	Assessment of equality impacts Score each impact as either: +2 Strong positive +1 Positive 0 Neutral - 1 Negative - 2 Strong negative Mixed or uncertain
Age (consider particularly children, under-21s and over-65s)	Positive: Improvements in air pollution will directly benefit both older and younger Londoners. Young people and older people are known to be particularly vulnerable to the health impacts of exposure to air pollution. As part of the wider policy framework designed to reduce air pollution concentrations across London, this guidance will disproportionately benefit those most vulnerable to the health impacts of pollution. The evidence suggests that although more vulnerable to the health impacts of air pollution, areas with the highest proportion of both younger and older people tend to be those with the lowest average pollution levels and vice versa.	2 (a) (b)	Actions to maximise impacts: The guidance specifically highlights facilities used most by younger or older people (schools, parks and medical facilities) for detailed consideration, with the objective of ensuring these are located where exposure to air pollution can be minimised.	+1

	The AQP approach also considers the growing recognition that traffic noise can have a negative impact on health and wellbeing. In children, noise pollution can impact on school performance, memory and concentration. By stating that proposals should include detailed consideration of how walking, cycling and public transport routes are not only attractive within the site, but also prioritised over car use and link sensibly to the wider network and important destinations, it asks for developments to support the reduction of car dependence where possible, and by extension the pollution and noise generated by excessive traffic. <u>Negative</u>: Elderly people may be more reliant on private vehicles, or less able to shift to active travel modes, and may be impacted by measures to reduce car use. Elderly people are also more likely to experience mobility issues. Placing buildings further from roads, or residential dwellings on upper floors of buildings, may make these less accessible to elderly people; please also refer to impacts on disability, as elderly people are more likely to be disabled than other age groups.		<u>Mitigation:</u> While those that use private vehicles may be impacted by measures to reduce car use, the AQP approach is clear that applicants should pursue other approaches to connectivity. These can include connecting the masterplan area or development site into the public transport network, as well as producing a travel plan for the area. Using a Healthy Streets Approach, advocated within the guidance, can also make it easier to use mobility scooters, which some elderly people may use. Lastly, for	

			those that can still drive, an increase in electric vehicle charging infrastructure, advocated by the guidance, is likely to make it more convenient to charge electric vehicles.	
Disability (consider different types of physical, learning or mental disabilities)	<u>Positive:</u> The AQP guidance states that development proposals and masterplans should adopt the Healthy Streets Approach and consider the location and function of roads at an early stage, prioritising strategies that enhance access and connectivity for sustainable modes of transport. Currently 65 per cent of disabled Londoners consider the condition of pavements to be a barrier to walking, and 43 per cent report that obstacles on pavements, such as unnecessary signage, advertising boards and other clutter, are a barrier to walking more. Those with physical disabilities will likely benefit from the inclusion of wider pathways that would make streets more accessible and pleasant. The AQP guidance also states that proposals should include detailed consideration of how walking, cycling and public transport routes are not only attractive within the site, but also prioritised over car use.	2(a) (b)		+1

	Well-designed travel routes can have a positive impact for people with mental disabilities. The short periods of walking and cycling associated with active travel have been shown to be beneficial to mental health, improving self-esteem, physical self-worth, mood and mindset, and reducing stress. Walking can reduce anxiety and depressive symptoms, and those who walk regularly – even for short periods – are significantly more likely to report better mental health than those who walk less. A development that encourages more sustainable alternatives to car use could also lead to reduced noise pollution from traffic, which can influence sleep, stress, anxiety, blood pressure and mental health. <u>Negative:</u> People with certain physical disabilities may be more reliant on private vehicles. The AQP approach encourages travel routes that reduce dependency on car use. Policies that favour certain modes of active travel, including emphasis on cycle parking and facilities, may also be perceived to favour able-bodied people. Overly restrictive parking and road designs could disadvantage people who rely on private vehicles to move around. Encouragement of residential and other sensitive uses to be located further from the roadside, including on upper floors of a		<u>Mitigation:</u> At the planning application stage, development proposals will be subject to policies within the relevant local plan and London Plan. As a result, development proposals will be assessed against Policies D5 (inclusive design) and D7 (accessible housing), which aim to ensure that developments are designed in a way that meets the needs of all Londoners. In addition, the London Plan parking policies (Policy T6) sets allowances for Blue Badge holder parking, even	

	building, could make certain developments less accessible for those who are less mobile.		within car-free developments. As a result, AQP developments are still obliged to provide disabled persons parking for Blue Badge holders. Cycle parking policies include provisions for oversized and adapted cycles to cater for people with differing abilities to cycle. Improved public realm and cycle facilities encouraged by the AQP approach may also incentivise cycling in groups where uptake is lower, including disabled people.	
Gender reassignment	<u>Positive:</u> No anticipated impacts. <u>Negative:</u> No anticipated impacts.			0
Marriage and civil partnership	<u>Positive:</u> No anticipated impacts. <u>Negative:</u> No anticipated impacts.			0
Pregnancy and maternity	<u>Positive:</u> There is evidence linking increased exposure air pollution with increased risk of miscarriage and stillbirth. There is also growing evidence that certain forms of air pollution can pass through the placenta and impact the health of the unborn child in the uterus. Reductions in exposure to	2 (a) (b), 3	<u>Actions to maximise impacts:</u> The guidance specifically highlights facilities used most by pregnant people, such as medical facilities, for detailed consideration with the objective of ensuring these: are located where exposure to air pollution	+1

	air pollution would therefore likely have additional benefits for this group. The guidance specifically highlights facilities used most by pregnant people, such as medical facilities, for detailed consideration. In particular, the guidance advocates that these: are located where exposure to air pollution can be minimised; and can be accessed by low-exposure routes. AQP also encourages public spaces to be located in areas where there are already low pollutant concentrations, or where the development will create the conditions for low pollutant concentrations. Safe, open, accessible and inclusive public spaces can provide more opportunities for social interaction. This is likely to have a positive impact on people who share the protected characteristic of pregnancy and maternity, including parents, as it may help to enhance their mobility. Please also see the section for “age”, above, for more details on the impact of air pollution on children. <u>Negative:</u> No anticipated impacts		can be minimised; and can be accessed by low-exposure routes.	

Race or Ethnicity (consider refugees, asylum seekers, migrants, gypsies and travellers)	<u>Positive:</u> There is little evidence of the susceptibility to the health impacts of air pollution between different ethnic groups. However, there is evidence on the differences in exposure, showing that Black African/Caribbean/British communities are proportionately more likely to live in areas where they are exposed to higher levels of nitrogen dioxide (NO_2). Respondents that identified as "Mixed/Multiple" and "Other" ethnic groups also live in areas where they are exposed to higher levels of NO_2. Improvements in air pollution are therefore likely to disproportionately benefit ethnic groups who are over-represented in areas of high pollution. In addition, the inclusion of well-considered green infrastructure within AQP proposals, as recommended by the guidance, can have a positive impact for those of Black, Asian and minority ethnic groups, who tend to have access to fewer green spaces. Areas that have almost no Black, Asian or minority ethnic residents have six times as many parks than those where more than 40 per cent of the population are Black, Asian or minority ethnic. <u>Negative:</u> No anticipated impacts.	2 (a)	<u>Actions to maximise impacts:</u> There is a strong correlation between areas of high pollution; areas with a high proportion of people from ethnic minority backgrounds; and areas of high deprivation. Please see the section for "people on low incomes", below, for more detailed consideration on whether it is possible to further enhance the positive impact.	+1

Religion or belief	Positive: No anticipated impacts. Negative: No anticipated impacts.			0
Sex	Positive: The AQP approach advocates for new public realm and green spaces to be located in areas that are less exposed to pollution. Often this means locating spaces away from roads and nearer homes and public facilities. Providing spaces that are closer to homes, schools and care homes can result in them being overlooked (eyes on the streets), making them feel safer and more inviting. This will have proportionally greater impact on women, who have reported higher levels of feeling unsafe when in London's public realm.[1] Negative: The use of green infrastructure as a barrier measure to air pollution, or placement of public space in enclosed areas away from roads (e.g. courtyards), may conversely reduce the perception of natural surveillance and increase the perception of danger for women.	1	Mitigation: Measures to increase the desirability of active travel, including safe, well-lit walking routes, will generally have a net-positive impact on the perception of danger among vulnerable groups, including women. Major applications will be subject to consultation with the Met Police's 'Designing Out Crime' officers, ensuring that the design of a	0

[1] UCL Urban Lab, Scoping Study – London's participation in UN Women's Safer Cities and Safe Public Spaces Programme, March 2020 (revised May 2020)

			development does not encourage crime or increase danger.	
Sexual orientation	<u>Positive:</u> No anticipated impacts. <u>Negative:</u> No anticipated impacts.			0
People on low incomes	<u>Positive:</u> The relationship between exposure to air pollution and income is complex. However, people living in the most deprived neighbourhoods are, on average, more likely to be exposed to high levels of air pollution. As a result, improvements in air pollution are likely to disproportionately benefit this group. Income is a strong predictor of car ownership in inner and outer London, with car ownership generally increasing as household income increases. This would suggest that people on low incomes in those areas could disproportionately benefit from well-designed travel routes for sustainable and public transport, which the guidance states should be considered in detail when taking an AQP approach. A development that takes an AQP approach to prioritise the inclusion of attractive walking, cycling and public transport routes over car use may also see a reduction in traffic noise, which	2 (a)	<u>Actions to maximise impacts:</u> Independent assessment of the impact of the suite of air quality policies in the London Environment Strategy (LES) (of which this policy is a part) found that improvements in air quality will be largest in the most polluted areas. As well as direct improvements to local air quality, the guidance asks developers to consider how their masterplans can enable local access to low emission heat and transport services. These will have direct benefits to local air quality beyond the development boundary.	+1

	disproportionately affects disadvantaged people in their homes and workplaces, as well as making walking, cycling and using public transport less pleasant. <u>Negative:</u> The AQP approach encourages developers to implement alternative measures to minimise emissions from developments, which may increase capital costs in a number of ways. Examples include alternatively fuelled heating systems, connections to heat networks, and installation of electric vehicle charging facilities. Increased capital costs may be passed on to occupiers. In addition, such measures may increase ongoing energy costs for future occupants, for example the preference for direct electricity compared with gas for heating and hot water.		<u>Mitigation:</u> The AQP approach encourages adoption of a number of measures early on in the design of proposals. Early incorporation of measures to mitigate air quality impacts can prevent costly 'add-on' mitigation measures being required at a later design stage, such as emissions abatement for energy systems. Measures can also help to minimise expenditure relating to planning obligations, such an emissions off-setting payments required to local planning authorities. Widespread adoption of alternative technologies (which may have higher capital costs initially) are also often likely to lead to a reduction of costs in the future.	

Overview of equality impacts

Using your findings from the table above, summarise the impacts for each group in the table below using the scoring listed above.

	Age	Disability	Gender reassignment	Marriage and civil partnership	Pregnancy and maternity	Race	Religion and belief	Sex	Sexual Orientation	People on low incomes
Guidance 1	+1	+1	0	0	+1	+1	0	0	0	+1

Consider whether to break the guidance down and introduce further rows in order to make clear different equality impacts for different aspects of the guidance.

Recommendation

Based your assessment, please indicate which course of action you are recommending to decision makers.

Outcome Number	Description	Mark with an X (more than one box can apply)
Outcome One	**No major change to the guidance is required** This EqIA has not identified any potential for discrimination or negative impact, and all opportunities to advance equality have been taken.	X
Outcome Two	**Adjustments to the guidance are required** to remove barriers identified by the EqIA or better advance equality.	
Outcome Three	**Justify and continue with the guidance** despite having identified some potential for negative impacts or missed opportunities to advance equality.	
Outcome Four	**Stop, rethink or abandon** when the EqIA shows actual or potential unlawful discrimination	

Monitoring

Monitoring will take place through the London Plan Annual Monitoring Report and wider monitoring of the Mayor's other strategies as well as part of reviewing the London Plan.

Appendix A: Evidence Reference and Content

London Plan IIA (including EqIA) and Addendums

Evidence

Age

Updated Analysis of Air Pollution in London, Aether, February 2017

The younger and older populations in London are particularly at risk given their greater susceptibility to the health impacts of air pollution. However, the more vulnerable under-19 and over-65 age groups are not disproportionately exposed to high levels of air pollution concentrations.

Healthy Streets for London: Prioritising walking, cycling and public transport to create a healthy city, Transport for London, February 2017

Noise pollution influences sleep, stress, anxiety, blood pressure and mental health. In children it can impact on school performance, memory and concentration.

Equality, diversity and inclusion evidence base for London, GLA Intelligence, June 2019

Evidence indicates that many London schools are in areas of above-average NO_2 concentration, with around 25 per cent located in areas where average NO_2 exceeds EU limits. This risk appears to be greatest for higher education and 16+ institutions, as well as independent schools and nurseries.

Disability

Healthy Streets for London: Prioritising walking, cycling and public transport to create a healthy city, Transport for London, February 2017

London's streets need to be welcoming to ensure that our communities prosper.

Currently 65 per cent of disabled Londoners consider the condition of pavements to be a barrier to walking, and 43 per cent report that obstacles on pavements, such as unnecessary signage, advertising boards and other clutter, are a barrier to walking more. Furthermore, there is growing recognition of the impacts of traffic noise on health and wellbeing. Noise pollution influences sleep, stress, anxiety, blood pressure and mental health.

The short periods of walking and cycling associated with active travel have also been shown to be beneficial to mental health, improving self-esteem, physical self-worth, mood and mindset, and reducing stress. Walking can reduce anxiety and depressive symptoms, and those who walk regularly – even for short periods – are significantly more likely to report better mental health than those who walk less.

Equality, diversity and inclusion evidence base for London, GLA Intelligence, June 2019

Disability is closely related to age: 13 per cent of the working-age population are disabled, versus 28 per cent of people aged 65 or over.

Gender reassignment

N/A

Marriage or civil partnership

N/A

Pregnancy and maternity

Air Quality and Health: Reviewing evidence and planning policy in London

(Still to be published – link to be provided soon)

Equality, diversity and inclusion evidence base for London, GLA Intelligence, June 2019

Outside of the home, the nature of London's built environment can support or form barriers to participating in city life. This is particularly relevant to those with pushchairs, who face barriers in accessing many services and buildings because of how buildings, spaces and places are designed and managed.

Race

Air Pollution Exposure in London: Impact of the Environment Strategy: Second Addendum Report: Further Analysis of Ethnicity and Exposure, Aether, April 2019

All ethnic groups benefit as a result of policies in the LES and ethnic groups currently most affected by poor air quality (non-White groups) benefit the most. Areas where White people are most likely to live on average see an average reduction in NO_2 concentrations of 46 per cent, whereas areas where non-White people are most likely to live see concentrations improve between 48 and 53 per cent.

Equality, Diversity and Inclusion Evidence Base for London, GLA Intelligence, June 2019

GLA projections estimate that, in 2019, 57 per cent of Londoners have a White British, White Irish or other White ethnicity, with the remaining 43 per cent having a Black, Asian or minority ethnicity.

Availability of green space is lower in more deprived areas and areas with a higher proportion of Black, Asian and minority ethnic residents, with children in London less likely to visit the natural environment than children elsewhere in England.

Religion or belief

N/A

Sex

Out of Bounds: Equity in Access to Urban Nature, Groundwork May 2021

Girls and young women often report feeling unsafe when spending time in public spaces such as parks and green spaces. A survey conducted by Girlguiding found that 41 per cent of girls aged 11 to 16 feel unsafe when they go outside, rising to 49 per cent of

young women aged 17 to 21. Meanwhile, 22 per cent of girls aged 11 to 16 said that they are often stared at and receive unwanted attention when they are outside, increasing to 41 per cent of young women aged 17 to 21. All these measures were higher for girls and young women who identify as disabled or LGBQ (Girlguiding, 2020).

Sexual orientation

N/A

People on low incomes

Equality, Diversity and Inclusion Evidence Base for London, GLA Intelligence, June 2019

Areas of greater deprivation tend to see high levels of air pollution. Research conducted on behalf of the GLA assessed where the population exposed to the highest levels of NO_2 concentration lived. This research found that this group tended to be concentrated in the most deprived parts of London. For example, almost one in five of people exposed to the greatest NO_2 concentrations live in the most deprived areas, despite only 9 per cent of London's population living in those places.

Travel in London: Report 12, Transport for London, 2019

Income is a strong predictor of car ownership in inner and outer London, with car ownership generally increasing as household income increases. Households with higher incomes are also more likely to own two cars.

Healthy Streets for London: Prioritising walking, cycling and public transport to create a healthy city, Transport for London, February 2017

There is growing recognition of the impacts of traffic noise on health and wellbeing. Noise pollution influences sleep, stress, anxiety, blood pressure and mental health. In children it can impact on school performance, memory and concentration. Traffic noise disproportionately affects disadvantaged people in their homes and workplaces, as well as making walking, cycling and using public transport less pleasant.

Gaps in Evidence

Please detail any areas identified as requiring further data or detailed analysis.

Appendix B: Engagement summary

Summary of protected groups engaged

N/A

Engagement record

Engagement undertaken which is relevant to the EqIA for example with specific community groups, or protected characteristic groupings, or to fill identified evidence gaps.

Event details	Specific groups represented	Key findings