

THE DRAFT LONDON PLAN

Examination in Public (EiP)

MATTER 74 – AIR QUALITY AND WATER INFRASTRUCTURE

CIBSE Response

Submitted 28th February 2019

Introduction

The respondent is **The Chartered Institution of Building Services Engineers (CIBSE)**.

The Chartered Institution of Building Services Engineers is the professional body that exists to:

'support the Science, Art and Practice of building services engineering, by providing our members and the public with first class information'

CIBSE members are the engineers who design, install, operate, maintain and refurbish the energy using systems installed in buildings, including homes, and are specifically trained in the assessment of heat loss from building fabric and the design of energy using systems for the provision of heating and hot water, lighting, ventilation and cooling and small power distribution in homes. Many CIBSE members work in the public sector in general and in higher education in particular.

CIBSE has over 20,000 members, of whom around 75% operate in the UK and many of the remainder in the Gulf, Hong Kong and Australasia. Many are actively involved in the energy management of commercial buildings for larger businesses, and so this consultation is highly relevant to us and to our members.

CIBSE is the sixth largest professional engineering Institution, and along with the Institution of Structural Engineers is the largest dedicated to engineering in the built environment. Our members design, install, manufacture, maintain, manage, operate and replace all the energy using systems in buildings as well as public health systems.

As an Institution CIBSE publishes Guidance and Codes which provide best practice advice and are internationally recognised as authoritative. The CIBSE Knowledge Portal, makes our Guidance available online to all CIBSE members and is the leading systematic engineering resource for the building services sector. Over the last twenty-one months it has been accessed over 200,000 times, and is used regularly by our members to access the latest guidance material for the profession. Currently we have users in over 170 countries, demonstrating the world leading position of UK engineering expertise in this field.

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EiP Questions

Would the policies for air quality and water infrastructure assist in creating a healthy city in accordance with Policy GG3 and provide an effective strategic context for the preparation of local plans and neighbourhood plans? Are the individual policies and detailed criteria justified and necessary and would they provide an effective basis for development management? In particular:

a) Are the requirements in Policy SI1 clear and will they be effective in improving air quality whilst delivering the homes Londoners need in accordance with Policy GG4?

Relation to policy GG4

The homes Londoners need should be sustainable and not contribute to future problems such as poor health from air pollution (with associated costs on the health system, loss of productivity etc, let alone the health impacts themselves on Londoners). Policy SI1 on air quality is fundamental to the achievement of the objectives of policy GG3, Creating a Healthy City.

Justification of need

The problems associated with poor air quality are well-documented; the London air is well over recommended levels for exposure to several significant pollutants by the World Health Organisation. Furthermore, the planning system has a central role to play in this:

- first, because planning decisions such as transport infrastructure, site location and mix of uses influence the transport needs and modes, which are a key contributor to outdoor air quality; other decisions influenced by the planning system can also help, such as the incorporation of green infrastructure.
- second, because early site layout and building design decisions are an opportunity to influence future indoor air quality, a topic not currently addressed in Building Regulations (though it may be in the future, subject to the upcoming review of Building Regulations Part F). Overall site layout has a significant influence, for example, on the use of windows for ventilation, with obvious impacts on indoor air quality.

We therefore think a policy to minimise any negative impacts and to improve air quality is thoroughly justified.

Clarity and effectiveness of the current policy

We support the overall intent to improve air quality. However, as explained in our original response to the consultation, we note that the policy does not include specific objectives, which very much risks undermining its effectiveness and monitoring. It also makes it harder for those who wish to comply and deliver good outcomes to be clear what that requires. The proposed policy wording focuses on avoiding “further deterioration” and “preventing or minimizing increased exposure”, rather than having clear and measurable objectives for improvements. We welcome the addition of a reference to World Health Organization (WHO) guidelines in addition to legal compliance, however this is not in the policy itself, but only in the accompanying guidance (§9.1.1). We strongly recommend a policy with **more specific objectives**, ultimately with the ambition to align with WHO guidelines.

We note that **further guidance** will be produced on the requirements for “air quality positive” and “air quality neutral”. There is already some guidance available under the current London Plan and associated guidance documents, and therefore we do not think the lack of a full

definition at this stage should be a concern, as long as the guidance is produced in advance of the implementation of the London Plan.

Furthermore, while the policy mentions reducing exposure, it is focused on external air quality. We would recommend more attention to **indoor air quality**, given that current Building Regulations do not provide a comprehensive framework to address this, and given the time it will take to achieve objectives for external air quality.

To improve **policy effectiveness** and in addition to including set objectives, we would repeat here our recommendations made at the consultation stage:

Air **quality impact assessments** (AQA) often focus on assessing the impact on external air quality; their value could be improved if they were used to inform design proposals, with more attention given to mitigation measures for reducing exposure and reducing emissions, in collaboration with other disciplines. We therefore welcome §9.1.4 which encourages major developments to carry out preliminary AQAs, although this will only capture developments of a certain size.

It is debatable whether size of development should determine whether an AQA is required, as proposed under 3A. Small- scale sources can result in a significant cumulative impact. Furthermore, we think the requirement for an AQA could also be triggered by risk factors such as average ambient pollution in the local area, proximity to major roads or other sources of pollution, or risk profile of the future building occupiers (e.g. housing, health care facilities, care homes, schools).

A suggestion for major developments is that, instead of air quality being covered simply as part of the EIA, it should be addressed in an '**Air Quality Strategy**' document, with similar profile and status as Energy Strategies (which are produced to address policies SI2 and SI3). This could lead to significantly improved coordination between key design disciplines, and should contain at least the following information:

- Targets for air quality for the site, based on WHO limits and any site specific situations; these should include indoor air quality targets, and targets of polluting emissions.
- Strategy for meeting those targets, including specification of heating plant and equipment, such as boilers, CHP or heat pumps, etc, location of flues, opening requirements, filtration specification, provision of user guides, etc. Consideration should also be given to long-term ventilation plans so that, for example, if a development is currently proposed to be mechanically ventilated to allow high-level air inlets and filtration of the outdoor air, it may still have the capacity to be naturally ventilated in the future as London starts meeting its air quality objectives.
- Requirements for initial commissioning and testing, particularly of internal flues and distributed flue or ventilation systems serving more than one dwelling or demise within a building, and for maintenance and operation to ensure that the system actually delivers and continues to deliver what it is intended to (see below)
- Proposals for post construction monitoring (see below).

The key benefit of this document would be enabling councils and the GLA to produce guidance similar to energy strategy documents, and have a number of key metrics they could view to ensure compliance with policy.

Implementation: The current wording of policy and guidance makes no provision for how compliance with policy and with the recommendations of the Air Quality Assessment will be assessed and monitored. This should be addressed, including post-completion verification of commissioning (already a requirement of building regulations, but often neglected with significant implications for occupiers) measures such as emissions from major emission sources and verification of indoor air quality limits.

We recommend that post occupancy testing should be conducted on sample areas, particularly in uses such as residential developments and schools (e.g. 10% of apartments in a residential development, as for acoustics testing, or a percentage of floorplate in commercial buildings), with heating plant in full operation to ensure emissions from plant meet the required standards and indoor air quality standards meet recommended limits (i.e. WHO guidelines).

Operation & Maintenance manuals and building user guides should include a section on air quality to ensure occupants are aware of any systems in place to protect them from poor outdoor air, and the proper maintenance of those systems (e.g. filter class, replacement periods, etc.) Guidance to building users is already a requirement of building regulations, but is often neglected, and further emphasis on the importance of providing users with understandable guidance on their heating and ventilation systems and how they work would help to drive compliance with this fairly basic provision.

In particular, if air filtration is used in the development to comply with indoor air quality standards, there should be pre- occupancy testing to confirm suitable operation, and information must be provided to the future occupiers on the type of air filtration used, its location and how to operate and maintain it. Applicants should also confirm that the impact of filters has been taken into account in energy and carbon calculations (policy SI2), as this is often not the case.

b) Will Policy SI5 ensure adequate provision for water infrastructure and encourage a sustainable use of resources? Is the requirement to use the optional requirement of the Building Regulations justified?

Justification for the optional requirement of the Building Regulations

The need for better management of water resources is well evidenced, and addressing it is consistent with the national regulatory and policy framework. Not that it should be needed given this existing background, but to stress the point we would refer to the recent report by the Committee on Climate Change¹, which highlights the need for more ambitious water efficiency standards (recommendations 3 and 4).

This is particularly the case in London and the south-east, where there are growing concerns about availability of water per head, which would worsen in the future due to the combined effects of climate change and increased population. We would quote a 2017 report by the Committee on Climate Change in 2017: “*The north west of England and the Yorkshire and Humber region are projected to be highly susceptible to supply-demand deficits [by 2050], as well as London and the south-east*”², and a parliamentary enquiry in 2018: “*The problem is that the biggest consumers of water also happen to be situated in regions at greatest water stress and risk of drought. The average Londoner uses 164 litres of water per day (...) 14% more than the national average.*”³ Note - We are aware this is a higher figure than the 149 litres quoted in the draft Plan (§9.5.1) – the point is that London is already among the high users AND in a region at higher risk of drought.

¹ CCC, UK housing: fit for the future ? February 2019

² The Committee on Climate Change, September 2017, quoted in the parliamentary inquiry report “Bricks and Water”, 2018

³ Parliamentary inquiry report “Bricks and Water”, 2018

https://www.policyconnect.org.uk/sites/site_pc/files/report/1108/fieldreportdownload/brickswaterreport_wsbweb.pdf

We therefore believe the requirement to use the optional threshold of water efficiency is very much justified. Furthermore, we are not aware of evidence of impact on viability; we would refer to reports on this issue which were carried out in 2015 for the Mayor of London and thoroughly analysed both the evidence of need, and the impact on viability; they concluded the optional standards were justified on both grounds⁴ .

Other comments

Policy points (A), (B) and (E): as pointed out in our response to the consultation, we support the overall objectives but would welcome the introduction of clearer and more specific criteria, and more specific targets for improvements to the water environment. This would make policy more effective and easier to monitor.

END

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Please do not hesitate to contact us for more information on these responses.

⁴ Greater London Authority Housing Standards Review, 2015: Evidence of Need https://www.london.gov.uk/sites/default/files/housing_standards_review_-_evidence_of_need_david_lock_assoc_2015.pdf ; Viability Assessment https://www.london.gov.uk/sites/default/files/housing_standards_review_viability_assessment_2015.pdf