Proposed development at:

Kings College Court
55 Primrose Hill Road
London
NW3 3EA

1.1 HEATING

It is anticipated that each apartment will be served by a VRF heat recovery, heat pump system with the rooms provided with heating and cooling by means of ducted (un-cased) indoor units these shall be connected to the outdoor unit by means of BC Controller. The ducted units would supply the heated or cooled air to the rooms by means of grilles and diffusers which would be integrated into the interior design.

In addition to the ducted indoor units a Heat Pump Boiler would also be connected to the BC Controller. This would be used to provide hot water to the towel rails, underfloor heating to wet areas and rooms with ceramic floors and the domestic hot water calorifier

The air source heat pump outdoor unit would require substantial ventilation. It should therefore be located in an external environment. If there is sufficient provision for air movement on the transfer deck it might be possible to site the outdoor units for all five apartments at this level.

1.2 VENTILATION

The apartments would be provided with supply and extract ventilation by means of MVHR units. These would supply fresh air to the bedrooms and living rooms and extract air from the en-suite accommodation, bathroom and kitchen. The fresh air would be tempered by means of the energy extracted from the exhaust air stream with a thermal efficiency of approximately 90% and could therefore be discharged directly into the occupied space however, where possible the fresh air would be ducted to the heat pump indoor units to be discharged through the same grilles used for heating and cooling.

The fresh air would be filtered by the filters in the MVHR units. If required higher standards of filtration can be provided (up to F8) by the addition of dedicated filter boxes on the fresh air inlet to the MVHR units. The moisture laden exhaust air would be extracted by means of disc valves or grilles disguised by joinery features. The MVHR units would operate to provide continuous trickle with boost to higher fan speeds under humidity, air quality or occupancy sensors as appropriate.

In addition to the MVHR unit the kitchens would be provided with a dedicated cooker extract system comprising cooker hood, variable speed fan and ductwork.

Supply and extract attenuators would be provided to ensure acceptable noise levels under all operating parameters. The attenuators in the cooker extract system would be Melinex lined.

1.3 DOMESTIC WATER

1.3.1 Mains Cold Water

It is assumed that the existing mains cold water, pumped to the upper floors would have sufficient pressure to reach a cold water break tank and booster set mounted on the transfer deck. This break tank / booster set would provide a metered cold water supply to all five apartments. The cold water would primarily be used for drinking (including ice machine) and food preparation however a branch would be taken to supply a base exchange water softener in each apartment.

1.3.2 Softened Cold Water

From the base exchange water softener in each apartment a supply of softened cold water would be taken back down to the transfer deck where it would supply an individual tank / booster set (5 No.). From these tank / booster sets softened cold water would be supplied to all sanitary equipment not specifically for potable water (baths, showers, basins, washing machines, dishwashers etc.) within the apartment.

1.3.3 Rain Water Harvesting

A rain water harvesting and storage system could be installed to utilise the rain collected from the roof. The rainwater would be stored in one or more tanks (to spread the load) located on the transfer deck. From the tank(s) the harvested rainwater would be pumped to a header tank in each apartment from where it would supply the WCs by gravity. The header tanks would be provided with conventional float operated valves to enable the tank to be filled by softened cold water in the event of there being insufficient rain water.

1.3.4 Domestic Hot Water

The 5 No. apartments would be served with domestic hot water by means of individual hot water calorifiers. These would utilise the heat pump boilers as the primary heat source. The 5 No. calorifiers could also be provided with a secondary, solar coil supplied from an evacuated tube collector (one collector array per apartment) mounted on the roof above the twelfth floor.

In addition to the heat pump boiler coil and the solar coil (if required) the calorifiers would also have electric immersion heaters to provide a pasteurisation cycle in the event that the contents of the calorifier fail to reach an adequate temperature during the course of a week.

In order to limit dead legs the hot water system would be provided with a secondary return to re-circulate the water to within 1m of the outlet.

Point of use mixing valves would be provided at each outlet to prevent scalding. The only exceptions to this would be the sinks in the kitchen and utility room.

1.4 NATURAL GAS SERVICE

If **absolutely** necessary it would be possible to provide individually metered gas supplies to each apartment. The 5 No. gas meters would be installed at the ground floor level with the gas service rising either externally or internally (through a well ventilated void) to the transfer deck from where it would distribute to serve the catering facilities in the 5 No. flats above.

1.5 ABOVE GROUND DRAINAGE

It is assumed that the existing above ground drainage SVPs will be used with any offsets occurring at the transfer deck. It is therefore important that the SVPS above the transfer deck can line through. Ideally a number of the SVPs will continue through to roof level to provide venting of the below ground drainage system and in particular the head of the run. Consideration should be given to running the above ground drainage in cast iron to reduce noise, avoid fire compartmentation issues and ensure that offsets are robustly constructed to facilitate secure rodding.