

Our journey so far.....

# Our journey so far.....

2010- New build redesign of internal layout.

2011- Installed an ASHP and solar PV

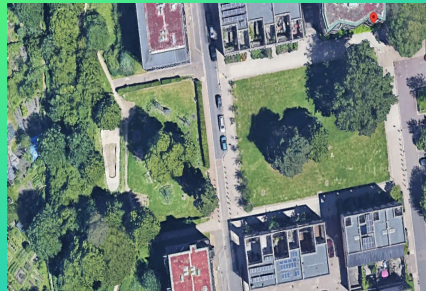
2016 - Purchased an EV

2018 - Installation of SMETS 2 meter

2021 - Installed the Homely controller

2022 - Installed a home battery

2023/4 - Grid Services & automation of controls using machine learning.



# Home Energy Statement



263m<sup>2</sup> - stacked over 3 floors with a flat roof / parapet wall accommodating 20 PV panels and external unit of the ASHP in SW corner. Home battery on ground floor within the internal living space.

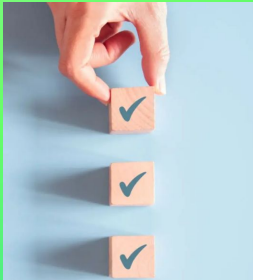


2010 EPC rated as B with estimated gas usage of 24000 kWhs (80%) & electricity usage of 6000 kWhs (20%).  
114 kWh/m<sup>2</sup>/annum



Current annual performance of 8050 kWhs - 90% electricity - Improved mix  
30 kWh/m<sup>2</sup>/annum.

74% lower usage.



Lower bills - current annual cost £750.

Lower carbon - 860kgs for current year with no credit taken for exported PV.

Improved living environment- constant internal air temps with lots of natural light.

# My learnings so far:

- ❖ Building layout has reduced energy demand and improved comfort in both winter & summer periods.
- ❖ Use of data generated from the smart meter provides greater confidence in both decisions and post install evaluation.
- ❖ Demand & Supply side improvements are available from machine learning.
- ❖ Winter period creates an opportunity for battery capacity to reduce carbon content of inbound supply.
- ❖ Summer period creates an opportunity for battery storage from surplus PV to be discharged later in the day at premium rates.
- ❖ TOU tariffs can generate both financial and CO2 savings. Likely to become greater going forward and incentivises storage decisions.
- ❖ Pressing policy makers to increase wind generation capacity (onshore & offshore) & storage remains critical to reaching net zero ambitions for the UK as a whole.

<https://royalsociety.org/topics-policy/projects/low-carbon-energy-programme/large-scale-electricity-storage>