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. In each apartment these shall be connected to the outdoor unit by means of a 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 units would require substantial ventilation. They would therefore be positioned on the roof area above the 10th Floor with appropriate screening to ensure they would not be visible from below.

## 1.2 VENTILATION

The apartments would be provided with supply and extract ventilation by means of individual 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 F7) 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.

The MVHR units would be located in the four plantrooms on the 11th Floor that have been provided for the apartments.

Fresh air would be drawn in and exhaust air discharge by means of weatherlouvres in the external walls of the plantrooms. Supply and extract grilles would be positioned as far apart as possible but generally not less than 2m.

In addition to the MVHR unit serving the whole apartment the kitchen in each apartment would be provided with a dedicated cooker extract system comprising cooker hood, variable speed fan and ductwork (routed through the 11th floor plantrooms) to discharge to atmosphere through the roof.

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 communal cold water break tank and booster set mounted on the 11th Floor. The four individual cold water supplies from this break tank / booster set would be metered. The cold water supplies from the communal break tank / booster set 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 up to the 11th Floor plantrooms where it would supply an individual tank / booster set (4 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 Domestic Hot Water

The four 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 four 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 eleventh floor plantrooms.

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 recirculate 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 four 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 11th Floor from where it would distribute to serve the catering facilities in the four flats below.

## 1.5 ABOVE GROUND DRAINAGE

It is assumed that the existing above ground drainage SVPs will be retained with any offsets occurring between the eighth and ninth. 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.

## 1.6 ACOUSTIC

Ian Sharland Ltd, Noise and Vibration Control Specialists, have been retained to provide a formal noise impact assessment for all new plant associated with the development at the detailed design stage. The assessment will be conducted by a member of the institute of acoustics, or a firm belonging to the Association of Noise Consultants. The study will be conducted in accordance with BS4142 and the criteria contained within Camden Council's standard planning policy for noise DP28. The assessment will consider both airborne noise transmission to adjacent buildings, and airborne & structural transmission to the pre-existing flats within the building

As necessary, noise control engineering will be applied to the equipment to ensure all targets are met.

Ian James Sharland BSc (Eng) CEng MRAeS FIOA (Principle Acoustic Consultant)