Planning observations for Mortimer and Hilgrove:

HASC response, ref Amy Farthing's comments (in blue)

CO2 and fuel bill savings: The calculation of the projected CO2 savings is based on modelling of the specific blocks using interim data and more accurate data may be available.

Action for applicant: If more accurate figures can be made available using updated data, and the relevant in-use factor, the applicant should supply these as part of the planning application so these can be taken into consideration in assessing the public benefit associated with the scheme.

The latest figures from the Re:New modelling show slightly higher savings figures but is not felt that these are significant enough to warrant publishing them given the risk of confusion and misinterpretation that that would involve.

Blocks	Average CO2 saving per flat	Whole project	Average Cost Saving	Average SAP	Fuel Poverty Risk
Hilgrove Estate 2 - Previous	1.09 tCO2 (27.1%) pa, lifetime (36yrs) 39.3 tCO2	156.3 t CO2 pa, lifetime total 5,625	£240 pa (29%)	moves from the mid to lower end of band D to the band D/C boundary	Drops from 12% to 5%
Hilgrove Estate 2 – previous with "In Use" factor	0.73 tCO2 pa, lifetime (36yrs) 26.33 tCO2	104 t CO2 pa, lifetime total 3768 t CO2	£160 pa	n/a	n/a
Mortimer Estate - previous	1.21 tCO2 (34.4%) pa, lifetime (36yrs) 43.5 tCO2	189.6 t CO2 pa, lifetime total 6,825	£236 pa (31%)	moves from band D to band C	Drops from 11% to 2%
Mortimer Estate – previous with "In Use" factor	0.81 tCO2 (30%) pa, lifetime (36yrs) 29.15 tCO2	127 t CO2 pa, lifetime total 4,572.75	£158 pa (32%)	n/a	n/a

As a comparison with the figures above, the EPCs produced since 2010 on the two estates were examined. These included a statement of the cost savings gained from applying wall insulation. These costs were adjusted to take account of the differences in gas price between the assumptions in the SAP (as specified by the Buildings Research Establishment) and an average of recent energy prices (as obtained from the Energy Savings Trust). These show the following ranges of savings:

	CO2			**Cost Savings**		
	Average	Minimum	Maximum	**Average**	Minimum	Maximum
Hilgrove Estate 2 (10 properties since 2010) savings from EPC	**1.04 tCO2**	0.54 tCO2 (studio) 0.69 tCO2 (other flats)	1.69 tCO2	**£229**	£118 (studio) £151 (other flats)	£374
Hilgrove Estate 2 (10 properties since 2010) savings from EPC applying "In Use" factor	**0.70 tCO2**	0.36 tCO2 (studio) 0.46 tCO2 (other flats)	1.13 tCO2	**£154**	£79 (studio) £101 (other flats)	£250
Mortimer Estate & Marrick House (12 properties since 2010) – savings from EPC	**1.02 tCO2**	0.70 tCO2	1.55 tCO2	**£224**	£152	£342
	0.68 tCO2	0.47 tCO2	1.04 tCO2	**£150**	£102	£229

Notes:

1) The "In Use" factor is used in government funding calculations to account for differences between modelled savings and observed savings. Some of the savings above are for 50mm of insulation (for older EPCs before 2012). The proposals are to install 100mm of insulation to meet latest building regulations, so the savings above would be a bit higher.
2) The properties above are just those which had EPCs performed since 2010, they are not necessarily a representative sample,(for example there are not as many larger flats in the EPC sample proportionally to those within the complete estates)

When considering the public benefit that will result from the measures, it's important to take into consideration projected rises in energy price. The fuel bill savings above are based on current energy prices (as used the Energy Savings Trust for their calculations), However, domestic gas bills have increased by 172% (115% in real terms) over the last 10 years (source: average of fuel bills for England and Wales from 2004 to 2014 in "Average annual domestic gas bills for GB countries" [Table 2.3.2] - https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics)– this is the equivalent of 10.5% per year (or 8% per year in real terms – a doubling every 9 years)..

Energy savings are not necessarily reflected in lower energy bills if energy prices have increased since the period before the insulation was installed. A door to door survey at Kilburn Gate in July 2015 revealed that although the majority of those residents surveyed felt that their energy had use had gone down, for a number of those their heating bills had remained the same However, from

2011 (the year before the insulation was installed) to 2014 (the last year for which figures are available) average bills rose by 21-24%, so if the bills remained the same, this would imply that savings had been made compared to what would have happened without the works (price increase calculation from DECC figures - "Average annual domestic gas bills for GB countries" - https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics).

Fuel Poverty: Because fuel poverty is dependant, in part, on income, it is not possible to pinpoint which dwellings are at risk/in fuel poverty. In addition to this, residents are likely to change over the years, so trying to pin point specific dwellings in fuel poverty as part of the planning application is not appropriate. The assessment method used by the applicant for assessing the risk of incidence of fuel poverty is considered appropriate.

Appropriateness of proposed measures: When evaluating public benefit of the proposed energy efficiency measures, it's important to understand whether there are any other measures that would be appropriate for the proposed dwellings and the comparative impact these could have on fuel poverty.

Action for applicant: Please provide detail of other energy efficiency measures considered (including boiler replacement, solar PV, and internal insulation) and clarification of how these would compare in terms of both cost an appropriateness, and whether any of these could bring a comparable reduction in fuel poverty, CO2 and fuel bill savings.

General:

A range of energy-efficiency measures are considered by HASC as part of its improvements and sustainability programmes. In addition, targeted low-cost measures are delivered to vulnerable residents across all sectors as part of the Well and Warm programme. Because of the contribution of space and water heating to CO2 emissions and fuel costs, and the difficulty in reducing these, priority is given to those measures which reduce the heat losses from building fabric and improve the efficiency of heating systems. This also conforms to the energy hierarchy given in Camden's Planning Guidance (see CS13 of Camden's Core Strategy and in the Sustainability Planning guidance (CPG3)):

1. Be lean – use less energy
2. Be clean – supply energy more efficiently
3. Be green – use renewable energy

Insulation reduces the heat loss and so heat demand and falls into the top level of the energy hierarchy. Boiler replacement is a way of supplying energy more efficiently and so falls into the second level, and Solar PV falls into the third level.

Boiler Replacements

Camden already has a policy of replacing individual boilers every 10-15 years, depending on the age and efficiency of the boiler, and also the condition of the units and the repair history. Controls would be upgraded at the same time where appropriate.

The impacts of replacing a boiler, in terms of CO2 and fuel cost savings depend on the age and efficiency of the boiler being replaced. Although the savings for replacing a very inefficient (G rated) boiler are high, the savings for replacing newer boilers are lower (for example £40-£90 savings pa for D and E rated boilers [Source – Energy Savings Trust]).

The majority of the boilers at Hilgrove Estate 2 and Mortimer are already relatively energy efficient:

- Hilgrove: 73.9% B rated (86-90% efficient), 17% D rated (78-82% efficient), 4.5% E rated (74-78% efficient), 4.5% G rated (70% or below).
- Mortimer etc: 75.2% B rated (86-90% efficient), 14.7% D rated (78-82% efficient), 9.2% E rated (74-78% efficient), 1% G rated (70% or below).

Where G-rated boilers remain this is almost always where access has been refused by the tenant to make the replacement. Where D and E rated boilers remain, replacement will be considered in due course according to the criteria above.

Camden has no control over the efficiency of boilers in Leasehold stock, including those which are privately rented.

Cavity Wall Insulation

Since 2000 Camden has completed thousands of the low cost energy efficiency measures, including the insulation of 11,800 (about 95%) of its cavity walled properties. We are continuing to insulate the remaining cavity walls, but if we are to continue to reduce CO2 emissions and the risk of fuel poverty we need to address the thousands of uninsulated solid walls in the borough.

Internal Wall Insulation

Internal Wall Insulation is an alternative to External Wall insulation. It and offers similar benefits in terms of CO2 and fuel price savings. It is sometimes slightly cheaper than external wall insulation, though this depends on the amount of fixtures and fittings required to be moved and costs of redecoration – it is far more expensive if decanting of residents is required. There are a number of practical disadvantages:

1) It is a technically less effective solution than external wall insulation. In particular:
    a. There is a risk of thermal bridging where the wall is not insulated, for example between floors, and along party walls, and where joists meet external walls.
    b. There is a risk of interstitial condensation between the insulation and the (now cooler) external wall.
2) It is very disruptive to residents
    a. The rooms will be practically out of use while the works are going on and fixtures like skirting boards, electrical sockets and radiators need to be moved and re-fixed, and the walls need to be re-decorated. The work is noisy and dusty, and is particularly disruptive for people who are home-bound.
    b. The room will be smaller. If rooms are already small to start with (as tends to be the case with our properties in blocks) it is not practical to put insulation on the inside.
    c. There are tenants for whom this type of disruption would be unacceptable – in particular elderly people, people with health problems and other vulnerable people. Since these groups are particularly well represented in social housing there are a significant proportion of properties we would not be able to treat in this way.

Solar PV

Camden has been pursuing solar PV implementations for a number of years, in particular in 2011 when a 3MW scheme to fit 1,000 street properties with solar PV had to be abandoned due to a significant drop in the Feed in Tariff which would have funded the installations. Camden has recently been investigating using Solar PV to displace some of the landlord's supply (and so reduce standing charges for tenants and leaseholders), and also community energy schemes. The cost effectiveness of PV over the long term (particularly since the major drop in Feed in Tariffs) is very dependent on the suitability of the building in terms of orientation, any structural issues, installation and maintenance costs, and also the amount of generated electricity which can be used to displace grid electricity.

Solar PV and Fuel Poverty:

Despite the undoubted benefits of Solar PV for carbon reduction, we do not believe it is the best vehicle for tackling fuel poverty.

For most PV installations the Feed in Tariff and Export Tariff is required by the installer of the system to cover system costs rather than generating income for the households. The Feed-in Tariff is currently under review by DECC and expected to be phased out imminently. For the household to directly benefit from the electricity generated by the solar panels, a separate connection is required to each property which is not technically feasible on housing blocks. As such only some residents would benefit rather than the whole block.

For those properties that were directly connected to the solar PV panels, there is an additional limit on the impact on fuel poverty as there is a dislocation between when the electricity is generated – during the day in summer, and when it is required, more commonly in the evenings. In practice therefore it may be difficult for a household to actually displace much of its existing electricity use and so cut down on energy bills. Storage would increase the amount of electricity which could be used but currently this is not a technically feasible solution for housing blocks.

To get a comparable fuel poverty reduction to solid wall insulation, it would be necessary to provide a 4KWp system per household, which would require 32 m2 of suitably orientated, unshaded roof space per household. Such roof space would only be available to top floor properties. The blocks with the best locations for generation and investment in solar PV (in terms of reducing costs and maximising income) are not necessarily the ones with a high risk of fuel poverty. Many of the most promising blocks for Solar PV in Camden are already insulated.

On the other hand, homes with uninsulated solid walls inherently have a higher risk of fuel poverty because of the increased costs of heating, and so it makes sense to target them for energy efficiency measures, in particular wall insulation as this is the measure with biggest single impact.

Heating and Fuel Poverty

Although any reduction in bills will help alleviate fuel poverty, heating bills are of particular significance for fuel poverty, since the act of reducing consumption can cause people to under heat their homes and suffer not just thermal discomfort but also health problems, particularly those who are vulnerable. It might be possible to minimise you electricity bill by using efficient lighting and switching things off, but there is a limit to the amount of energy use you can cut from heating without suffering ill effects.

The importance of energy efficiency in fuel poverty is emphasised in recent reports by National Energy Action (NEA), the leading UK fuel poverty campaigning organisation, for example in "Why NEA is urging the Government to set minimum energy efficiency standards for low income households" (http://www.nea.org.uk/Resources/NEA/Policy%20and%20Research/Documents/Minimum%20EE%20standards%20(Feb%202014).pdf). In addition:

> "NEA believes that increasing investment in energy efficiency for low income households should also be regarded as a key infrastructure priority"

> "Households with other non-cavity wall types (usually solid) are much more likely to be fuel poor than those with insulated cavity walls, and have much higher average fuel poverty gaps"

> http://www.nea.org.uk/Resources/NEA/Policy%20and%20Research/Documents/Fuel%20Poverty%20and%20Energy%20Infrastructure%20Costs%20analysis%20by%20National%20Energy%20Action%20(NEA).pdf

Finally, a number of responses have stated that residents are already comfortable and have disputed the heat losses. As long as the internal temperature is higher than the external one, there will inevitably be heat loss through walls. Whether residents actually feel cold or not will depend primarily on the internal temperature of the flat (as controlled by the heating system), but also resident's behaviour (e.g. wearing more clothes, using the heating controls more efficiently). It is still possible not to feel cold (for example if the boiler is replacing heat lost) even though heat is being lost through the walls, but it does mean that a lot of heat is being wasted. Reducing this heat loss by insulating the walls will enable less energy to be used to maintain the same temperature.