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7 Upper St Martin's Lane Energy Summary

Project Name:	7 Upper St Martins Lane - planning submission	**Author:**	Darren Coppins
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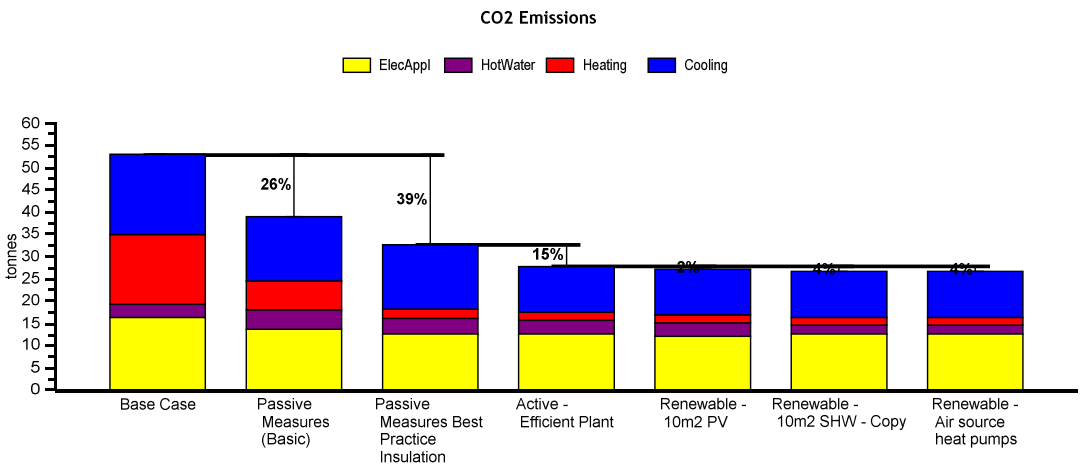
This report provides a summary to the outline energy considerations for the proposed refurbishment works to 7 Upper St Martin's Lane, London.

7 Upper St Martin's Lane is currently a combination of Retail and Commercial accommodation with one existing residential dwelling on the top floor. It is proposed to refurbish the building retaining the Retail element at Ground and Basement levels, creating a new access for 4 proposed new apartments above. No office space will be provided in the completed refurbishment.

In considering the energy options for this project, the proposed new dwellings and retail space have been analysed using benchmarks, as permitted for smaller developments. The resulting energy use by the whole development has then been calculated with a number of energy reducing options following the London Plan's preferred methodology of 'Lean' (Passive), Clean (Active), and Green (Renewable energy).

The graph below provides a guide to the calculations undertaken, considering the following methodology:

1. Standard baseline – building if refurbished with no improvements
2. Basic passive measures (Lean) – improving insulation to walls and windows to L1B standards
3. Advanced passive measures (Lean) – Super-insulating the building
4. Applying high efficiency plant (Clean) – Condensing boilers with flue gas heat recovery, Comfort cooling to be at least COP of 3.5 & whole house heat recovery ventilation provided.
5. Renewable (Green) Option 1 – Applying 10m^2 of Photovoltaic panels
6. Renewable (Green) Option 2 – Applying 10m^2 of Solar Hot Water panels
7. Renewable (Green) Option 3 – Utilising an Air Source Heat Pump



Graph showing whole development carbon dioxide emissions for the different energy options assessed.

As the above graph demonstrates, the largest impact on reducing carbon is associated with the application of high levels of insulation and energy efficient plant. With consideration to the conservation area that the building sits within, the application of external forms of renewable technology is not considered viable.

The analysis also demonstrates that high efficiency boilers are likely to achieve very similar carbon emissions levels as air source heat pump technology due to the much lower carbon intensity of Gas to Electricity with the SAP2009 carbon emission factors.

The application of highly efficient services and best practice levels of thermal insulation has therefore been selected as the preferred option for minimising energy use at the proposed refurbished 7 Upper St Martins Lane.