

M & E Energy Saving Proposals Tavistock Place Project

Ref	Energy Saving	Comments
1	BEMS – Remotely managed	BMS system located in the boiler house to control and monitor the heating, cooling and ventilation systems. The system will also provide information on energy usage, especially heating, lighting and office equipment. Heating and cooling to be controlled to prevent simultaneous operation.
2	Boilers – Control Systems	Sequencing the firing of boilers. Weather compensation. Optimum on/off control.
3	Boilers	Energy efficient low Nox condensing boilers with an efficiency of 90% plus.
4	Cooling – Pipework Insulation	All new cooling pipework to be insulated throughout to reduce the energy loss through the pipework to a minimum.
5	Cooling – Plant Replacement / Upgrade	The cooling units are to be Variable Refrigerant type utilising R-410A or R-407C refrigerants, which are harmless to the ozone layer when accidentally released in the atmosphere.
6	Heat Recovery	Local ventilation units installed in the office areas will contain specially developed heat exchange elements that modulate the temperature and humidity of the incoming fresh air to match the indoor conditions. Additional heating or cooling to the fresh air will not be required.
7	Heating – Discreet Controls and Valves.	Heating system to be zoned to suit the wings, main building, basement and new corridor, therefore start stop times can be varied for each. Temperature of the heating circuits can vary to suit the external conditions. Separate pumps and variable temperature control circuits to each zone.
8	Heating – Distribution	2-pipe zoned pipework.
9	Heating – Pipework Insulation	All pipework to be insulated throughout with mineral wool (approx 25mm thk) with foil face finish and label.
10	Heating – TRV's	Thermostatic radiator valves to be fitted to all radiators with the maximum setting corresponding to the maximum space temperature to reduce the possibility of over-heating.
11	Hot Water Solar Heating– Point of use Heaters	Solar hot water heating to be incorporated with supplementary point of use water heaters with timer control.

12	Power Factor Correction	Power Factor Correction allowed for incoming electrical supply above 0.95.
13	Lighting – Discrete Controls	Lighting to have automatic dimming facility to compensate for daylighting. Presence detection to control areas rather than individual switched, to reduce the feeling of working in a pool of light surrounded by darkness.
14	Lighting – Control Gear	Lighting to have high-frequency control gear and utilising T5 technology where possible.
15	Time Switches – Tamperproof	Time switches for water heaters to be tamperproof
16	Ventilation _ Fans	All ventilation fans to be centrifugal type, low noise and energy efficient.
17	Ventilation – Presence Controls	All toilet ventilation to be via presence detection.