

Overheating Rebuttal - Appeal for Residential
Led Development at Land Formerly Known as
British Gas Works, Albert Road, New Barnet,
EN4 9BH

Appeal Ref: APP/N5090/W/21/3271077

LPA Ref: 21/3676/FUL

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Citystyle Fairview VQ LLP

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1. Introduction

- 1.1 This short rebuttal note has been prepared in response to the Rule 6 parties' evidence submitted in respect to the appeal for the residential led development at Land Formerly Known as British Gas Works, Albert Road, New Barnet, EN4 9BH (REF: 21/3676/FUL).
- 1.2 The rebuttal responds to the issue of the running costs of the different ventilation system and cooling provided to those homes requiring it to avoid overheating.

2. Running Costs

- 2.1 **Running Costs** - The issue of the increased cost of running the different ventilation and cooling system in those homes that require it was raised in the Proof of Evidence, (PoE), from Fiona Henderson of the New Barnet Community Association, (NBCA), and of Karen Millar, (NBCA).
- 2.1.1 Fiona Henderson 1.3.3 and 1.3.4 - *As a result, after the application had been submitted, active cooling units were introduced. Active cooling is the very last resort in the cooling hierarchy, will be expensive for residents and will mean that many units, which were at or only slightly above minimum space standards, now fail to meet these standards..... Buildings which increase energy needs through poor design do not help to achieve zero carbon. This is not a sustainable design*
- 2.1.2 Fiona Henderson – 8.3.7 - *The Overheating Assessment confirmed that around half the flats will require active cooling. In the London Plan (Policy SI 4) active cooling is seen as a last resort solution after appropriate orientation (and other design considerations) have been considered. In practice, where it has been installed in social housing, residents have been unwilling or unable to pay the additional electricity costs required to run cooling units and simply suffer the discomfort resulting from poor design.*
- 2.1.3 Karen Miller – 1.2.2 - *The problem is these very large cooling and ventilation units, as well as taking up valuable floor space, consume up to 1,376 Watts in cooling mode and 350 Watts the rest of the time, annually consuming over 1,800kWh of electricity. As these units are installed in all the affordable housing, the risk is the poorest residents will not be able to afford to switch them on given an estimated electricity cost of an extra £500+/annum plus replacement filters costing approximately £72/annum.*
- 2.1.4 Karen Millar – 3.3 - *The specification document for this unit CD 12.19 (page 5) identifies that the ComfoAir unit consumes up to 350 watts of power and the ComfoCool unit draws 1,026 watts. As such, when operating in cooling mode (which requires both units to be operating) the unit draws up to 1,376 watts and uses up to 350 watts all the rest of the time. My concern is that the use of these units could become prohibitively expensive to switch on for residents, especially as every one of the affordable housing units (shared ownership and London Affordable Rent) will have to be fitted with these units. By way of example, if the cooling is used for 8 hours per day for 6 weeks per year and with air circulation running 12 hours per day, 365 days per year, that would consume over 1,800kWh of electricity per annum, over and above the normal electricity usage. In addition, the specification for these units states that filters (two) should be changed every 6 months which are approximately £36 per set.*
- 2.1.5 Karen Millar – 3.9 - *In summary, due to the proposed location of the affordable homes on the site, alongside the railway line, the affordable housing tenants*

are disproportionately affected by the overheating and noise problems which can only be addressed by operating a mechanical ventilation and cooling system. This is expensive to run, potentially in excess of £500 per annum, in addition to the standard electricity usage. A change of design and orientation of the blocks with far fewer single aspect flats, could significantly reduce this impact on some of the poorest residents, something the community has drawn to the attention of the developer through alternative designs as presented to the developer in May 2021 CD 12.16 (pages 7-10). However, the developer has chosen not to reconsider the design, orientation, or the large number of single aspect flats, contrary to CD 5.1 London Plan Policy SI4.

3. Running Costs Rebuttal

- 3.1 The analysis undertaken by the Rule 6 parties is not reasonable. There are several errors, areas which have not been considered or where no justification has been provided for assumptions.
- 3.1.1 The mechanical ventilation with heat recovery (MVHR) system employed will have a peak ventilation load of 350W, but this will rarely, if ever, be required. According to the manufacturer, depending on the set-up, they would expect typical loads of 50W or less.
- 3.1.2 The assumption in the analysis from Karen Millar assumes that the ventilation system will run 12 hours a day, 365 days a year. It will actually run 24 hours a day, 365 days a year.
- 3.1.3 The other homes on the development will have continuous mechanical extract ventilation (MEV), which will also use energy, so this is not entirely additional energy required.
- 3.1.4 The MVHR systems recover warmth from extract air, which MEV systems do not. This will provide a significant saving in heating bills. According to the energy modelling team at Think Three, analysis of representative flats suggests a saving of around 1,000kWh per annum. At an average of 6p per kWh heat, that will be £60 per year.
- 3.1.5 The cooling element of the system does have a peak load of 1kW, but again, that will rarely be required and even when cooling will operate at a fraction of that most of the time.
- 3.1.6 The analysis of the extra cost works based on an electricity price of 28p per kWh. Although this is realistic as a current price it does not represent at all the long-term average, which in today's prices would be around 20 p per kWh, according to BEIS.
- 3.1.7 The estimate of additional £500 bills is not based on evidence and, as I have explained, is based on an incorrect understanding of how the systems work and speculation on how much the cooling system will run and power it will draw.
- 3.1.8 I do not provide a detailed estimate comparing the running costs because it would require detailed analysis and assumptions that would need validation. Using the calculation provided by Karen Millar, however, with more realistic numbers, yields the results below:

	Karen Millar Est.	Barny Evans Est.
Ventilation (kW)	0.35	0.05
hours per annum*	8,760	8,760
Cooling hours	336	336
Cooling load	1.03	1.03

p per kWh electricity	£0.28	£0.20
Cost per annum	£955	£157

*Updated to run all year round

- 3.1.9 Even ignoring the benefit from the heat recovery and the fact that all the homes will have mechanical ventilation, this shows that the additional running costs will be much lower than indicated in the proof submitted.
- 3.1.10 On the broader point of running costs, new homes are much cheaper to run than the average of the housing stock in the country. A study by the Home Builders Federation (HBF)* found that a new home is £435 per year less to run than the average of the housing stock. Even allowing for the saving being less in a flat, it is clear social housing tenants at Victoria Quarter will have much lower energy bills than the average across the housing stock.

*https://www.hbf.co.uk/documents/11628/33271_HBF_Report_final.pdf

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