A & G Partnership Ltd

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A & G Partnership

95 Buckingham Palace Road London, SW1W ORP 0207 828 8200

Date 21st Sep 2007

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Rooms included Heating system

Recirculation System resistance

Fan efficiency Duct gains

Heating controls

Supply air temp. Air changes

Plant capacity

Heating fuel

Electricity Heat losses

HWS demand

5 rooms selected

Heating only (wet system)

Intermittently heated, optimum start, One stat/room shaded

Plant ratio 1.2, boiler efficiency 93 %, transport factor 27

Gas, cost for heating 2.173 p/kWhr

Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr

Air temperatures, Simple heat loss model

100 l/person/day at 40 °C

Season Plant ON/OFF Lighting (%)	Win ON 50	Win ON 50	<i>Mar</i> Win ON 50	Apr Win ON	May - ON	Jun - off	<i>Jul</i> - off	Aug - off	Sep - off	Oct Win ON	<i>Nov</i> Win ON	Dec Win ON
People (%) Machines (%)	50 50	50 50	50 50	30 50 50	30 50 50	30 50 50	20 50 50	20 50 50	30 50 50	50 50 50	50 50 50	50 50 50

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

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A & G Partnership

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Date 21st Sep 2007

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Rooms included 7 rooms selected

Heating system Heating only (wet system) Recirculation

System resistance

Fan efficiency Duct gains

Heating controls

Supply air temp. Air changes

Plant capacity

Heating fuel

Electricity Heat losses

HWS demand

Plant ratio 1.2, boiler efficiency 93 %, transport factor 27

Gas, cost for heating 2.173 p/kWhr Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr

Intermittently heated, optimum start, One stat/room shaded

Air temperatures, Simple heat loss model

100 l/person/day at 40 °C

Plant operation and load factors (%)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	0
Season	Win	Win	Win	Win	_	•		, .ug	Cop	_		Dec
Plant ON/OFF	ON	ON	_				-	-	-	Win	Win	Win
			ON	ON	ON	off	off	off	off	ON	ON	ON
Lighting (%)	50	50	50	30	30	30	20	20	30	50	50	_
People (%)	50	50	50	50	50	50	50			_ •		50
Machines (%)	50	50				-		50	50	50	50	50
(70)	50	JŲ	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 Pumps	21.35	22.96	139
Fans		0.80	16
Lighting	E 74	0.00	Ó
gg	5.71	5.71	111
		Total cost	324

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Rooms included 4 rooms selected Heating system

Recirculation System resistance

Fan efficiency Duct gains

Heating controls

Supply air temp. Air changes

Plant capacity Heating fuel

Electricity Heat losses

HWS demand

Heating only (wet system)

Intermittently heated, optimum start, One stat/room shaded

Plant ratio 1.2, boiler efficiency 93 %, transport factor 27

Gas, cost for heating 2.173 p/kWhr Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr

Air temperatures, Simple heat loss model

50 l/person/day at 40 °C

	Jan	Feb	Mar	Apr	1400	4	4.4	_	1.07			
Season				$\neg \mu$	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jeasuri	Win	Win	Win	Win	-	_	_		•	_		
Plant ON/OFF	ON	ON	011				•	-	-	Win	Win	Win
	OIT	ON	ON	ON	ON	off	off	off	off	ON	ON	ONL
Lighting (%)	50	50	50	30	30	20	00	_		0.1	ON	ON
People (%)	50	_ _	_	50	30	30	20	20	30	50	50	50
	50	50	50	50	50	50	50	50	EΛ	50		
Machines (%)	50	50	EΛ	50	_		00	30	50	50	50	50
170)	30	5 0	50	50	50	50	50	50	50	50	50	50
								- 3		~	J U	5 0

Heating	Annual building energy (GJ)	Annual plant energy (GJ)	Annual cost (pounds)
HWS	5.05	5.43	33
Pumps	6.57	7.06	43
Fans		0.48	9
Lighting	264	0.00	0
	3.61	3.61	70
		Total cost	155

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Rooms included 6 rooms selected

Heating system

Recirculation

System resistance

Fan efficiency

Duct gains

Heating controls

Supply air temp.

Air changes

Plant capacity

Heating fuel

Electricity

Heat losses

HWS demand

Heating only (wet system)

Intermittently heated, optimum start, One stat/room shaded

Plant ratio 1.2, boiler efficiency 93 %, transport factor 27

Gas, cost for heating 2.173 p/kWhr

Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr

Air temperatures, Simple heat loss model

100 l/person/day at 40 °C

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Season	Win	Win	Win	Win	_	-	_		-	Win	Win	
Plant ON/OFF	ON	ON	ON	ON	ON	off	off	off		_		Win
Lighting (%)	50	50	50	30	30				off	ON	ON	ON
People (%)	50			- •		30	20	20	30	50	50	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

	_				_				· - (· -)			
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Season	Win	Win	Win	Win	-	-	-		_	Win	Win	
Plant ON/OFF	ON	ON	ON	ON	ON	off	off	off	off	_	_	Win
Lighting (%)	50	50	50	30	30					ON	ON	ON
People (%)	50	50			_	30	20	20	30	50	50	50
Machines (%)			50	50	50	50	50	50	50	50	50	50
Macrimes (76)	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 Fans		0.68	13
Lighting		0.00	0
rigining	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 Electricity

Gas, cost for heating 2.173 p/kWhr 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

		Jan	red	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Season	Win	Win	Win	Win		_	_	•	•		+	
	Plant ON/OFF	ON	ON	ON					-	-	Win	Win	Win
				OIA	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			- +		
	Machines (%)	50	FO			_		30	50	50	50	50	50
١	11100111100 (70)	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
HW\$	32.03	34.44	208
Pumps		0.80	16
Fans Lighting		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

Heating fuel

Plant ratio 1.2, boiler efficiency 93 %, transport factor 27

Gas, cost for heating 2.173 p/kWhr

Electricity Heat losses

Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr Air temperatures, Simple heat loss model

HWS demand

50 l/person/day at 40 °C

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Season	Win	Win	Win	Win	_	_	_	-	_	Win	Win	
Plant ON/OFF	ON	ON	ON	ON	ON	-#				_		Win
·			_		OIA	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

A & G Partnership

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Rooms included 6 rooms selected

Heating system

Heating only (wet system)

Recirculation

System resistance Fan efficiency

•

Duct gains

-

Heating controls
Supply air temp

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
Heat losses

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

	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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95 Buckingham Palace Road London, SW1W 0RP

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Date checked

Rooms included 5 rooms selected Heating system Heating only (wet system) Recirculation System resistance Fan efficiency Duct gains

Heating controls

Supply air temp. Air changes

Intermittently heated, optimum start, One stat/room shaded

Plant capacity Heating fuel

Plant ratio 1.2, boiler efficiency 93 %, transport factor 27

Gas, cost for heating 2.173 p/kWhr

Electricity Heat losses

Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr

Air temperatures, Simple heat loss model

HWS demand

150 l/person/day at 40 °C

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Season	Win	Win	Win	Win	•	_	_	_	•	Win		
Plant ON/OFF	ON	ON	ON	ON	ON	off			- 66	_	Win	Win
Lighting (%)	50	50	50				off	off	off	ON	ON	ON
People (%)				30	30	30	20	20	30	50	50	50
• • •	50	50	50	50	50	50	50	50	50	50	50	50
macnines (%)	50	50	50	, 50	50	50	50	50	50	50	50	
Machines (%)	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

Recirculation

System resistance Fan efficiency

Duct gains

Heating controls

Supply air temp.

Air changes

Plant capacity Heating fuel

Electricity

Heat losses

HWS demand

Heating only (wet system)

Intermittently heated, optimum start, One stat/room shaded

Plant ratio 1.2, boiler efficiency 93 %, transport factor 27

Gas, cost for heating 2.173 p/kWhr

Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr Air temperatures, Simple heat loss model

150 l/person/day at 40 °C

_	Jan	ren	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Mari	Δ.
Season	Win	Win	Win	Win	_			, lug	Oep		Nov	Dec
Plant ON/OFF	ON	211			-	~	-	-	-	Win	Win	Win
	ON	ON	ON	ON	ON	off	off	off	off	ON	ON	
Lighting (%)	50	50	50	30	30	20		_			UN	ON
People (%)	50				30	30	20	20	30	50	50	50
	50	50	50	50	50	50	50	50	50	50	EΩ	
Machines (%)	50	50	50	50	EΛ				50	30	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	(podilas) 61
HWS Pumps	29.57	31.79	192
Fans		0.83	16
Lighting	5.80	0.00	0
	4.40	5.80	113
		Total cost	382

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Date 21st Sep 2007

Project Engineer

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RG

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Rooms included Heating system

Recirculation

System resistance Fan efficiency

Duct gains

Heating controls Supply air temp.

Air changes

Plant capacity Heating fuel

Electricity Heat losses

HWS demand

2 rooms selected

Heating only (wet system)

Intermittently heated, optimum start, One stat/room shaded

Plant ratio 1.2, boiler efficiency 93 %, transport factor 27

Gas, cost for heating 2.173 p/kWhr

Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr

Air temperatures, Simple heat loss model 50 l/person/day at 40 °C

	Jan	Feb	Mar	Apr	May	Jun	t. d	A				
Season	Win	Win		•	way	Juii	Jul	Aug	Sep	Oct	Nov	Dec
	**!!!	AAIFI	Win	Win	-	-	-	•	-	Win	Win	Win
Plant ON/OFF	ON	ON	ON	ON	ON	off	off	~#£	- 65		-	_
Lighting (%)	50	50	50					off	off	ON	ON	ON
,		30	50	30	30	30	20	20	30	50	50	50
People (%)	50	50	50	50	50	50	50	50	5 0			
Machines (%)	50	50	50	· FO		_		30	50	50	50	50
11-7	70	00	J 0	50	50	50	50 .	50	50	50	50	50

Heating	Annual building energy (GJ)	Annual plant energy (GJ)	Annual cost (pounds)
•	5.95	6.40	20
HWS Pumps	1.64	1.77	39 11
Fans		0.42	8
Lighting		0.00	0
99	3.02	3.02	59
		Total cost	116

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Rooms included 5 rooms selected Heating system

Recirculation

Heating only (wet system)

System resistance Fan efficiency

Duct gains

Heating controls Supply air temp.

Intermittently heated, optimum start, One stat/room shaded

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 Heat losses

Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr Air temperatures, Simple heat loss model

HWS demand

50 l/person/day at 40 °C

	4 _				•				''			
0	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Season	Win	Win	Win	Win	-	-	_	_	•			
Plant ON/OFF	ON	ON	ON	ON	ON	off		-	-	Win	Win	Win
Lighting (%)	50	50		-		-	off	off	off	ON	ON	ON
People (%)	_		50	30	30	30	20	20	30	50	50	50
• • •	50	50	50	50	50	50	50	50	50	50	50	
Machines (%)	50	50	50	-50	50	50	50	_				50
				,••	-	JŲ	OU	50	50	50	50	50

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

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of .

Page

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Rooms included

7 rooms selected

Heating system

Recirculation

System resistance

Fan efficiency Duct gains

Heating controls

Supply air temp.

Air changes

Plant capacity

Heating fuel

Electricity Heat losses

HWS demand

Heating only (wet system)

Intermittently heated, optimum start, One stat/room shaded

Plant ratio 1.2, boiler efficiency 93 %, transport factor 27

Gas, cost for heating 2.173 p/kWhr Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr

Air temperatures, Simple heat loss model

150 l/person/day at 40 °C

	Jan	red	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Doo
Season	Win	Win	Win	Win	-	-	-	_	•			Dec
Plant ON/OFF	ON	ON	ON					-	-	Win	Win	Win
•				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					
Machines (%)	50	50	50					50	50	50	50	50
170)	50	50	50	50	50	50	50	50	50	50	50	50

1 1 4	Annual building energy (GJ)	Annual plant energy (GJ)	Annual cost (pounds)
Heating	17.03	18.32	111
HWS Pumps	17.25	18.54	112
Fans		1.26	25
Lighting		0.00	0
righting	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

Supply air temp.

Air changes

Plant capacity

Heating fuel

Electricity

Heat losses HWS demand

Plant ratio 1.2, boiler efficiency 93 %, transport factor 27

Intermittently heated, optimum start, One stat/room shaded

Gas, cost for heating 2.173 p/kWhr

Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr

Air temperatures, Simple heat loss model

100 l/person/day at 40 °C

	Jan	red	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	_
Lighting (%)	50	50	50	30	30	30	20	20	30			ON
People (%)	50	50	50	50	50	50				50	50	50
Machines (%)	50	50	50				50	50	50	50	50	50
	50	30	30	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

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Rooms included Room UNIT 4 selected Heating system

Recirculation System resistance Fan efficiency

Duct gains

Heating controls Supply air temp.

Air changes Plant capacity

Heating fuel Electricity Heat losses

HWS demand

Heating only (wet system)

Intermittently heated, optimum start, One stat/floor

Plant ratio 1.2, boiler efficiency 93 %, transport factor 27

Gas, cost for heating 2.173 p/kWhr

Cost for pumps and fans 7 p/kWhr, lighting 7 p/kWhr

Air temperatures, Simple heat loss model

190 l/person/day at 40 °C

	Jan	Feb	Mar	Apr	May	Jun"	Jat	Aug	Sep	Oct	Nov	Dec
Season	Win	Win	Win	· Win		_	-	•	•			
Plant ON/OFF	ON	ON	ON					-	-	Win	Win	Win
				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		- •	
Machines (%)	30	30	30		- •		_			30	30	30
	5 0	50	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

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Date 21st Sep 2007

of

Page

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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

Project Sap Calcs

Room reference 1 BATH RM

Zone 1	- Data Floati 1		Mult.	Floor area 3.74 m²	imension	n s ————————————————————————————————————			<i>/eight</i> ∟ight	0 In 9	ССПБ	ancy Out 18	
 No. 1		pants octivity ded at r			- Gains Lights	% conv	•	Gain	- Additio Sensible		i ns -	% cc	 >NV
Furniture	_		est ledium	Lights Casual	20.0 0.0	70 75		2	0.0 ON at 1.00 0.0 ON at 1.00	OFF a	0.0	75	
Winter Summer	temp	20.0 40 % 23.0	°C	1.0 a/c 0.5 a/c	l Lig	llum evel 500 hting con ylight fact		<i>W/p he</i> 0.	Lighting - plane ight	Susp dist 0.00	·· <u> </u>	eflecta W	nce F 20

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

Project Sap Calcs

Room reference 1 BED 1

Zone	– Data				imensior	ns ——				(Occup	ancv	
2011 8 1	Floo	or .	Mult.	Floor area		Heig		И	Veight	_	_	Out	
•	•		1	22.45 m²		2.40	0	I	Light	(9	18	
	Occup	ants		_	- Gains				– Additic	anal a	aine		
No.	A	ctivity	/		Lights	% conv		Gain	Sensible	-	.atent	% co	ากง
2	Seat			Lights	20.0	70		1	0.0		0.0	75	
Furniture	Aver	age, l	Medium	_				(ON at 1.00	OFF		-	
				Casual	0.0	75		2	0.0		0.0	75	j
								(ON at 1.00	OFF	at 24.(00	
	T	herm	ai design				· · · · · · · · · · · · · · · · · · ·		Lighting				
Winter	temp	18.0			ı	Illum	Glare		olane	Susp	F	Reflecta	ance
C	%sat			1.0 a/c	1	level	index	he	eight	dist	Ċ	_	F
Summer	temp	23.0				500	19	0.	.85	0.00	7		20
	%sat	50 °	%	0.5 <i>a/c</i>	Lig	ghting con	trol	No	control		·		
					Da	aylight faci	ors	-					

Surface	Dimensions	Туре	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 r	
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	

Project Sap Calcs

Room reference 1 BED 2

	— Dat		. <u>-</u>	—— D	imensior	ns ——					0		
<i>Zone</i> 1	Flo 1	or	<i>Mult.</i> 1	<i>Floor area</i> 12.70 m²		Heig 2.40			<i>Veight</i> Light		Occup 9	Out 18	
No. 2 Furniture	Seat	<i>ctivity</i> ed at r		Lights Casual	Gains Lights 20.0	% conv 70 75	•	2	- Addition Sensible 0.0 ON at 1.00 ON at 1.00 ON at 1.00	OFF	Latent 0.0 at 24.0	75	5
Winter	temp %sat temp	18.0 ° 40 %	C	1.0 a/c 0.5 a/c	l Lig	llum evel 500 hting con ylight fac		<i>W/p</i> <i>he</i> 0.	Lighting plane ight .85 control	Susp dist 0.00	C		ance F 20

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