92 South Hill Park, NW3 2SN

Sustainability Statement
08/08/2023

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1.1 Introduction

This Sustainability Statement has been prepared by Manalo & White on behalf of Peter Newman and Lindsay Newman in support of the addition of a condenser unit within an acoustic enclosure to 92 South Hill Park.

This document should be read in conjunction with the Overheating Assessment of 92 South Hill Park produced by Elmstead Energy Assessments and Building Services.

Ref:
ref. 2023/2529/NEW

Site Address:
92 South Hill Park, London NW3 2SN

Application Type:
Planning Application

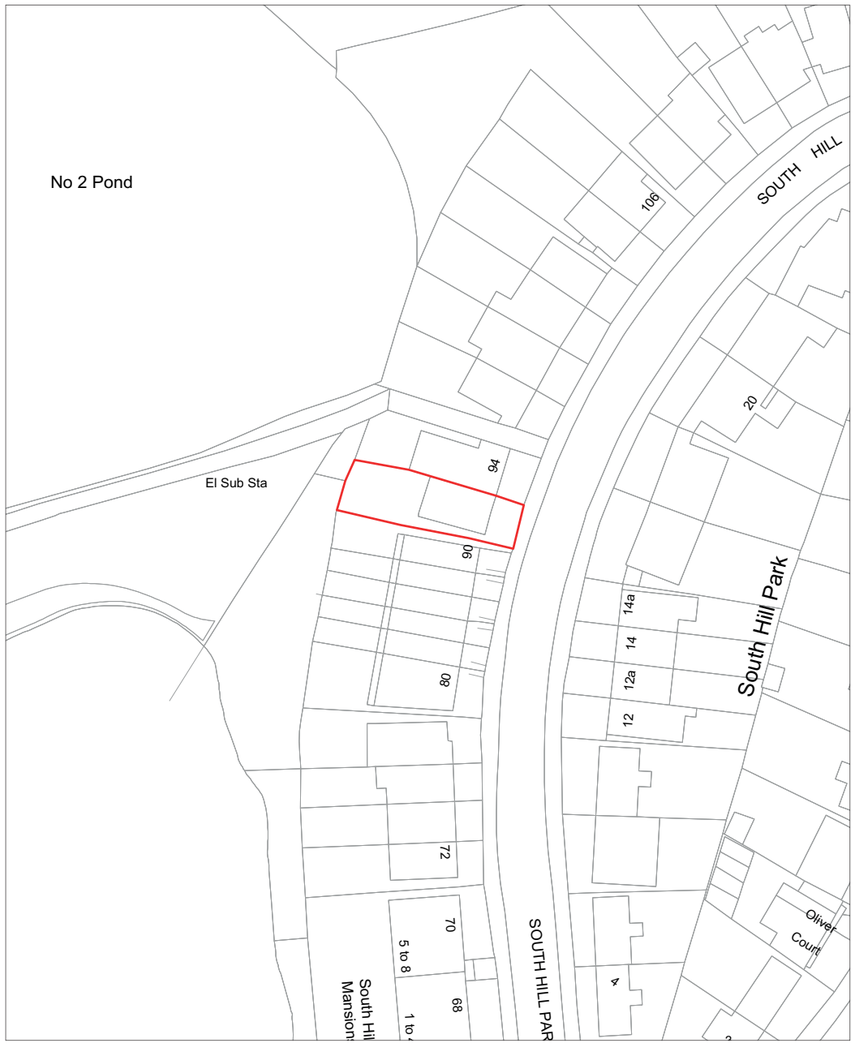
Development Type:
Installation of Condenser Unit within an Acoustic Enclosure in the Rear Garden

Architect: Manalo & White

Services Designer: Serge Lai Engineers Ltd. A noise report is also provided by EMTEC Products Ltd.

Existing Land Use:
Semi-detached house

Proposed Land Use:
Semi-detached house



1:1250 Existing Location Plan
92 South Hill Park

92 South Hill Park Aerial View from south

1.2 Summary

This document outlines why comfort cooling is being proposed at 92 South Hill Park. The requirement is supported by an Overheating Assessment as required by Camden Council Local Plan 2017:

"Air conditioning will only be permitted where thermal modelling demonstrates a clear need for it after all preferred measures are incorporated in line with the London Plan cooling hierarchy[1]"

Serge Lai Services Designer Ltd. reviewed the alternative cooling strategies outlined by Camden Council[2]:

- Natural stack effect
- Ground source cooling
- Exposed concrete slabs
- Evaporation cooling
- Water based cooling system

In the subsequent pages their viability at 92 South Hill Park is assessed and a conclusion is provided.

[1]*Camden Local Plan: Energy Efficiency and Adaptation* (2017) London Borough of Camden, p.9

[2]*Camden Local Plan: Energy Efficiency and Adaptation* (2017) London Borough of Camden, p.10

ELMSTEAD ENERGY ASSESSMENTS AND BUILDING SERVICES

92 South Hill Park

Hampstead, London NW3 2SN

Part O

CIBSE TM59 Overheating Assessment

Cover Page of CIBSE TM59 Overheating Assessment provided by Elmstead Energy Assessments & Building Services

1.3 Cooling Strategies

Natural stack effect

"Developments could adopt a natural 'stack effect' which draws cool air from lower levels whilst releasing hot air.[3]"

- Natural stack effect is facilitated by a new rooflight on the third floor. However it is not recommended due to fire regulation; there is a requirement to compartmentalise the rooms from the open-plan stair case to reduce fire spread and smoke travelling in the event of a fire.

- 92 South Hill Park is a Victorian semi-detached house. Layout is compact and lacks possibility to enable a stack effect whilst complying with Building Regulation (Fire Safety: Approved Document B).

Ground source cooling

"Ground source cooling is provided by a 'ground source heat pump' in the summer the ground stays cooler than the air and the difference in temperature can be harnessed for cooling.[4]"

- Site is a small plot with a small garden - not feasible to drill.

- Unexploded Ordnance Items are an undetermined risk following an UXO survey on-site. Recommendation to limit extensive ground works.

- Prohibitive cost.

Exposed concrete slab

"Exposed concrete slabs can provide natural cooling. This leaves internal mass (concrete slabs, stone or masonry which form part of the construction) inside a building exposed so that it can absorb excess heat in the day and slowly release it at night.[5]"

- Existing building has raised timber floors; concrete slabs is not a viable option.

- Not compatible with existing fabric to include new concrete slab, building is masonry brick.

Evaporation cooling

"Evaporation cooling could also be investigated, this cools air through simple evaporation of water.[6]"

- High-risk of Legionnaires' Disease flagged by Services Designer.

- Single-aspect rooms limit opportunity for cross-ventilation.

Water based cooling system

"Water based cooling systems reduce the need for air conditioning by running cold water through pipes in the floor and/or ceiling to cool the air.[7]"

- Deemed insufficient for level of cooling required to combat overheating.

- Existing fabric constraints.

- Prohibitive cost.

1.4 Conclusion

We conclude that these passive cooling strategies are not suitable due to [i] constraints of the existing building/site and [ii] project prohibitive costs.

As outlined in the Design and Access Statement, the use of passive cooling will still be prioritised. The options available are:

- Opening of windows
- Shading from solar gains

The CIBSE TM59 Overheating Assessment provided by Elmstead Energy Assessments & Building Services concludes that the overheating threshold is surpassed in the habitable roomss and recommends comfort cooling[8]. This is despite passive cooling strategies above. CIBSE TM59 is the latest design methodology provided by CIBSE (Chartered Institute of Building Services Engineers) for the assessment of overheating risk in residential buildings.

The cooling hierarchy principle in The London Plan 'Policy SI 4 Managing Heat Risk[9]' section has been followed; the active cooling system is proposed solely because the overheating threshold given in the report, can not be prevented by the strategies as followed by the hierarchy without comfort cooling. It will only be used in extreme heat events where the passive cooling options do not suffice.

In conclusion, we hope this document clarifies the appropriateness of an active cooling system in 92 South Hill Park.

[3-7] *Camden Local Plan: 2017*, (adopted 3 July 2017) London Borough of Camden, p.10

[8] *92 South Hill Park - CIBSE TM59 Overheating Assessment* by Elmstead Energy Assessments & Building Services Ltd (published 27/07/2023), p.15

[9] *The London Plan: The Spatial Development Strategy for Greater London* (March 2021) Greater London Authority, p.354

1.5 Bibliography

92 South Hill Park - CIBSE TM59 Overheating Assessment (published 27/07/2023) Elmstead Energy Assessments & Building Services Ltd

Camden Local Plan: 2017, (adopted 3 July 2017) London Borough of Camden

The London Plan: The Spatial Development Strategy for Greater London (March 2021) Greater London Authority

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