A & G Partnership Ltd

Project	Delancy Street	G.O. No	4144
Title	Energy Calculations	Date	21st Sept 07

Total Energy used 465 + 54 + 33.6 = 553GJ/annum

allow say 5% 28GJ/annum = 581GJ/annum

10% sustainable energy = 58GJ/annum

This equals 16,111kW/hr per year

The solar roof panels provides 2.64 Gj/annum

Therefore we need 22 panels

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Rooms included	5 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	100 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	7.36	7.92	48
HWS	16.43	17.66	107
Pumps		0.69	13
Fans		0.00	0
Lighting	5.66	5.66	110
Total cost			**278**

A & G Partnership Ltd

Project	Delancy Street	G.O. No	4144
Title	Energy Calculations	Date	21st Sept 07

Common Areas

External 6 lights at 2 x 58w lamps

Energy used 696W

Corridors and Stairwells

Lighting Load 1026W

Total Common Area electrical load 1722W or 1.72kW

Operation time 24 hours/day 365days = 15067kW/hr per annum

This equates to 54241920kJ/annum or 54GJ/annum

Unit 4 Commercial unit 33.63 Gj/annum

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Rooms included	7 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	100 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	9.09	9.77	59
HWS	21.35	22.96	139
Pumps		0.80	16
Fans		0.00	0
Lighting	5.71	5.71	111
Total cost			**324**

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Rooms included	4 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	50 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	5.05	5.43	33
HWS	6.57	7.06	43
Pumps		0.48	9
Fans		0.00	0
Lighting	3.61	3.61	70
Total cost			155

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Rooms included	6 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	100 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	9.12	9.81	59
HWS	18.07	19.43	117
Pumps		0.75	15
Fans		0.00	0
Lighting	5.56	5.56	108
Total cost			299

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Rooms included	5 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	50 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	7.36	7.92	48
HWS	8.21	8.83	53
Pumps		0.68	13
Fans		0.00	0
Lighting	5.66	5.66	110
Total cost			**224**

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Rooms included	7 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	150 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	8.91	9.58	58
HWS	32.03	34.44	208
Pumps		0.80	16
Fans		0.00	0
Lighting	5.71	5.71	111
Total cost			392

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Rooms included	4 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	50 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	5.05	5.43	33
HWS	6.57	7.06	43
Pumps		0.48	9
Fans		0.00	0
Lighting	3.61	3.61	70
Total cost			155

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Rooms included	6 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	100 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	9.12	9.81	59
HWS	18.07	19.43	117
Pumps		0.75	15
Fans		0.00	0
Lighting	5.56	5.56	108
Total cost			299

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Rooms included	5 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	150 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	7.83	8.42	51
HWS	12.32	13.25	80
Pumps		0.69	13
Fans		0.00	0
Lighting	5.76	5.76	112
Total cost			256

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Rooms included	7 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	150 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	9.40	10.11	61
HWS	29.57	31.79	192
Pumps		0.83	16
Fans		0.00	0
Lighting	5.80	5.80	113
Total cost			**382**

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Rooms included	2 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	50 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	5.95	6.40	39
HWS	1.64	1.77	11
Pumps		0.42	8
Fans		0.00	0
Lighting	3.02	3.02	59
Total cost			116

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Rooms included	5 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	50 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	7.87	8.46	51
HWS	6.57	7.06	43
Pumps		0.69	13
Fans		0.00	0
Lighting	4.91	4.91	95
Total cost			203

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Rooms included	7 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	150 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	17.03	18.32	111
HWS	17.25	18.54	112
Pumps		1.26	25
Fans		0.00	0
Lighting	7.98	7.98	155
Total cost			**402**

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Rooms included	5 rooms selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/room shaded
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	100 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	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	50	50	50	50
Machines (%)	50	50	50	50	50	50	50	50	50	50	50	50

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	8.93	9.61	58
HWS	8.21	8.83	53
Pumps		0.68	13
Fans		0.00	0
Lighting	5.49	5.49	107
Total cost			**231**

A & G Partnership
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Date 21st Sep 2007

Project Sap Calcs
Engineer RG
File S:\Filenet\4144 - Delancey Street\Sap Calcs\

Checked by

Project no. -
Date checked

Rooms included	Room UNIT 4 selected
Heating system	Heating only (wet system)
Recirculation	-
System resistance	-
Fan efficiency	-
Duct gains	-
Heating controls	Intermittently heated, optimum start, One stat/floor
Supply air temp.	-
Air changes	-
Plant capacity	Plant ratio 1.2, boiler efficiency 93 %, transport factor 27
Heating fuel	Gas, cost for heating 2.173 p/kWhr
Electricity	Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr
Heat losses	Air temperatures, Simple heat loss model
HWS demand	190 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	off	off	off	off	ON	ON	ON
Lighting (%)	30	30	30	30	30	30	30	30	30	30	30	30
People (%)	30	30	30	30	30	30	30	30	30	30	30	30
Machines (%)	30	30	30	30	30	30	30	30	30	30	30	30

	Annual building energy (GJ)	**Annual plant energy (GJ)**	**Annual cost (pounds)**
Heating	10.33	11.11	67
HWS	20.60	22.15	134
Pumps		0.25	5
Fans		0.00	0
Lighting	0.12	0.12	2
Total cost			**208**

Project : Sap Calcs

Project name	Sap Calcs
Project number	-
Client	-
Architect	-
Quantity surveyor	-

Project does not use Full Building CAD model

Location	LONDON (Use daylight saving)
Heating season length	39 weeks
Occupancy	5 days/week
Cooling plant time ON	1 hrs
Cooling plant time OFF	24 hrs
Glass fraction for windows	0.85
Surroundings angle	0 °
Atmospheric clarity for site	Urban atmosphere
Direct solar rad. correction factor	0.85
Diffuse solar rad. correction factor	1.2
Wind speed for site	Summer 3.5 Winter 4 m/s
Terrain category for site	Urban (buildings> 15m)
Building height	15 m (Low rise)
Topography coefficient	1
Wind shielding	Urban
Building length:width	1
Azimuth of longest wall	0 °S
Roof pitch	Flat

Room reference 1 BATH RM

Data

Zone	*Floor*	*Mult.*
1	1	1

Dimensions

Floor area	*Height*
3.74 m²	2.400

Weight	**Occupancy** *In*	*Out*
Light	9	18

Occupants

No.	*Activity*
1	Seated at rest
Furniture	Average, Medium

Gains

	Lights	*% conv*
Lights	20.0	70
Casual	0.0	75

Additional gains

Gain	*Sensible*	*Latent*	*% conv*
1	0.0	0.0	75
	ON at 1.00 OFF at 24.00		
2	0.0	0.0	75
	ON at 1.00 OFF at 24.00		

Thermal design

Winter	*temp*	20.0 °C	
	%sat	40 %	1.0 *a/c*
Summer	*temp*	23.0 °C	
	%sat	50 %	0.5 *a/c*

Lighting

Illum level	*Glare index*	*W/plane height*	*Susp dist*	*Reflectance C*	*W*	*F*
500	19	0.85	0.00	70	50	20

Lighting control No control

Daylight factors -

Surface	Dimensions	Type	Surface data
Internal partition 1	1.6 x 2.4 m	3	Adj Favourites room : Bathroom
Internal partition 2	1.6 x 2.4 m	6	Adj Favourites room : Bathroom
Internal partition 3	2.2 x 2.4 m	3	Adj Favourites room : Bathroom
Internal partition 4	2.1 x 2.4 m	6	No heat flow

Room reference 1 BED 1

Data

Zone	Floor	Mult.
1	1	1

Dimensions

Floor area	Height
22.45 m²	2.400

Weight	Occupancy In	Occupancy Out
Light	9	18

Occupants

No.	Activity
2	Seated at rest
Furniture	Average, Medium

Gains

	Lights	% conv
Lights	20.0	70
Casual	0.0	75

Additional gains

Gain	Sensible	Latent	% conv
1	0.0	0.0	75
	ON at 1.00 OFF at 24.00		
2	0.0	0.0	75
	ON at 1.00 OFF at 24.00		

Thermal design

Winter	temp	18.0 °C	
	%sat	40 %	1.0 a/c
Summer	temp	23.0 °C	
	%sat	50 %	0.5 a/c

Lighting

Illum level	Glare index	W/plane height	Susp dist	Reflectance C	W	F
500	19	0.85	0.00	70	50	20

Lighting control: No control

Daylight factors: -

Surface	Dimensions	Type	Surface data
Exposed wall 1	4.2 x 2.4 m	23	Orientation = 320.0°
Window in wall 1	2 x 2.4 m	3	1 off, O/hang=0.00 Dist=0.00, Recess=0.00 m
Exposed wall 2	2.4 x 2.4 m	23	Orientation = 90.0°
Window in wall 2	2.1 x 2.4 m	3	1 off, O/hang=0.00 Dist=0.00, Recess=0.00 m
Internal partition 1	4.8 x 2.4 m	3	Adj Favourites room : Bedroom
Internal partition 2	4.8 x 2.4 m	6	Adj Favourites room : Bedroom
Internal partition 3	2.3 x 2.4 m	6	Adj Favourites room : Bedroom
Internal partition 4	1.6 x 2.4 m	6	Adj Favourites room : Bedroom
Internal partition 5	.7 x 2.4 m	6	No heat flow

Room reference 1 BED 2

Data

Zone	*Floor*	*Mult.*
1	1	1

Dimensions

Floor area	*Height*
12.70 m²	2.400

Weight
Light

Occupancy

In	*Out*
9	18

Occupants

No.	*Activity*
2	Seated at rest
Furniture	Average, Medium

Gains

	Lights	*% conv*
Lights	20.0	70
Casual	0.0	75

Additional gains

Gain	*Sensible*	*Latent*	*% conv*
1	0.0	0.0	75
	ON at 1.00 OFF at 24.00		
2	0.0	0.0	75
	ON at 1.00 OFF at 24.00		

Thermal design

Winter	*temp*	18.0 °C	
	%sat	40 %	1.0 *a/c*
Summer	*temp*	23.0 °C	
	%sat	50 %	0.5 *a/c*

Lighting

Illum level	*Glare index*	*W/plane height*	*Susp dist*	*Reflectance C*	*W*	*F*
500	19	0.85	0.00	70	50	20

Lighting control No control

Daylight factors -

Surface	Dimensions	Type	Surface data
Exposed wall 1	2.8 x 2.4 m	23	Orientation = 0.0°
Window in wall 1	2.6 x 2.4 m	3	1 off, O/hang=0.00 Dist=0.00, Recess=0.00 m
Internal partition 1	4.8 x 2.4 m	6	Adj Favourites room : Bedroom
Internal partition 2	4.8 x 2.4 m	3	Adj Favourites room : Bedroom
Internal partition 3	2.8 x 2.4 m	6	Adj Favourites room : Bedroom