MEASURES TO MITIGATE OVERHEATING

Flat 2 (upper maisonette), 97 Leighton Road NW5 2QJ Design Statement October 2023

97 Leighton Road is located on the corner of Leighton Road and Leighton Grove. The building has large windows facing south on to Leighton Road and east on to Leighton Grove. This design leads to significant solar gain in the summer months, and as a consequence, overheating, particularly on the upper floors. This effect is becoming more frequent, more prolonged and more extreme with climate change.

The proposals in this application are intended to mitigate the summer overheating in two ways:

a) By increased natural ventilation
b) By increased solar shading

Increased Natural Ventilation

The staircase on the east elevation is enclosed at the top floor with glass blocks allowing significant solar gain in the summer months. This problem is exacerbated by the absence of any natural ventilation at the top of the stairs. Consequently the significant heat build-up further affects the top floor room which itself has substantial heat gain from extensive east and south facing windows. The proposal is to introduce openable vents at high level in the glass block screen to permit the hot air to escape from the staircase. This will be aided by the introduction of more natural ventilation on the north elevation at first floor level, increasing the ingress of cooler air and contributing to the 'stack effect' throughout the staircase. This ventilation will be achieved by replacing a side hung casement window in the first floor bathroom with a framed louvered window which will significantly increase the area of ventilation whilst providing security, potentially allowing 24 hour natural ventilation.

Increased Solar Shading

To reduce the build-up of heat it is proposed to install external shading devices (brise-soleil) on the south facing windows on the set back top floor, on the south facing glass block screen at the top of the stair and above the south facing windows on the second floor. The brise-soleil have the effect of shading the windows in the summer months when the sun is high in the sky , but allowing the sunlight into the room in the winter when the sun is lower in the sky. The brise-soleil would be fabricated from powder coated aluminium.

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