December 2022
Mark Richardson on behalf of TB+A
183 Eversholt Street, London, NW1 1BU

TROUP BYWATERS + ANDERS

Design Note: Building service system and energy/carbon performance

In order to lower the operating carbon emissions of the building, it is proposed to:

- Replace the current gas infrastructure with electric alternatives.
- Install highly efficienct modern lighting

As the electricity grid carbon factor is much lower than that of gas, for each unit of space heating generated, less carbon emissions will be created. To further reduce carbon emissions, the current gas boilers will be replaced with air sourced heat pumps. As air sourced heat generate from 2-3 units of heat for every unit of energy put in compared to gas boilers which generate from 0.8-0.95 units of heat for every unit of energy put in, carbon emissions are further reduced. Air source heat pumps consist of 2 systems:

- An outdoor unit – this unit 'collects' heat from the ambient air, it is preferable to locate them in open spaces or roof tops as they function more efficiently
- An indoor unit – this unit takes the collected heat energy and transfers it the heating water distribution system, these units are typically located internally in the central building plant rooms.

LED lighting technology's efficiency is getting better all the time, and is much more efficient compared with compact fluorescent technology. Using highly efficient modern fittings reduces the required electricity which in turn reduces carbon emissions.

Both these building upgrades contribute to improving the energy efficiency and lowering the carbon emissions from the building. It is anticipated that the building will achieve an Energy Performance Certificate (EPC) B following these building upgrades.