PLANNING JUSTIFICATION REPORT

Job Reference:		Date:	
	10 Antrim Grove, NW3		21 October 2021
Subject:		**Rev.:**	
	Comfort Cooling		**B**
Issue:		**Our reference:**	
	Enforcement Appeal		10ANT-B3-GE211021

Introduction

Finkernagel Ross have been appointed to prepare this justification report to support the retrospective planning application in response to the council's enforcement notice ref EN10/0638 in connection with the installation of 3 no external heat pump units at 10 Antrim Grove, London NW3 4XR.

The report intends to place this installation within its physical context by accurately establishing the actual positioning of the units and assess their visibility as well as outlining improvements regarding their visual impact and appearance.

Furthermore, this report seeks to justify the need for cooling within the residential dwellings in accordance with London Plan Policy SI 4 and Policy CC2 of Camden's Local Plan and where such active cooling sits within the cooling hierarchy of the property.

Disclaimer

This report has been prepared based on information in form of documentation, photographs, dimensions, and written explanations that have been made available by the owner and appellant. These have not been checked or verified by Finkernagel Ross. Furthermore, due to a general lack of detailed information, reasonable assumptions had to be made to assess the property's overall services provisions and thermal envelope. The authors of this report do not accept liability for any unintended misinterpretation as a consequence of inaccurate or incomplete information relating to the property.

Documentation

This justification statement is to be read in conjunction with existing and proposed drawings (*10ANT-000, 10ANT-001, 10ANT-020, 10ANT-030, 10ANT-100, 10ANT-200, 10ANT-300*) and the *Acoustic Survey prepared by KP Acoustics*

Context

10 Antrim Grove is a semi-detached late Edwardian property located in in the Belsize Park Conservation Area. The property had been extended by a basement excavation in 2013/14 but was substantially destroyed by fire 2016 and subsequently rebuilt in 2017. Apart from the external walls which had stayed intact and have been carefully restored, as well as the basement structure, the whole of the house was reconstructed. As part of this reconstruction, which included all services, the heat pump units for the comfort cooling that are the subject of the enforcement, were installed in 2018.

Overview

It is understood that the fire in 2016 had such an impact on the property that it had to be completely re-built with only the existing external solid masonry walls left intact. As such, it is assumed that these works were carried out satisfying the building regulations current at that time (2016), including in particular provisions relation to Part L of the approved documents. In other words, while the external walls are unlikely to have been altered, all windows throughout are now double-glazed and the new insulated roof would meet the required U-values.

The air conditioning at the house has been installed to provide comfort cooling for the family during the increasingly hotter summer months. The system serves the main living areas in basement and on ground floor, and, especially, the bedrooms on first floor and second floor which extends into the roof zone. The external units of the AC system, which are the subject of the council's enforcement notice are two large and one small Daikin heat pumps as shown on the existing side elevation below.

Side Elevation (NTS)

The visual impact

The three external units have been installed on the side external wall of the property, at a height of approximately 1.9m to the underside to enable necessary access along that side alley to the rear garden. As the side alley is quite narrow they are mostly hidden from view as seen from the streets as one approaches the property from either side. However, when facing the property straight on the top of the units are visible, from the street.



Front of the property from three view points

Proposed mitigation measures

The acoustic report recommends an acoustic enclosure to mitigate any noise impact from the plant. It is hereby proposed for this to be implemented accordingly and to clad that enclosure with horizontal timber slats, to soften any visual impact as it closely relates to the existing fences in the vicinity. This would conceal the mechanical nature of these units and give it an appearance which is more congruent with the era of the property and it's immediate surrounding. It is furthermore proposed to re-hang the 3no heat pumps at a lower level on same façade so for them to be visibly fully concealed when viewed from the streetscape.

The cooling hierarchy

This chapter intends to demonstrate how the cooling hierarchy as it presents itself in the built conditions – not necessarily by design intent – addresses the key criteria set out in policy CC2 of the Camden Local Plan. As mentioned in the introductory chapters the evidence is based on reasonable assumptions about the property and how it was substantially rebuilt in 2017.

a) Minimise internal heat generation through energy efficient design

Whilst the original external walls were retained in the re-build of the house, the rest of the thermal building envelope – original windows and rear glazed screens on ground and basement level as well as the new roof – would meet required insulation values as stipulated in Part L of the approved documents at the time of construction.

The whole of the house is heated by low temperature underfloor heating with energy-efficient modern gas boilers. The new lighting installation which is based largely on LED technology reduces both energy consumption and heat generation.

b) *Reduce the amount of heat entering a building in summer through orientation, shading, albedo, fenestration, insulation and green roofs and walls*

Whilst the orientation of the house is a given it is worth noting that the only areas of large fenestration to the rear are broadly North orientated which minimises any solar gain. The thermal envelope of the building increases the overall insulation. The white painted external walls maximise the overall albedo measure of the building envelope.

OS map – orientation of property

c) *Manage the heat within the building through exposed internal thermal mass and high ceilings*

In rebuilding the property the original proportions had been recreated with ceiling heights on ground and first floor of about 3m. The basement similarly has a ceiling height of more than 3 meters. The basement, formed of concrete underpinning and reinforced concrete walls, floor and ceiling also naturally acts as a substantial heat sink. Furthermore, the external walls, as they have not been internally lined, also soak up heat and help to modulate the internal climate during extremes.

Section (NTS)

d) Passive ventilation

There are no designed measures for passive ventilation apparent but the glazed screens to the rear – which are never exposed to any daytime direct sunlight – allow for manual ventilation of the lower floors which can create a stack effect when coupled with opening of bedroom doors and windows off the main stairwell.

e) Mechanical ventilation

There is no mechanical ventilation to the house other than extract ventilation to bathrooms and non-living basement spaces that lack natural ventilation (plant, utility etc.), as would be normal for a house of this nature. Furthermore, mechanical ventilation in itself would increase energy consumption so should be discarded as a suitable measure within the hierarchy in this situation.

f) Active cooling

The air conditioning provides comfort cooling to the family for the main living areas and, particularly, the bedrooms on the upper floors on those occasions in the British summer when the temperature exceeds the levels of comfort that the refurbished building is able to regulate - in both the existing fabric and new thermal elements, shading and fenestration.

The system that has been installed is driven by heat pumps rather than conventional condenser units. Such heat pumps tend to have higher operating costs and so are more energy-efficient.

Conclusion

The external heat pump units for the comfort cooling have a limited visual impact on the property, especially when addressed by some measures in connection with acoustic improvements. The justification of the cooling within the cooling hierarchy, shows that comfort cooling is a reasonable requirement for the residents in peak temperatures. On a holistic level, the measures that were put in place to upgrade the thermal envelope, provide new service installations and fenestration, have resulted in a more energy efficient home than before it was redeveloped.