

Project London Office Project no. 33  
 Engineer KAL Checked by Date checked  
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Rooms included Room 04 selected  
 Heating system Heating only (wet system)  
 Recirculation -  
 System resistance -  
 Fan efficiency -  
 Duct gains -  
 Heating controls Intermittently heated, fixed time start, One stat/room unshaded  
 Supply air temp. -  
 Air changes -  
 Plant capacity Plant ratio 1.2, boiler efficiency 70 %, transport factor 40  
 Heating fuel Gas, cost for heating 6 p/kWhr  
 Electricity Cost for pumps and fans 27 p/kWhr, lighting 27 p/kWhr  
 Heat losses Resultant temperatures, Complex heat loss model  
 HWS demand 4 l/person/day at 40 °C

*Plant operation and load factors (%)*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Season	Win	Win	Win	Win	-	-	-	-	-	Win	Win	Win
Plant ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Lighting (%)	100	100	100	100	90	90	75	90	90	100	100	100
People (%)	100	100	100	100	90	90	90	90	90	100	100	100
Machines (%)	100	100	100	100	100	100	100	100	100	100	100	100

	Annual building energy (GJ)	Annual plant energy (GJ)	Annual cost (pounds)
Heating	267.02	381.45	6,356
HWS	13.1	18.71	312
Pumps		13.14	985
Fans		0	0
Lighting	185.57	185.57	13,918
		<b>Total cost</b>	<b>21,571</b>

*Energy (GJ)*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Lighting	15.4644	15.4644	15.4644	15.4644	13.9179	13.9179	11.5983	13.9179	13.9179	15.4644	15.4644	15.4644
Fans	0	0	0	0	0	0	0	0	0	0	0	0
Pumps	1.8771	1.8771	1.8771	1.8771	0	0	0	0	0	1.8771	1.8771	1.8771
HWS	1.6269	1.6269	1.6269	1.6269	1.4642	1.4642	1.4642	1.4642	1.4642	1.6269	1.6269	1.6269
Heating	74.8375	68.2541	53.2767	30.9443	0	0	0	0	0	31.3222	53.6012	69.2152