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PROJECT

Outline Brief for the Mechanical Services to 1 Norfolk Road, Camden, London

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SECTION 1

1 INTRODUCTION

This document is intended to outline the proposed brief for the Mechanical Services for 1 Norfolk Road, Camden, London, to assist with the compilation of the documents required for the Planning Application.

The new proposed systems will need to be coordinated with Architectural and Structural proposals and as such will need careful refinement. This document sets out the general proposals for each service.

SECTION 2

2 MECHANICAL ENGINEERING SERVICES

2.1 HEATING

Wet underfloor heating will be provided to all occupied floors of the property with associated manifolds located on the same floor generally in cupboards/voids, locations to be confirmed. Ancillary/staff areas shall be heated via radiators.

Electric under-floor heating and dual-fuel towel warmers shall be provided in bathrooms.

Gas-fired condensing boilers (preliminary selection 2No Hamworthy Fleet F100W at 100kW each) shall be provided to serve the under-floor heating circuits, radiators, as primary heat sources for the generation of DHWS and as a supplementary heat source for the swimming pool.

2.1.1 DESIGN PARAMETERS

It is proposed that the system specification be set at:

Outside conditions: Winter –3°C db, 100% RH

Inside Conditions:

Living Areas	23°C db
Bedrooms	23°C db
Bathrooms/Showers	23°C db
Corridor/Ancillary Areas	21°C db

2.1.2 PLANT PROVISION

The boiler shall be located as proposed in the plant room at Basement 2 level. Hot water cylinder and associated pumps are to be located in the same plant room. Boiler flues shall be routed to discharge above main roof level via a “chimney” riser shaft

Cold water storage and booster set will also be provided within the Basement 2 plant room.

2.1.3 CONTROL

Each room shall be capable of being controlled individually for both temperature and time periods. This will require the location of a wall mounted temperature sensor (thimble type) within each room, wired back to the home automation system. The control of the heating in each room shall be linked to the central controls.

2.2 VENTILATION

The house shall be provided with intermittent extract ventilation to bathrooms, WCs, changing areas, kitchen, laundry and bar areas. This will operate when the PIRs in the WCs or bathrooms (or humidity sensors/manual switches in other areas) are activated causing the fan systems ramp up.

All habitable rooms within the house shall be provided with ducted heat recovery mechanical ventilation, served from a packaged air handling unit located within the Basement 2 plant area.

All intermittent extract ventilation shall be ducted to atmosphere, generally to the main roof level via “chimney” risers.

The heat recovery system fresh air and exhaust shall connect to divided areas of the front light well.

2.2.1 DESIGN PARAMETERS

It is proposed that the system specification be set at:

Bathrooms/WCs	10 ac/hr
Laundry, Changing	4 ac/hr
Kitchen	Dependent on equipment load and final exhaust canopy detail.
Habitable Rooms	10 litres/sec per person

2.3 COMFORT COOLING

All major habitable spaces shall be provided with comfort cooling. It should also be noted that comfort cooling shall be provided and not air conditioning, since the latter requires full treatment of the air including humidification / dehumidification.

2.3.1 COOLING EQUIPMENT/HEAT PUMPS

It is anticipated that in general chassis type heat pumps shall be installed into the above-mentioned rooms and that these would be built into bespoke cabinetry to match the interiors or mounted within suspended ceiling voids or bulkheads.

The units would be variable refrigerant flow direct expansion type (DX) served from a heat pump outdoor unit located within the Basement 2 level plant area, with ducted connections to the divided front light well at Basement 1 level.

2.3.2 DESIGN PARAMETERS

It is proposed that the comfort cooling system specification be set at:

Outside Conditions: Summer (maximum) 30℃ db, 60% RH

Inside Conditions: Summer 22℃ db +/- 2℃.

2.3.3 CONTROL

Each space shall be provided with individual control for both temperature settings and time periods.

The cooling controls shall be suitable for integration into a Home Automation System, such as those produced by Crestron and AMX.

2.4 HOT WATER

It is anticipated that high pressure, high volume shower heads will be installed to each bathroom. The demand for hot water will therefore be significant, requiring significant storage and high heat recovery.

An unvented, indirect hot water cylinder shall be provided, sized to provide a minimum of three simultaneous 10 minute showers at 20 l/min flow each.

To avoid long ‘dead legs’ and to ensure fast delivery of hot water a pumped return circulation system shall be provided.

2.5 DRINKING WATER

Potable quality water shall be supplied to all outlets.

2.6 WATER TREATMENT

As the project is in a hard water area we propose the inclusion of an electromagnetic water conditioner on the boosted water supply, to assist in the prevention of scaling.

Softened water shall not be provided.

2.7 COLD WATER

This supply shall be pressure boosted to suit the requirements of the sanitary fittings specified.

2.8 SWIMMING POOL PLANT

A Swimming Pool water treatment/filtration plant package shall be provided to maintain the quality and clarity of the pool water. This package shall be designed and installed by a specialist contractor. The pool water plants shall be totally independent with separate filtration and water purification systems.

The Swimming Pool water system is likely to consist of one, or two GRP filter vessels with internally arranged collection silica sand based filters, pipework and valves. Differential pressure gauges shall be provided to indicate the state of the filter media and to determine when backwashing is required. Self-priming close coupled pumps shall be included to circulate water around the system. Pool water will be heated to the required temperature by inclusion of two heat exchangers. One shall be served by the central boiler plant, and the other by the Pool Hall heat pump air handling unit. Both shall be provided with automatic temperature control. An automatic water level top up arrangement shall be incorporated into the system to offset evaporative losses.

We envisage that the Swimming Pool will be provided with a thermal cover, this for use during periods that the clients are not in residence.