Design Parameters:

City Name	**Melbourne**	
Location	**Australia**	
Latitude	**-37.8**	Deg.
Longitude	**-144.8**	Deg.
Elevation	**35.0**	m
Summer Design Dry-Bulb	**34.5**	°C
Summer Coincident Wet-Bulb	**21.0**	°C
Summer Daily Range	**11.5**	°K
Winter Design Dry-Bulb	**4.5**	°C
Winter Design Wet-Bulb	**0.9**	°C
Atmospheric Clearness Number	**1.00**	
Average Ground Reflectance	**0.20**	
Soil Conductivity	**1.385**	W/(m-°K)
Local Time Zone (GMT +/- N hours)	**-10.0**	hours
Consider Daylight Savings Time	**No**	
Simulation Weather Data	**noneN/A**	
Current Data is	**1993 Carrier Australia**	
Design Cooling Months	**January to December**	

Design Day Maximum Solar Heat Gains

(The MSHG values are expressed in W/m²)

Month	N	NNE	NE	ENE	E	ESE	SE	SSE	S
January	362.7	439.2	597.7	719.8	772.7	710.4	578.5	366.3	136.9
February	504.2	562.9	676.4	739.4	744.7	641.9	444.0	233.4	123.1
March	626.8	663.4	729.2	739.1	677.1	531.2	295.2	100.0	100.0
April	695.0	710.2	718.9	676.4	541.8	374.4	135.3	75.9	75.9
May	711.2	705.8	679.6	600.1	439.7	244.8	59.6	59.6	59.6
June	707.7	697.8	660.5	554.5	400.2	174.9	52.3	52.3	52.3
July	706.2	701.8	676.9	588.3	438.2	222.1	56.7	56.7	56.7
August	688.4	702.5	711.5	671.2	533.7	368.5	131.2	69.9	69.9
September	606.0	649.1	717.6	733.7	676.2	514.4	321.4	90.6	90.6
October	488.7	553.6	662.9	745.6	726.4	639.1	463.7	208.4	112.2
November	354.1	432.8	584.6	719.2	758.7	722.5	577.5	352.1	130.3
December	303.0	381.5	551.7	702.6	763.1	742.9	621.5	404.6	171.5
Month	**SSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**	**HOR**	**Mult**
January	364.1	580.8	707.3	771.2	721.7	597.3	439.6	946.6	1.00
February	230.3	458.1	634.2	745.4	744.4	677.7	565.2	861.3	1.00
March	100.0	299.4	532.0	675.1	741.1	728.0	662.5	726.7	1.00
April	75.9	153.1	356.9	552.1	677.7	721.8	709.9	546.0	1.00
May	59.6	59.6	238.4	448.4	583.2	687.2	712.9	408.3	1.00
June	52.3	52.3	190.1	399.4	547.5	661.8	702.0	349.6	1.00
July	56.7	56.7	217.3	440.5	583.5	678.8	704.1	395.1	1.00
August	69.9	143.7	359.6	541.4	673.3	712.3	700.9	527.0	1.00
September	90.6	315.9	531.3	658.9	737.9	707.6	643.6	705.9	1.00
October	223.4	458.0	642.9	729.6	743.2	659.8	550.5	838.3	1.00
November	365.1	565.5	721.0	769.2	712.2	590.4	428.4	933.2	1.00
December	417.6	615.1	735.7	773.7	696.5	555.7	380.0	966.3	1.00

Mult. = User-defined solar multiplier factor.

External / Internal Wall

Wall Details

Outside Surface Color ..... **Dark**

Absorptivity **0.900**

Overall U-Value ..... **0.362** W/(m²-°K)

Wall Layers Details (Inside to Outside)

Layers	Thickness mm	Density kg/m³	Specific Ht. kJ / (kg - °K)	R-Value (m²-°K)/W	Weight kg/m²
Inside surface resistance	0.000	0.0	0.00	0.12064	0.0
90mm Timber Studs+Insu.	90.000	0.0	0.00	2.50000	0.0
10mm Plasterboard Inner	10.000	608.7	0.84	0.04167	6.1
10mm Plasterboard Outer	10.000	608.7	0.84	0.04167	6.1
Outside surface resistance	0.000	0.0	0.00	0.05864	0.0
Totals	**110.000**	**-**		**2.76262**	**12.2**

Roof

Roof Details

Outside Surface Color ..... **Dark**

Absorptivity **0.900**

Overall U-Value ..... **0.125** W/(m²-°K)

Roof Layers Details (Inside to Outside)

Layers	Thickness mm	Density kg/m³	Specific Ht. kJ / (kg - °K)	R-Value (m²-°K)/W	Weight kg/m²
Inside surface resistance	0.000	0.0	0.00	0.12064	0.0
Steel deck	0.853	7833.0	0.50	1.00000	6.7
Board insulation	25.400	32.0	0.92	5.00000	0.8
Built-up roofing	9.540	1121.3	1.47	1.82000	10.7
Outside surface resistance	0.000	0.0	0.00	0.05864	0.0
Totals	**35.794**	**-**		**7.99928**	**18.2**

FIXED Window 0.2 m^2

Window Details:

Detailed Input	**No**	
Height	**1.00**	m
Width	**0.20**	m
Overall U-Value	**3.050**	W/(m²-°K)
Overall Shade Coefficient	**0.530**	

Hinged Window 0.2 m^2

Window Details:

Detailed Input	**No**	
Height	**1.00**	m
Width	**0.20**	m
Overall U-Value	**4.500**	W/(m²-°K)
Overall Shade Coefficient	**0.590**	

SLIDING Window 0.2 m^2

Window Details:

Detailed Input	**No**	
Height	**1.00**	m
Width	**0.20**	m
Overall U-Value	**3.300**	W/(m²-°K)
Overall Shade Coefficient	**0.520**	

EW BASEMENT MEDIA ROOM

1. General Details:

Floor Area ..... **34.2** m²

Avg. Ceiling Height ..... **2.7** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage ..... **EDUCATION: Media center**

OA Requirement 1 ..... **5.0** L/s/person

OA Requirement 2 ..... **0.60** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **3.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **150.0** Watts

Schedule ..... **Sample Schedule**

2.3. Electrical Equipment:

Wattage ..... **1600.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **5.0** People

Activity Level ..... **Medium Work**

Sensible ..... **86.5** W/person

Latent ..... **133.3** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
NNW	9.3	0	0	0

3.1. Construction Types for Exposure NNW

Wall Type ..... **External / Internal Wall**

4. Roofs, Skylights:

(No Roof or Skylight data).

5. Infiltration:

Design Cooling ..... **50.00** L/s

Design Heating ..... **50.00** L/s

Energy Analysis ..... **50.00** L/s

Infiltration occurs at all hours.

6. Floors:

Type ..... **Slab Floor On Grade**

Floor Area ..... **34.2** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Exposed Perimeter ..... **24.7** m

Edge Insulation R-Value ..... **0.00** (m²-°K)/W

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **48.6** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details:

Partition Type ..... **Ceiling Partition**

Area ..... **34.2** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

EW Master Bed Room

1. General Details:

Floor Area ..... **72.0** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage ..... **HOTEL: Bedroom/living room**

OA Requirement 1 ..... **2.5** L/s/person

OA Requirement 2 ..... **0.30** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **5.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **75.0** Watts

Schedule ..... **Sample Schedule**

2.3. Electrical Equipment:

Wattage ..... **400.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **2.0** People

Activity Level ..... **Sedentary Work**

Sensible ..... **82.1** W/person

Latent ..... **79.1** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
ENE	19.8	77	0	0
SSE	29.4	42	0	0
WSW	20.5	8	0	0

3.1. Construction Types for Exposure ENE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

3.2. Construction Types for Exposure SSE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

3.3. Construction Types for Exposure WSW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **SLIDING Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	72.0	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Floor Above Unconditioned Space**

Floor Area ..... **72.0** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Unconditioned Space Max Temp. ..... **35.0** °C

Ambient at Space Max Temp. ..... **34.5** °C

Unconditioned Space Min Temp. ..... **12.7** °C

Ambient at Space Min Temp. ..... **4.5** °C

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **34.3** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details: **(No partition data).**

EW Open Office

1. General Details:

Floor Area ..... **50.0** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage ..... **OFFICE: Office space**

OA Requirement 1 ..... **2.5** L/s/person

OA Requirement 2 ..... **0.30** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **5.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **150.0** Watts

Schedule ..... **Sample Schedule**

2.3. Electrical Equipment:

Wattage ..... **1600.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **3.0** People

Activity Level ..... **Sedentary Work**

Sensible ..... **82.1** W/person

Latent ..... **79.1** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
ENE	19.8	77	0	0
NNW	24.0	33	0	0
WSW	9.7	0	0	0
SSW	6.3	19	0	0
SSE	7.0	19	0	0
NNE	9.6	35	0	0

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
SSW	6.9	25	0	0

3.1. Construction Types for Exposure ENE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

3.2. Construction Types for Exposure NNW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

3.3. Construction Types for Exposure WSW

Wall Type ..... **External / Internal Wall**

3.4. Construction Types for Exposure SSW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

3.5. Construction Types for Exposure SSE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

3.6. Construction Types for Exposure NNE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **SLIDING Window 0.2 m^2**

3.7. Construction Types for Exposure SSW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	50.0	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Floor Above Unconditioned Space**

Floor Area ..... **50.0** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Unconditioned Space Max Temp. ..... **35.0** °C

Ambient at Space Max Temp. ..... **34.5** °C

Unconditioned Space Min Temp. ..... **12.7** °C

Ambient at Space Min Temp. ..... **4.5** °C

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **23.3** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details:

(No partition data).

EW Toilet Area

1. General Details:

Floor Area ..... **26.2** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage ..... **GENERAL: Corridor**

OA Requirement 1 ..... **0.0** L/s/person

OA Requirement 2 ..... **0.30** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **5.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **75.0** Watts

Schedule ..... **Sample Schedule**

2.3. Electrical Equipment:

Wattage ..... **1000.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **2.0** People

Activity Level ..... **Sedentary Work**

Sensible ..... **82.1** W/person

Latent ..... **79.1** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
WSW	14.3	7	0	0

3.1. Construction Types for Exposure WSW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **SLIDING Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	26.2	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Floor Above Unconditioned Space**

Floor Area ..... **26.2** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Unconditioned Space Max Temp. ..... **35.0** °C

Ambient at Space Max Temp. ..... **34.5** °C

Unconditioned Space Min Temp. ..... **12.7** °C

Ambient at Space Min Temp. ..... **4.5** °C

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **52.0** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details:

(No partition data).

Exst. Entrance

1. General Details:

Floor Area ..... **6.0** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage ..... **HOTEL: Lobby/prefunction**

OA Requirement 1 ..... **3.8** L/s/person

OA Requirement 2 ..... **0.30** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **5.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **0.0** Watts

Schedule ..... **None**

2.3. Electrical Equipment:

Wattage ..... **0.0** Watts

Schedule ..... **None**

2.4. People:

Occupancy ..... **2.0** People

Activity Level ..... **Sedentary Work**

Sensible ..... **82.1** W/person

Latent ..... **79.1** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
SSW	5.7	23	0	0

3.1. Construction Types for Exposure SSW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **Hinged Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	6.0	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Slab Floor On Grade**

Floor Area ..... **6.0** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Exposed Perimeter ..... **12.0** m

Edge Insulation R-Value ..... **0.00** (m²-°K)/W

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **10.1** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details:

(No partition data).

Exst. Family

1. General Details:

Floor Area ..... **50.0** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage **CORRECTIONAL FACILITY: Day room**

OA Requirement 1 ..... **2.5** L/s/person

OA Requirement 2 ..... **0.30** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **10.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **150.0** Watts

Schedule ..... **Sample Schedule**

2.3. Electrical Equipment:

Wattage ..... **400.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **15.0** People

Activity Level ..... **Sedentary Work**

Sensible ..... **82.1** W/person

Latent ..... **79.1** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
NNE	19.5	65	0	0
WNW	24.3	12	0	0
SSW	16.2	22	0	0

3.1. Construction Types for Exposure NNE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **SLIDING Window 0.2 m^2**

3.2. Construction Types for Exposure WNW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

3.3. Construction Types for Exposure SSW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **SLIDING Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	50.0	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Slab Floor On Grade**

Floor Area ..... **50.0** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Exposed Perimeter ..... **28.3** m

Edge Insulation R-Value ..... **0.00** (m²-°K)/W

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **26.0** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details: **(No partition data).**

Exst. Kitchen + Meal

1. General Details:

Floor Area ..... **31.3** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage .... **FOOD SERVICE: Kitchen (cooking)**

OA Requirement 1 ..... **3.8** L/s/person

OA Requirement 2 ..... **0.60** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **13.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **0.0** Watts

Schedule ..... **None**

2.3. Electrical Equipment:

Wattage ..... **3000.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **2.0** People

Activity Level ..... **Sedentary Work**

Sensible ..... **82.1** W/person

Latent ..... **79.1** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **1000** W

Schedule ..... **Sample Schedule**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
NNE	12.6	55	0	0
ESE	3.6	8	0	0
WNW	3.6	9	0	0

3.1. Construction Types for Exposure NNE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **Hinged Window 0.2 m^2**

3.2. Construction Types for Exposure ESE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

3.3. Construction Types for Exposure WNW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	31.3	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Slab Floor On Grade**

Floor Area ..... **31.3** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Exposed Perimeter ..... **23.6** m

Edge Insulation R-Value ..... **0.00** (m²-°K)/W

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **12.6** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details: **(No partition data).**

Exst. Studio

1. General Details:

Floor Area ..... **49.0** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage **CORRECTIONAL FACILITY: Day room**

OA Requirement 1 ..... **2.5** L/s/person

OA Requirement 2 ..... **0.30** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **10.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **150.0** Watts

Schedule ..... **Sample Schedule**

2.3. Electrical Equipment:

Wattage ..... **400.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **15.0** People

Activity Level ..... **Sedentary Work**

Sensible ..... **82.1** W/person

Latent ..... **79.1** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
NNE	19.5	65	0	0
ESE	19.0	12	0	0
SSW	15.8	22	0	0

3.1. Construction Types for Exposure NNE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **SLIDING Window 0.2 m^2**

3.2. Construction Types for Exposure ESE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

3.3. Construction Types for Exposure SSW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **SLIDING Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	49.0	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Slab Floor On Grade**

Floor Area ..... **49.0** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Exposed Perimeter ..... **28.1** m

Edge Insulation R-Value ..... **0.00** (m²-°K)/W

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **31.0** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details: **(No partition data).**

WW Bed 2

1. General Details:

Floor Area ..... **20.1** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage ..... **HOTEL: Bedroom/living room**

OA Requirement 1 ..... **2.5** L/s/person

OA Requirement 2 ..... **0.30** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **5.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **75.0** Watts

Schedule ..... **Sample Schedule**

2.3. Electrical Equipment:

Wattage ..... **400.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **2.0** People

Activity Level ..... **Sedentary Work**

Sensible ..... **82.1** W/person

Latent ..... **79.1** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
NNW	11.2	25	8	0
ENE	24.0	25	8	0

3.1. Construction Types for Exposure NNW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

2nd Window Type ..... **SLIDING Window 0.2 m^2**

3.2. Construction Types for Exposure ENE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

2nd Window Type ..... **SLIDING Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	20.1	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Slab Floor On Grade**

Floor Area ..... **20.1** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Exposed Perimeter ..... **16.2** m

Edge Insulation R-Value ..... **0.00** (m²-°K)/W

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **17.4** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details:

(No partition data).

WW Bed 3

1. General Details:

Floor Area ..... **15.4** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage ..... **HOTEL: Bedroom/living room**

OA Requirement 1 ..... **2.5** L/s/person

OA Requirement 2 ..... **0.30** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **5.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **75.0** Watts

Schedule ..... **Sample Schedule**

2.3. Electrical Equipment:

Wattage ..... **400.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **2.0** People

Activity Level ..... **Sedentary Work**

Sensible ..... **82.1** W/person

Latent ..... **79.1** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
NNW	10.7	25	8	0

3.1. Construction Types for Exposure NNW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

2nd Window Type ..... **SLIDING Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	15.4	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Slab Floor On Grade**

Floor Area ..... **15.4** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Exposed Perimeter ..... **16.2** m

Edge Insulation R-Value ..... **0.00** (m²-°K)/W

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **26.1** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details:

(No partition data).

WW Bed 4

1. General Details:

Floor Area ..... **15.4** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage ..... **HOTEL: Bedroom/living room**

OA Requirement 1 ..... **2.5** L/s/person

OA Requirement 2 ..... **0.30** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **5.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **75.0** Watts

Schedule ..... **Sample Schedule**

2.3. Electrical Equipment:

Wattage ..... **400.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **2.0** People

Activity Level ..... **Sedentary Work**

Sensible ..... **82.1** W/person

Latent ..... **79.1** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
NNW	10.5	25	8	0

3.1. Construction Types for Exposure NNW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

2nd Window Type ..... **SLIDING Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	15.4	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Slab Floor On Grade**

Floor Area ..... **15.4** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Exposed Perimeter ..... **16.2** m

Edge Insulation R-Value ..... **0.00** (m²-°K)/W

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **36.0** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details:

(No partition data).

WW Bed 5

1. General Details:

Floor Area ..... **16.5** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage ..... **HOTEL: Bedroom/living room**

OA Requirement 1 ..... **2.5** L/s/person

OA Requirement 2 ..... **0.30** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **5.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **75.0** Watts

Schedule ..... **Sample Schedule**

2.3. Electrical Equipment:

Wattage ..... **400.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **2.0** People

Activity Level ..... **Sedentary Work**

Sensible ..... **82.1** W/person

Latent ..... **79.1** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
NNW	11.3	25	8	0
WSW	14.1	25	8	0

3.1. Construction Types for Exposure NNW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

2nd Window Type ..... **SLIDING Window 0.2 m^2**

3.2. Construction Types for Exposure WSW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

2nd Window Type ..... **SLIDING Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	16.5	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Slab Floor On Grade**

Floor Area ..... **16.5** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Exposed Perimeter ..... **16.4** m

Edge Insulation R-Value ..... **0.00** (m²-°K)/W

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **24.6** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details:

(No partition data).

WW Laundry+Hall Corr.

1. General Details:

Floor Area ..... **19.4** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage **HOTEL: Laundry room within dwelling unit**

OA Requirement 1 ..... **2.5** L/s/person

OA Requirement 2 ..... **0.60** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **14.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **0.0** Watts

Schedule ..... **None**

2.3. Electrical Equipment:

Wattage ..... **300.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **2.0** People

Activity Level ..... **Medium Work**

Sensible ..... **86.5** W/person

Latent ..... **133.3** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
WSW	11.4	14	0	0

3.1. Construction Types for Exposure WSW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **Hinged Window 0.2 m^2**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	19.4	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Slab Floor On Grade**

Floor Area ..... **19.4** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Exposed Perimeter ..... **16.4** m

Edge Insulation R-Value ..... **0.00** (m²-°K)/W

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **50.4** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details:

(No partition data).

WW Rumpus + Hall Corr.

1. General Details:

Floor Area ..... **71.8** m²

Avg. Ceiling Height ..... **3.0** m

Building Weight ..... **341.8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage ..... **SPORTS: Games arcade**

OA Requirement 1 ..... **3.8** L/s/person

OA Requirement 2 ..... **0.90** L/(s-m²)

Space Usage Defaults **ASHRAE Standard 62.1-2010**

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**

Wattage ..... **8.00** W/m²

Ballast Multiplier **1.00**

Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **0.0** Watts

Schedule ..... **None**

2.3. Electrical Equipment:

Wattage ..... **2000.0** Watts

Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **15.0** People

Activity Level ..... **Medium Work**

Sensible ..... **86.5** W/person

Latent ..... **133.3** W/person

Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** W

Schedule ..... **None**

Latent ..... **0** W

Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
NNW	17.0	73	0	0
WSW	3.3	0	0	0
ENE	3.3	0	0	0
SSE	39.0	48	0	0
SSW	6.8	25	0	0
WSW	4.8	15	0	0

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
ENE	4.8	0	0	0

3.1. Construction Types for Exposure NNW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **SLIDING Window 0.2 m^2**

3.2. Construction Types for Exposure WSW

Wall Type ..... **External / Internal Wall**

3.3. Construction Types for Exposure ENE

Wall Type ..... **External / Internal Wall**

3.4. Construction Types for Exposure SSE

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **FIXED Window 0.2 m^2**

3.5. Construction Types for Exposure SSW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **SLIDING Window 0.2 m^2**

3.6. Construction Types for Exposure WSW

Wall Type ..... **External / Internal Wall**

1st Window Type ..... **Hinged Window 0.2 m^2**

3.7. Construction Types for Exposure ENE

Wall Type ..... **External / Internal Wall**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	71.8	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Roof**

5. Infiltration:

Design Cooling ..... **0.00** L/s

Design Heating ..... **0.00** L/s

Energy Analysis ..... **0.00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Slab Floor On Grade**

Floor Area ..... **71.8** m²

Total Floor U-Value ..... **0.125** W/(m²-°K)

Exposed Perimeter ..... **56.0** m

Edge Insulation R-Value ..... **0.00** (m²-°K)/W

7. Partitions:

7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **57.0** m²

U-Value ..... **0.362** W/(m²-°K)

Uncondit. Space Max Temp ..... **35.0** °C

Ambient at Space Max Temp ..... **34.5** °C

Uncondit. Space Min Temp ..... **12.7** °C

Ambient at Space Min Temp ..... **4.5** °C

7.2. 2nd Partition Details:

(No partition data).

Air System Sizing Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

Air System Information

Air System Name ..... **East Wing System**

Equipment Class ..... **TERM**

Air System Type ..... **VRF**

Number of zones **4**

Floor Area ..... **182.4** m²

Location ..... **Melbourne, Australia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**

Sizing Data ..... **User-Modified**

Zone L/s Sizing ..... **Sum of space airflow rates**

Space L/s Sizing ..... **Individual peak space loads**

Zone Sizing Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

Air System Information

Air System Name ..... **East Wing System**

Equipment Class ..... **TERM**

Air System Type ..... **VRF**

Number of zones **4**

Floor Area ..... **182.4** m²

Location ..... **Melbourne, Australia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**

Sizing Data ..... **User-Modified**

Zone L/s Sizing ..... **Sum of space airflow rates**

Space L/s Sizing ..... **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (kW)	Design Airflow (L/s)	Minimum Airflow (L/s)	Time of Peak Load	Maximum Heating Load (kW)	Zone Floor Area (m²)	Zone L/(s-m²)
Zone 1	5.5	250	250	Jan 1500	2.1	72.0	3.47
Zone 2	2.4	150	150	Dec 1700	0.4	26.2	5.73
Zone 3	8.7	417	417	Feb 1400	2.9	50.0	8.34
Zone 4	3.7	150	150	Feb 1500	1.5	34.2	4.39

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5.6 °K (L/s)	Time of Peak Load
Zone 1	4.9	4.3	28.9 / 19.3	14.4 / 13.6	-	Dec 1600
Zone 2	2.4	2.2	26.4 / 18.4	14.4 / 13.7	-	Dec 1700
Zone 3	7.6	7.2	28.8 / 18.9	14.4 / 13.5	-	Feb 1500
Zone 4	3.2	2.9	30.5 / 19.6	14.4 / 13.4	-	Feb 1500

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Sizing Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11.1 °K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	2.5	19.0 / 27.5	-	250	0.000	0.000	27
Zone 2	0.6	20.2 / 23.5	-	150	0.000	0.000	8
Zone 3	3.1	20.4 / 26.6	-	417	0.000	0.000	14
Zone 4	1.9	18.3 / 28.9	-	150	0.000	0.000	23

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s-m²)
Zone 1							
EW Master Bed Room	1	5.5	Jan 1500	483	2.1	72.0	6.71
Zone 2							
EW Toilet Area	1	2.4	Dec 1700	210	0.4	26.2	8.00
Zone 3							
EW Open Office	1	8.7	Feb 1400	766	2.9	50.0	15.33
Zone 4							
EW BASEMENT MEDIA ROOM	1	3.7	Feb 1500	323	1.5	34.2	9.44

Ventilation Sizing Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

No data is available for this report. Space by space ventilation calculations were not performed for this air system because it uses the 'user-defined' sizing option. With this option the system outdoor ventilation air flow is specified directly by the user. Therefore, space-by-space calculations are not performed.

Air System Design Load Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

Air System Design Load Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1600 COOLING OA DB / WB 34.2 °C / 20.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
ZONE LOADS	**Details**	**Sensible (W)**	**Latent (W)**	**Details**	**Sensible (W)**	**Latent (W)**
Window & Skylight Solar Loads	68 m²	6187	-	68 m²	-	-
Wall Transmission	108 m²	1126	-	108 m²	651	-
Roof Transmission	148 m²	757	-	148 m²	308	-
Window Transmission	68 m²	1784	-	68 m²	3507	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	182 m²	176	-	182 m²	214	-
Partitions	158 m²	544	-	158 m²	482	-
Ceiling	34 m²	118	-	34 m²	104	-
Overhead Lighting	844 W	844	-	0	0	-
Task Lighting	450 W	450	-	0	0	-
Electric Equipment	4600 W	4600	-	0	0	-
People	12	1007	1220	0	0	0
Infiltration	-	617	42	-	998	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	1821	63	10%	626	0
>> Total Zone Loads	**-**	**20031**	**1325**	**-**	**6890**	**0**
Zone Conditioning	-	16135	1325	-	6804	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	0 L/s	0	-	0 L/s	0	-
Ventilation Load	71 L/s	472	45	71 L/s	1384	0
Ventilation Fan Load	0 L/s	0	-	0 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**16607**	**1370**	**-**	**8188**	**0**
Terminal Unit Cooling	-	16607	1359	-	0	0
Terminal Unit Heating	-	0	-	-	8188	-
>> Total Conditioning	**-**	**16607**	**1359**	**-**	**8188**	**0**
Key:	**Positive values are clg loads** **Negative values are htg loads**			**Positive values are htg loads** **Negative values are clg loads**		

Zone Design Load Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

Zone 1	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1500 COOLING OA DB / WB 34.5 °C / 21.0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	25 m²	2381	-	25 m²	-	-
Wall Transmission	44 m²	390	-	44 m²	266	-
Roof Transmission	72 m²	348	-	72 m²	150	-
Window Transmission	25 m²	666	-	25 m²	1294	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	72 m²	86	-	72 m²	76	-
Partitions	34 m²	119	-	34 m²	104	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	360 W	360	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	499	8	10%	189	0
>> Total Zone Loads	**-**	**5488**	**166**	**-**	**2078**	**0**

Zone Design Load Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

Zone 2	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1700 COOLING OA DB / WB 32.8 °C / 20.7 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	1 m²	232	-	1 m²	-	-
Wall Transmission	13 m²	195	-	13 m²	78	-
Roof Transmission	26 m²	136	-	26 m²	54	-
Window Transmission	1 m²	34	-	1 m²	77	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	26 m²	29	-	26 m²	28	-
Partitions	52 m²	165	-	52 m²	158	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	131 W	131	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	1000 W	1000	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	216	8	10%	39	0
>> Total Zone Loads	**-**	**2379**	**166**	**-**	**434**	**0**

Zone Design Load Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

Zone 3	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1400 COOLING OA DB / WB 34.2 °C / 20.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	42 m²	3883	-	42 m²	-	-
Wall Transmission	42 m²	402	-	42 m²	251	-
Roof Transmission	50 m²	191	-	50 m²	104	-
Window Transmission	42 m²	1052	-	42 m²	2137	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	50 m²	58	-	50 m²	53	-
Partitions	23 m²	78	-	23 m²	71	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	250 W	250	-	0	0	-
Task Lighting	150 W	150	-	0	0	-
Electric Equipment	1600 W	1600	-	0	0	-
People	3	246	237	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	791	12	10%	261	0
>> Total Zone Loads	**-**	**8702**	**249**	**-**	**2876**	**0**

Zone Design Load Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

Zone 4	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1500 COOLING OA DB / WB 34.5 °C / 21.0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	0 m²	0	-	0 m²	-	-
Wall Transmission	9 m²	121	-	9 m²	56	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	0 m²	0	-	0 m²	0	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	34 m²	0	-	34 m²	58	-
Partitions	49 m²	169	-	49 m²	148	-
Ceiling	34 m²	119	-	34 m²	104	-
Overhead Lighting	103 W	103	-	0	0	-
Task Lighting	150 W	150	-	0	0	-
Electric Equipment	1600 W	1600	-	0	0	-
People	5	432	667	0	0	0
Infiltration	-	638	42	-	998	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	333	35	10%	136	0
>> Total Zone Loads	**-**	**3664**	**744**	**-**	**1501**	**0**

TABLE 1.1.A. COMPONENT LOADS FOR SPACE " EW Master Bed Room " IN ZONE " Zone 1 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1500 COOLING OA DB / WB 34.5 °C / 21.0 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	25 m²	2381	-	25 m²	-	-
Wall Transmission	44 m²	390	-	44 m²	266	-
Roof Transmission	72 m²	348	-	72 m²	150	-
Window Transmission	25 m²	666	-	25 m²	1294	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	72 m²	86	-	72 m²	76	-
Partitions	34 m²	119	-	34 m²	104	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	360 W	360	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	499	8	10%	189	0
>> Total Zone Loads	**-**	**5488**	**166**	**-**	**2078**	**0**

TABLE 1.1.B. ENVELOPE LOADS FOR SPACE " EW Master Bed Room " IN ZONE " Zone 1 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m^2)	($W/(m^2-°K)$)	Coeff.	(W)	(W)	(W)
ENE EXPOSURE						
WALL	4	0.362	-	29	-	26
WINDOW 1	15	3.050	0.530	402	1695	780
SSE EXPOSURE						
WALL	21	0.362	-	122	-	126
WINDOW 1	8	3.050	0.530	219	497	426
WSW EXPOSURE						
WALL	19	0.362	-	239	-	114
WINDOW 1	2	3.300	0.520	45	190	88
H EXPOSURE						
ROOF	72	0.125	-	348	-	150

Space Design Load Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

TABLE 2.1.A. COMPONENT LOADS FOR SPACE " EW Toilet Area " IN ZONE " Zone 2 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1700 COOLING OA DB / WB 32.8 °C / 20.7 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	1 m²	232	-	1 m²	-	-
Wall Transmission	13 m²	195	-	13 m²	78	-
Roof Transmission	26 m²	136	-	26 m²	54	-
Window Transmission	1 m²	34	-	1 m²	77	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	26 m²	29	-	26 m²	28	-
Partitions	52 m²	165	-	52 m²	158	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	131 W	131	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	1000 W	1000	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	216	8	10%	39	0
>> Total Zone Loads	**-**	**2379**	**166**	**-**	**434**	**0**

TABLE 2.1.B. ENVELOPE LOADS FOR SPACE " EW Toilet Area " IN ZONE " Zone 2 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²-°K))	Coeff.	(W)	(W)	(W)
WSW EXPOSURE						
WALL	13	0.362	-	195	-	78
WINDOW 1	1	3.300	0.520	34	232	77
H EXPOSURE						
ROOF	26	0.125	-	136	-	54

Space Design Load Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

Space Design Load Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

TABLE 3.1.A. COMPONENT LOADS FOR SPACE " EW Open Office " IN ZONE " Zone 3 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1400 COOLING OA DB / WB 34.2 °C / 20.9 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	42 m²	3883	-	42 m²	-	-
Wall Transmission	42 m²	402	-	42 m²	251	-
Roof Transmission	50 m²	191	-	50 m²	104	-
Window Transmission	42 m²	1052	-	42 m²	2137	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	50 m²	58	-	50 m²	53	-
Partitions	23 m²	78	-	23 m²	71	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	250 W	250	-	0	0	-
Task Lighting	150 W	150	-	0	0	-
Electric Equipment	1600 W	1600	-	0	0	-
People	3	246	237	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	791	12	10%	261	0
>> Total Zone Loads	**-**	**8702**	**249**	**-**	**2876**	**0**

TABLE 3.1.B. ENVELOPE LOADS FOR SPACE " EW Open Office " IN ZONE " Zone 3 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m^2)	($W/(m^2\text{-}°K)$)	Coeff.	(W)	(W)	(W)
ENE EXPOSURE						
WALL	4	0.362	-	29	-	26
WINDOW 1	15	3.050	0.530	384	1728	780
NNW EXPOSURE						
WALL	17	0.362	-	226	-	105
WINDOW 1	7	3.050	0.530	165	857	334
WSW EXPOSURE						
WALL	10	0.362	-	83	-	58
SSW EXPOSURE						
WALL	3	0.362	-	13	-	15
WINDOW 1	4	3.050	0.530	95	150	193
SSE EXPOSURE						
WALL	3	0.362	-	17	-	19
WINDOW 1	4	3.050	0.530	95	168	193
NNE EXPOSURE						
WALL	3	0.362	-	24	-	16
WINDOW 1	7	3.300	0.520	189	783	384
SSW EXPOSURE						
WALL	2	0.362	-	10	-	11
WINDOW 1	5	3.050	0.530	125	197	253
H EXPOSURE						
ROOF	50	0.125	-	191	-	104

Space Design Load Summary for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

TABLE 4.1.A. COMPONENT LOADS FOR SPACE " EW BASEMENT MEDIA ROOM " IN ZONE " Zone 4 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1500 COOLING OA DB / WB 34.5 °C / 21.0 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	0 m²	0	-	0 m²	-	-
Wall Transmission	9 m²	121	-	9 m²	56	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	0 m²	0	-	0 m²	0	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	34 m²	0	-	34 m²	58	-
Partitions	49 m²	169	-	49 m²	148	-
Ceiling	34 m²	119	-	34 m²	104	-
Overhead Lighting	103 W	103	-	0	0	-
Task Lighting	150 W	150	-	0	0	-
Electric Equipment	1600 W	1600	-	0	0	-
People	5	432	667	0	0	0
Infiltration	-	638	42	-	998	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	333	35	10%	136	0
>> Total Zone Loads	**-**	**3664**	**744**	**-**	**1501**	**0**

TABLE 4.1.B. ENVELOPE LOADS FOR SPACE " EW BASEMENT MEDIA ROOM " IN ZONE " Zone 4 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²-°K))	Coeff.	(W)	(W)	(W)
NNW EXPOSURE						
WALL	9	0.362	-	121	-	56

Hourly Air System Design Day Loads for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

DESIGN MONTH: JULY										
Hour	OA TEMP (°C)	COMMON VENT AIRFLOW (L/s)	CENTRAL COOLING SENSIBLE (kW)	CENTRAL COOLING TOTAL (kW)	CENTRAL HEATING COIL (kW)	VENT COOLING COIL (kW)	VENT HEATING COIL (kW)	TERMINAL COOLING (kW)	TERMINAL HEATING (kW)	ZONE HEATING UNIT (kW)
0000	19.1	0	0.0	0.0	0.0	0.0	0.0	8.5	0.0	0.0
0100	18.5	0	0.0	0.0	0.0	0.0	0.0	8.2	0.0	0.0
0200	17.9	0	0.0	0.0	0.0	0.0	0.0	7.7	0.0	0.0
0300	17.5	0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	0.0
0400	17.1	0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0
0500	17.0	0	0.0	0.0	0.0	0.0	0.0	6.8	0.0	0.0
0600	17.2	0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0
0700	17.8	0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0
0800	18.8	0	0.0	0.0	0.0	0.0	0.0	8.6	0.0	0.0
0900	20.3	0	0.0	0.0	0.0	0.0	0.0	10.6	0.0	0.0
1000	22.1	0	0.0	0.0	0.0	0.0	0.0	11.6	0.0	0.0
1100	24.0	0	0.0	0.0	0.0	0.0	0.0	12.3	0.0	0.0
1200	25.9	0	0.0	0.0	0.0	0.0	0.0	12.8	0.0	0.0
1300	27.2	0	0.0	0.0	0.0	0.0	0.0	13.0	0.0	0.0
1400	28.2	0	0.0	0.0	0.0	0.0	0.0	13.4	0.0	0.0
1500	28.5	0	0.0	0.0	0.0	0.0	0.0	13.6	0.0	0.0
1600	28.2	0	0.0	0.0	0.0	0.0	0.0	13.3	0.0	0.0
1700	27.4	0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0
1800	26.1	0	0.0	0.0	0.0	0.0	0.0	12.1	0.0	0.0
1900	24.6	0	0.0	0.0	0.0	0.0	0.0	11.5	0.0	0.0
2000	23.1	0	0.0	0.0	0.0	0.0	0.0	10.8	0.0	0.0
2100	21.8	0	0.0	0.0	0.0	0.0	0.0	10.1	0.0	0.0
2200	20.7	0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	0.0
2300	19.8	0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0

Hourly Zone Loads for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

ZONE: Zone 1

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	24.3	59	250.0	1415.3	1480.1	1313.2	0.0	0.0
0100	18.5	24.3	59	250.0	1301.9	1375.2	1190.9	0.0	0.0
0200	17.9	24.2	59	250.0	1192.4	1273.0	1071.2	0.0	0.0
0300	17.5	24.3	59	250.0	1095.0	1121.9	904.0	0.0	0.0
0400	17.1	24.2	60	250.0	1010.2	1107.7	881.8	0.0	0.0
0500	17.0	24.2	60	250.0	947.0	1003.1	772.6	0.0	0.0
0600	17.2	24.2	60	250.0	915.5	1003.1	781.6	0.0	0.0
0700	17.8	24.2	60	250.0	916.7	990.0	787.0	0.0	0.0
0800	18.8	24.4	59	250.0	1787.7	1652.1	1475.0	0.0	0.0
0900	20.3	24.4	59	250.0	2439.6	2270.9	2139.8	0.0	0.0
1000	22.1	24.6	58	250.0	2813.9	2553.3	2486.9	0.0	0.0
1100	24.0	24.7	56	250.0	3001.3	2666.6	2689.9	0.0	0.0
1200	25.9	24.6	55	250.0	3014.1	2755.4	2874.0	0.0	0.0
1300	27.2	24.7	57	250.0	2893.7	2624.7	2742.5	0.0	0.0
1400	28.2	24.6	55	250.0	2950.1	2738.6	2925.7	0.0	0.0
1500	28.5	24.6	55	250.0	2990.8	2815.7	3039.7	0.0	0.0
1600	28.2	24.6	55	250.0	2889.3	2755.5	2953.4	0.0	0.0
1700	27.4	24.6	58	250.0	2641.8	2504.8	2593.6	0.0	0.0
1800	26.1	24.5	58	250.0	2444.4	2359.2	2409.2	0.0	0.0
1900	24.6	24.5	59	250.0	2241.9	2194.0	2197.6	0.0	0.0
2000	23.1	24.4	59	250.0	2040.2	2026.6	1983.8	0.0	0.0
2100	21.8	24.4	59	250.0	1858.9	1872.5	1790.6	0.0	0.0
2200	20.7	24.4	59	250.0	1689.8	1726.2	1608.8	0.0	0.0
2300	19.8	24.3	59	250.0	1541.7	1595.0	1449.2	0.0	0.0

Hourly Zone Loads for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

ZONE: Zone 2

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	24.6	58	150.0	1507.8	1479.6	1446.5	0.0	0.0
0100	18.5	24.5	58	150.0	1488.5	1499.6	1474.8	0.0	0.0
0200	17.9	24.5	58	150.0	1469.7	1481.3	1446.7	0.0	0.0
0300	17.5	24.5	59	150.0	1453.4	1460.8	1412.3	0.0	0.0
0400	17.1	24.4	59	150.0	1439.6	1449.8	1399.6	0.0	0.0
0500	17.0	24.4	59	150.0	1430.5	1436.3	1382.3	0.0	0.0
0600	17.2	24.4	59	150.0	1428.5	1431.1	1378.0	0.0	0.0
0700	17.8	24.4	59	150.0	1433.9	1436.1	1389.1	0.0	0.0
0800	18.8	24.5	59	150.0	1455.0	1436.7	1397.9	0.0	0.0
0900	20.3	24.5	59	150.0	1489.3	1458.6	1436.9	0.0	0.0
1000	22.1	24.5	58	150.0	1532.1	1505.8	1510.6	0.0	0.0
1100	24.0	24.5	56	150.0	1583.8	1558.7	1590.4	0.0	0.0
1200	25.9	24.7	57	150.0	1636.1	1548.6	1588.6	0.0	0.0
1300	27.2	24.6	55	150.0	1680.9	1636.8	1711.1	0.0	0.0
1400	28.2	24.6	53	150.0	1737.7	1711.5	1807.2	0.0	0.0
1500	28.5	24.6	52	150.0	1802.1	1753.8	1856.9	0.0	0.0
1600	28.2	24.7	53	150.0	1810.9	1752.4	1852.4	0.0	0.0
1700	27.4	24.7	54	150.0	1736.2	1679.8	1760.6	0.0	0.0
1800	26.1	24.6	54	150.0	1694.7	1680.6	1753.6	0.0	0.0
1900	24.6	24.7	56	150.0	1657.8	1599.2	1636.1	0.0	0.0
2000	23.1	24.6	56	150.0	1620.3	1597.4	1623.6	0.0	0.0
2100	21.8	24.7	57	150.0	1587.1	1534.2	1534.4	0.0	0.0
2200	20.7	24.6	57	150.0	1556.2	1544.1	1540.7	0.0	0.0
2300	19.8	24.6	57	150.0	1529.7	1517.5	1498.8	0.0	0.0

Hourly Zone Loads for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

ZONE: Zone 3

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	24.5	60	417.0	3644.4	3802.0	3729.6	0.0	0.0
0100	18.5	24.4	61	417.0	3441.9	3668.6	3581.9	0.0	0.0
0200	17.9	24.5	61	417.0	3246.9	3347.3	3238.9	0.0	0.0
0300	17.5	24.5	61	417.0	3071.7	3186.2	3071.1	0.0	0.0
0400	17.1	24.4	61	417.0	2916.3	3029.3	2909.1	0.0	0.0
0500	17.0	24.3	62	417.0	2793.8	2961.7	2841.6	0.0	0.0
0600	17.2	24.4	61	417.0	2717.9	2770.1	2651.8	0.0	0.0
0700	17.8	24.4	61	417.0	2689.9	2755.7	2647.6	0.0	0.0
0800	18.8	24.6	60	417.0	3946.1	3850.3	3769.7	0.0	0.0
0900	20.3	24.7	52	417.0	5078.6	4924.2	5017.5	0.0	0.0
1000	22.1	25.2	49	417.0	5902.7	5392.8	5528.1	0.0	0.0
1100	24.0	25.7	47	417.0	6491.3	5664.2	5824.6	0.0	0.0
1200	25.9	26.1	46	417.0	6823.0	5839.2	6025.5	0.0	0.0
1300	27.2	26.2	45	417.0	6905.9	5912.1	6119.3	0.0	0.0
1400	28.2	26.4	45	417.0	7005.0	5989.1	6210.0	0.0	0.0
1500	28.5	26.4	45	417.0	6889.9	5975.1	6200.8	0.0	0.0
1600	28.2	26.0	46	417.0	6421.9	5804.0	6026.9	0.0	0.0
1700	27.4	25.5	48	417.0	5772.8	5539.6	5755.1	0.0	0.0
1800	26.1	25.2	49	417.0	5414.7	5380.7	5580.4	0.0	0.0
1900	24.6	24.9	50	417.0	5066.7	5219.9	5398.1	0.0	0.0
2000	23.1	24.8	52	417.0	4724.4	4894.0	5014.0	0.0	0.0
2100	21.8	24.7	54	417.0	4414.5	4600.9	4667.1	0.0	0.0
2200	20.7	24.6	56	417.0	4124.8	4301.0	4310.1	0.0	0.0
2300	19.8	24.6	58	417.0	3867.9	4035.1	4002.4	0.0	0.0

Hourly Zone Loads for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

ZONE: Zone 4

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	26.4	46	150.0	2213.0	2163.9	1995.1	0.0	0.0
0100	18.5	26.3	46	150.0	2160.8	2141.1	1959.0	0.0	0.0
0200	17.9	26.2	47	150.0	2108.5	2117.7	1922.4	0.0	0.0
0300	17.5	26.1	47	150.0	2065.8	2096.4	1890.9	0.0	0.0
0400	17.1	26.0	47	150.0	2032.9	2077.6	1864.7	0.0	0.0
0500	17.0	25.9	48	150.0	2019.5	2064.3	1849.8	0.0	0.0
0600	17.2	25.9	48	150.0	2035.6	2059.9	1852.4	0.0	0.0
0700	17.8	25.9	48	150.0	2081.6	2065.2	1873.2	0.0	0.0
0800	18.8	26.0	47	150.0	2179.6	2087.2	1921.4	0.0	0.0
0900	20.3	26.2	46	150.0	2329.2	2126.9	1998.0	0.0	0.0
1000	22.1	26.5	46	150.0	2501.0	2176.8	2088.6	0.0	0.0
1100	24.0	26.8	45	150.0	2690.7	2235.7	2194.6	0.0	0.0
1200	25.9	27.2	44	150.0	2866.8	2294.6	2297.6	0.0	0.0
1300	27.2	27.4	43	150.0	2998.8	2344.1	2379.5	0.0	0.0
1400	28.2	27.7	42	150.0	3083.3	2381.8	2438.4	0.0	0.0
1500	28.5	27.8	42	150.0	3107.3	2402.8	2466.1	0.0	0.0
1600	28.2	27.8	42	150.0	3051.1	2399.9	2453.8	0.0	0.0
1700	27.4	27.6	42	150.0	2939.9	2378.7	2412.7	0.0	0.0
1800	26.1	27.5	43	150.0	2820.7	2351.7	2354.1	0.0	0.0
1900	24.6	27.3	43	150.0	2693.6	2319.3	2284.0	0.0	0.0
2000	23.1	27.1	44	150.0	2565.6	2283.7	2211.0	0.0	0.0
2100	21.8	26.9	44	150.0	2456.3	2250.6	2146.9	0.0	0.0
2200	20.7	26.7	45	150.0	2356.1	2217.9	2086.5	0.0	0.0
2300	19.8	26.6	45	150.0	2275.0	2188.9	2035.6	0.0	0.0

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	34.2	0.01008	71	400	472	45
Vent - Return Mixing	Outlet	-17.8	0.00000	0	0	-	-
Ventilation Fan	Outlet	-17.8	0.00000	0	0	0	-
Zone Air	-	28.3	0.00979	967	102	16135	1325
Return Plenum	Outlet	-17.8	0.00979	967	102	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.207; At site altitude = 1.202 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947.6; At site altitude = 2935.3 W/(L/s)

Site Altitude = 35.0 m

TABLE 2: ZONE DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Zone 1 (Cooling)							
Ventilation Air	-	-	-	27	-	-	-
Cooling Coil Inlet	-	29.0	0.01004	250	0	-	-
Cooling Coil Outlet	-	14.4	0.00934	250	0	4364	511
Heating Coil Inlet	-	14.4	0.00934	250	0	-	-
Heating Coil Outlet	-	14.4	0.00934	250	0	0	-
Zone Air	-	28.3	0.01003	250	0	4178	-
Zone 2 (Cooling)							
Ventilation Air	-	-	-	8	-	-	-
Cooling Coil Inlet	-	26.4	0.00992	150	0	-	-
Cooling Coil Outlet	-	14.4	0.00949	150	0	2151	187
Heating Coil Inlet	-	14.4	0.00949	150	0	-	-
Heating Coil Outlet	-	14.4	0.00949	150	0	0	-
Zone Air	-	25.9	0.00991	150	0	2073	-
Zone 3 (Cooling)							
Ventilation Air	-	-	-	14	-	-	-
Cooling Coil Inlet	-	28.8	0.00964	417	0	-	-
Cooling Coil Outlet	-	14.4	0.00931	417	0	7209	391
Heating Coil Inlet	-	14.4	0.00931	417	0	-	-
Heating Coil Outlet	-	14.4	0.00931	417	0	0	-
Zone Air	-	28.6	0.00961	417	0	7118	-
Zone 4 (Cooling)							
Ventilation Air	-	-	-	23	-	-	-
Cooling Coil Inlet	-	30.4	0.00984	150	0	-	-
Cooling Coil Outlet	-	14.4	0.00923	150	0	2884	269
Heating Coil Inlet	-	14.4	0.00923	150	0	-	-
Heating Coil Outlet	-	14.4	0.00923	150	0	0	-
Zone Air	-	29.8	0.00979	150	0	2766	-

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	4.5	0.00262	71	400	-1384	0
Vent - Return Mixing	Outlet	-17.8	0.00000	0	0	-	-
Ventilation Fan	Outlet	-17.8	0.00000	0	0	0	-
Zone Air	-	20.8	0.00262	967	0	-6804	0
Return Plenum	Outlet	-17.8	0.00262	967	0	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.207; At site altitude = 1.202 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947.6; At site altitude = 2935.3 W/(L/s)

Site Altitude = 35.0 m

TABLE 2: ZONE DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Zone 1 (Heating)							
Ventilation Air	-	-	-	27	-	-	-
Cooling Coil Inlet	-	19.0	0.00263	250	0	-	-
Cooling Coil Outlet	-	19.0	0.00263	250	0	0	0
Heating Coil Inlet	-	19.0	0.00263	250	0	-	-
Heating Coil Outlet	-	27.5	0.00263	250	0	2543	-
Zone Air	-	20.7	0.00262	250	0	-2024	-
Zone 2 (Heating)							
Ventilation Air	-	-	-	8	-	-	-
Cooling Coil Inlet	-	20.2	0.00263	150	0	-	-
Cooling Coil Outlet	-	20.2	0.00263	150	0	0	0
Heating Coil Inlet	-	20.2	0.00263	150	0	-	-
Heating Coil Outlet	-	23.5	0.00263	150	0	585	-
Zone Air	-	21.1	0.00262	150	0	-429	-
Zone 3 (Heating)							
Ventilation Air	-	-	-	14	-	-	-
Cooling Coil Inlet	-	20.4	0.00263	417	0	-	-
Cooling Coil Outlet	-	20.4	0.00263	417	0	0	0
Heating Coil Inlet	-	20.4	0.00263	417	0	-	-
Heating Coil Outlet	-	26.6	0.00263	417	0	3150	-
Zone Air	-	20.9	0.00262	417	0	-2880	-
Zone 4 (Heating)							
Ventilation Air	-	-	-	23	-	-	-
Cooling Coil Inlet	-	18.3	0.00262	150	0	-	-
Cooling Coil Outlet	-	18.3	0.00262	150	0	0	0
Heating Coil Inlet	-	18.3	0.00262	150	0	-	-
Heating Coil Outlet	-	28.9	0.00262	150	0	1910	-
Zone Air	-	20.7	0.00262	150	0	-1472	-

Psychrometric Analysis for East Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:50PM

The psychrometric graph cannot be generated for this type of system.

Air System Sizing Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Air System Information

Air System Sizing Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Air System Name ..... **Existing Dwelling System**

Equipment Class ..... **TERM**

Air System Type ..... **VRF**

Number of zones **4**

Floor Area ..... **136.3** m²

Location ..... **Melbourne, Australia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**

Sizing Data ..... **User-Modified**

Zone L/s Sizing ..... **Sum of space airflow rates**

Space L/s Sizing ..... **Individual peak space loads**

Zone Sizing Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Air System Information

Air System Name ..... **Existing Dwelling System**

Equipment Class ..... **TERM**

Air System Type ..... **VRF**

Number of zones **4**

Floor Area ..... **136.3** m²

Location ..... **Melbourne, Australia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**

Sizing Data ..... **User-Modified**

Zone L/s Sizing ..... **Sum of space airflow rates**

Space L/s Sizing ..... **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (kW)	Design Airflow (L/s)	Minimum Airflow (L/s)	Time of Peak Load	Maximum Heating Load (kW)	Zone Floor Area (m²)	Zone L/(s-m²)
Zone 1	1.0	88	88	Dec 1700	0.4	6.0	14.72
Zone 2	6.1	250	250	Mar 1400	1.7	50.0	5.00
Zone 3	6.9	250	250	Mar 1300	1.3	31.3	7.99
Zone 4	5.8	250	250	Mar 1300	1.7	49.0	5.10

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5.6 °K (L/s)	Time of Peak Load
Zone 1	1.2	1.1	25.6 / 19.0	15.7 / 15.1	-	Dec 1700
Zone 2	6.2	5.0	31.0 / 20.6	14.4 / 13.5	-	Feb 1600
Zone 3	6.5	5.7	33.3 / 20.8	14.4 / 13.3	-	Mar 1400
Zone 4	6.1	4.8	30.6 / 20.5	14.4 / 13.5	-	Feb 1500

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11.1 °K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0.6	19.2 / 25.1	-	88	0.000	0.000	9
Zone 2	2.7	17.3 / 26.3	-	250	0.000	0.000	53
Zone 3	1.8	19.2 / 25.4	-	250	0.000	0.000	26
Zone 4	2.7	17.4 / 26.5	-	250	0.000	0.000	52

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m^2)	Space L/(s-m^2)
Zone 1							
Exst. Entrance	1	1.0	Dec 1700	88	0.4	6.0	14.71
Zone 2							
Exst. Family	1	6.1	Mar 1400	540	1.7	50.0	10.81
Zone 3							
Exst. Kitchen + Meal	1	6.9	Mar 1300	606	1.3	31.3	19.37
Zone 4							
Exst. Studio	1	5.8	Mar 1300	515	1.7	49.0	10.51

Ventilation Sizing Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

No data is available for this report. Space by space ventilation calculations were not performed for this air system because it uses the 'user-defined' sizing option. With this option the system outdoor ventilation air flow is specified directly by the user. Therefore, space-by-space calculations are not performed.

Air System Design Load Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Air System Design Load Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1500 COOLING OA DB / WB 34.5 °C / 21.0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
ZONE LOADS	**Details**	**Sensible (W)**	**Latent (W)**	**Details**	**Sensible (W)**	**Latent (W)**
Window & Skylight Solar Loads	59 m²	5401	-	59 m²	-	-
Wall Transmission	81 m²	700	-	81 m²	488	-
Roof Transmission	136 m²	585	-	136 m²	283	-
Window Transmission	59 m²	1796	-	59 m²	3489	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	136 m²	0	-	136 m²	226	-
Partitions	80 m²	276	-	80 m²	243	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	1427 W	1427	-	0	0	-
Task Lighting	300 W	300	-	0	0	-
Electric Equipment	3800 W	3800	-	0	0	-
People	34	2791	2689	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	1000	-	0	0
Safety Factor	10% / 5%	1708	184	10%	473	0
>> Total Zone Loads	**-**	**18784**	**3874**	**-**	**5202**	**0**
Zone Conditioning	-	15488	3874	-	5155	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	0 L/s	0	-	0 L/s	0	-
Ventilation Load	140 L/s	757	-452	140 L/s	2758	0
Ventilation Fan Load	0 L/s	0	-	0 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**16245**	**3422**	**-**	**7913**	**0**
Terminal Unit Cooling	-	16245	3419	-	0	0
Terminal Unit Heating	-	0	-	-	7913	-
>> Total Conditioning	**-**	**16245**	**3419**	**-**	**7913**	**0**
Key:	**Positive values are clg loads** **Negative values are htg loads**			**Positive values are htg loads** **Negative values are clg loads**		

Zone Design Load Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Zone 1	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1700 COOLING OA DB / WB 32.8 °C / 20.7 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	5 m²	488	-	5 m²	-	-
Wall Transmission	1 m²	11	-	1 m²	7	-
Roof Transmission	6 m²	31	-	6 m²	12	-
Window Transmission	5 m²	155	-	5 m²	344	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	6 m²	0	-	6 m²	11	-
Partitions	10 m²	32	-	10 m²	31	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	30 W	30	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	91	8	10%	40	0
>> Total Zone Loads	**-**	**1002**	**166**	**-**	**445**	**0**

Zone Design Load Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Zone 2	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Mar 1400 COOLING OA DB / WB 33.0 °C / 20.3 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	20 m²	2211	-	20 m²	-	-
Wall Transmission	40 m²	396	-	40 m²	242	-
Roof Transmission	50 m²	151	-	50 m²	104	-
Window Transmission	20 m²	458	-	20 m²	1075	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	50 m²	0	-	50 m²	81	-
Partitions	26 m²	80	-	26 m²	79	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	500 W	500	-	0	0	-
Task Lighting	150 W	150	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	15	1231	1187	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	558	59	10%	158	0
>> Total Zone Loads	**-**	**6135**	**1246**	**-**	**1740**	**0**

Zone Design Load Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Zone 3	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Mar 1300 COOLING OA DB / WB 32.1 °C / 20.1 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	14 m²	2149	-	14 m²	-	-
Wall Transmission	5 m²	46	-	5 m²	32	-
Roof Transmission	31 m²	77	-	31 m²	65	-
Window Transmission	14 m²	378	-	14 m²	995	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	31 m²	0	-	31 m²	53	-
Partitions	13 m²	36	-	13 m²	38	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	407 W	407	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	3000 W	3000	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	1000	-	0	0
Safety Factor	10% / 5%	626	58	10%	118	0
>> Total Zone Loads	**-**	**6883**	**1216**	**-**	**1302**	**0**

Zone Design Load Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Zone 4	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Mar 1300 COOLING OA DB / WB 32.1 °C / 20.1 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	20 m²	2225	-	20 m²	-	-
Wall Transmission	35 m²	201	-	35 m²	207	-
Roof Transmission	49 m²	121	-	49 m²	102	-
Window Transmission	20 m²	409	-	20 m²	1075	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	49 m²	0	-	49 m²	80	-
Partitions	31 m²	89	-	31 m²	94	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	490 W	490	-	0	0	-
Task Lighting	150 W	150	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	15	1231	1187	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	532	59	10%	156	0
>> Total Zone Loads	**-**	**5847**	**1246**	**-**	**1715**	**0**

TABLE 1.1.A. COMPONENT LOADS FOR SPACE " Exst. Entrance " IN ZONE " Zone 1 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1700 COOLING OA DB / WB 32.8 °C / 20.7 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	5 m²	488	-	5 m²	-	-
Wall Transmission	1 m²	11	-	1 m²	7	-
Roof Transmission	6 m²	31	-	6 m²	12	-
Window Transmission	5 m²	155	-	5 m²	344	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	6 m²	0	-	6 m²	11	-
Partitions	10 m²	32	-	10 m²	31	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	30 W	30	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	91	8	10%	40	0
>> Total Zone Loads	**-**	**1002**	**166**	**-**	**445**	**0**

TABLE 1.1.B. ENVELOPE LOADS FOR SPACE " Exst. Entrance " IN ZONE " Zone 1 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m^2)	($W/(m^2\text{-}°K)$)	Coeff.	(W)	(W)	(W)
SSW EXPOSURE						
WALL	1	0.362	-	11	-	7
WINDOW 1	5	4.500	0.590	155	488	344
H EXPOSURE						
ROOF	6	0.125	-	31	-	12

Space Design Load Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

TABLE 2.1.A. COMPONENT LOADS FOR SPACE " Exst. Family " IN ZONE " Zone 2 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Mar 1400 COOLING OA DB / WB 33.0 °C / 20.3 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	20 m²	2211	-	20 m²	-	-
Wall Transmission	40 m²	396	-	40 m²	242	-
Roof Transmission	50 m²	151	-	50 m²	104	-
Window Transmission	20 m²	458	-	20 m²	1075	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	50 m²	0	-	50 m²	81	-
Partitions	26 m²	80	-	26 m²	79	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	500 W	500	-	0	0	-
Task Lighting	150 W	150	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	15	1231	1187	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	558	59	10%	158	0
>> Total Zone Loads	**-**	**6135**	**1246**	**-**	**1740**	**0**

TABLE 2.1.B. ENVELOPE LOADS FOR SPACE " Exst. Family " IN ZONE " Zone 2 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m^2)	($W/(m^2\text{-}°K)$)	Coeff.	(W)	(W)	(W)
NNE EXPOSURE						
WALL	7	0.362	-	66	-	39
WINDOW 1	13	3.300	0.520	303	1789	713
WNW EXPOSURE						
WALL	22	0.362	-	279	-	132
WINDOW 1	2	3.050	0.530	52	300	122
SSW EXPOSURE						
WALL	12	0.362	-	50	-	71
WINDOW 1	4	3.300	0.520	103	122	241
H EXPOSURE						
ROOF	50	0.125	-	151	-	104

Space Design Load Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

TABLE 3.1.A. COMPONENT LOADS FOR SPACE " Exst. Kitchen + Meal " IN ZONE " Zone 3 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Mar 1300 COOLING OA DB / WB 32.1 °C / 20.1 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	14 m²	2149	-	14 m²	-	-
Wall Transmission	5 m²	46	-	5 m²	32	-
Roof Transmission	31 m²	77	-	31 m²	65	-
Window Transmission	14 m²	378	-	14 m²	995	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	31 m²	0	-	31 m²	53	-
Partitions	13 m²	36	-	13 m²	38	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	407 W	407	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	3000 W	3000	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	1000	-	0	0
Safety Factor	10% / 5%	626	58	10%	118	0
>> Total Zone Loads	**-**	**6883**	**1216**	**-**	**1302**	**0**

TABLE 3.1.B. ENVELOPE LOADS FOR SPACE " Exst. Kitchen + Meal " IN ZONE " Zone 3 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m^2)	($W/(m^2\text{-}°K)$)	Coeff.	(W)	(W)	(W)
NNE EXPOSURE						
WALL	2	0.362	-	19	-	10
WINDOW 1	11	4.500	0.590	313	1874	822
ESE EXPOSURE						
WALL	2	0.362	-	9	-	12
WINDOW 1	2	3.050	0.530	31	102	81
WNW EXPOSURE						
WALL	2	0.362	-	18	-	11
WINDOW 1	2	3.050	0.530	35	172	91
H EXPOSURE						
ROOF	31	0.125	-	77	-	65

Space Design Load Summary for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

TABLE 4.1.A. COMPONENT LOADS FOR SPACE " Exst. Studio " IN ZONE " Zone 4 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Mar 1300 COOLING OA DB / WB 32.1 °C / 20.1 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	20 m²	2225	-	20 m²	-	-
Wall Transmission	35 m²	201	-	35 m²	207	-
Roof Transmission	49 m²	121	-	49 m²	102	-
Window Transmission	20 m²	409	-	20 m²	1075	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	49 m²	0	-	49 m²	80	-
Partitions	31 m²	89	-	31 m²	94	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	490 W	490	-	0	0	-
Task Lighting	150 W	150	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	15	1231	1187	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	532	59	10%	156	0
>> Total Zone Loads	**-**	**5847**	**1246**	**-**	**1715**	**0**

TABLE 4.1.B. ENVELOPE LOADS FOR SPACE " Exst. Studio " IN ZONE " Zone 4 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m^2)	($W/(m^2\text{-}°K)$)	Coeff.	(W)	(W)	(W)
NNE EXPOSURE						
WALL	7	0.362	-	77	-	39
WINDOW 1	13	3.300	0.520	271	1952	713
ESE EXPOSURE						
WALL	17	0.362	-	78	-	100
WINDOW 1	2	3.050	0.530	46	153	122
SSW EXPOSURE						
WALL	11	0.362	-	46	-	69
WINDOW 1	4	3.300	0.520	92	119	241
H EXPOSURE						
ROOF	49	0.125	-	121	-	102

Hourly Air System Design Day Loads for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

DESIGN MONTH: JULY										
Hour	OA TEMP (°C)	COMMON VENT AIRFLOW (L/s)	CENTRAL COOLING SENSIBLE (kW)	CENTRAL COOLING TOTAL (kW)	CENTRAL HEATING COIL (kW)	VENT COOLING COIL (kW)	VENT HEATING COIL (kW)	TERMINAL COOLING (kW)	TERMINAL HEATING (kW)	ZONE HEATING UNIT (kW)
0000	19.1	0	0.0	0.0	0.0	0.0	0.0	12.7	0.0	0.0
0100	18.5	0	0.0	0.0	0.0	0.0	0.0	12.4	0.0	0.0
0200	17.9	0	0.0	0.0	0.0	0.0	0.0	12.2	0.0	0.0
0300	17.5	0	0.0	0.0	0.0	0.0	0.0	11.9	0.0	0.0
0400	17.1	0	0.0	0.0	0.0	0.0	0.0	11.7	0.0	0.0
0500	17.0	0	0.0	0.0	0.0	0.0	0.0	11.5	0.0	0.0
0600	17.2	0	0.0	0.0	0.0	0.0	0.0	11.5	0.0	0.0
0700	17.8	0	0.0	0.0	0.0	0.0	0.0	11.3	0.0	0.0
0800	18.8	0	0.0	0.0	0.0	0.0	0.0	12.3	0.0	0.0
0900	20.3	0	0.0	0.0	0.0	0.0	0.0	13.1	0.0	0.0
1000	22.1	0	0.0	0.0	0.0	0.0	0.0	13.9	0.0	0.0
1100	24.0	0	0.0	0.0	0.0	0.0	0.0	14.7	0.0	0.0
1200	25.9	0	0.0	0.0	0.0	0.0	0.0	15.4	0.0	0.0
1300	27.2	0	0.0	0.0	0.0	0.0	0.0	15.9	0.0	0.0
1400	28.2	0	0.0	0.0	0.0	0.0	0.0	16.3	0.0	0.0
1500	28.5	0	0.0	0.0	0.0	0.0	0.0	16.2	0.0	0.0
1600	28.2	0	0.0	0.0	0.0	0.0	0.0	16.0	0.0	0.0
1700	27.4	0	0.0	0.0	0.0	0.0	0.0	15.5	0.0	0.0
1800	26.1	0	0.0	0.0	0.0	0.0	0.0	15.1	0.0	0.0
1900	24.6	0	0.0	0.0	0.0	0.0	0.0	14.7	0.0	0.0
2000	23.1	0	0.0	0.0	0.0	0.0	0.0	14.2	0.0	0.0
2100	21.8	0	0.0	0.0	0.0	0.0	0.0	13.8	0.0	0.0
2200	20.7	0	0.0	0.0	0.0	0.0	0.0	13.4	0.0	0.0
2300	19.8	0	0.0	0.0	0.0	0.0	0.0	13.0	0.0	0.0

Hourly Zone Loads for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

ZONE: Zone 1

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	24.1	73	88.3	165.3	160.9	104.4	0.0	0.0
0100	18.5	23.9	74	88.3	149.8	164.0	103.5	0.0	0.0
0200	17.9	24.0	73	88.3	134.4	134.0	65.4	0.0	0.0
0300	17.5	24.1	73	88.3	121.0	111.4	36.4	0.0	0.0
0400	17.1	23.9	74	88.3	109.9	119.8	43.3	0.0	0.0
0500	17.0	24.0	73	88.3	103.0	105.3	26.7	0.0	0.0
0600	17.2	23.9	74	88.3	102.5	109.8	34.5	0.0	0.0
0700	17.8	24.0	73	88.3	108.7	104.7	34.6	0.0	0.0
0800	18.8	24.1	73	88.3	134.9	126.4	67.4	0.0	0.0
0900	20.3	24.0	73	88.3	173.3	172.8	131.6	0.0	0.0
1000	22.1	23.9	74	88.3	216.7	226.4	206.1	0.0	0.0
1100	24.0	23.9	73	88.3	264.7	266.7	267.7	0.0	0.0
1200	25.9	24.1	73	88.3	310.1	294.6	314.2	0.0	0.0
1300	27.2	24.1	73	88.3	345.2	336.4	372.1	0.0	0.0
1400	28.2	24.0	73	88.3	368.5	364.4	411.1	0.0	0.0
1500	28.5	24.2	72	88.3	376.5	354.3	402.5	0.0	0.0
1600	28.2	24.0	73	88.3	365.0	363.9	410.7	0.0	0.0
1700	27.4	24.1	73	88.3	342.6	333.0	369.7	0.0	0.0
1800	26.1	24.0	73	88.3	317.7	316.5	339.9	0.0	0.0
1900	24.6	24.0	73	88.3	287.6	290.4	297.5	0.0	0.0
2000	23.1	24.2	72	88.3	256.9	237.1	224.5	0.0	0.0
2100	21.8	24.1	73	88.3	229.8	221.1	195.3	0.0	0.0
2200	20.7	24.1	73	88.3	204.5	198.4	160.0	0.0	0.0
2300	19.8	24.0	73	88.3	182.9	187.2	139.7	0.0	0.0

Hourly Zone Loads for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

ZONE: Zone 2

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	26.2	54	250.0	3305.1	3527.1	3890.5	0.0	0.0
0100	18.5	26.0	55	250.0	3179.4	3465.0	3800.2	0.0	0.0
0200	17.9	25.8	56	250.0	3059.1	3403.0	3711.7	0.0	0.0
0300	17.5	25.6	57	250.0	2950.6	3343.1	3632.7	0.0	0.0
0400	17.1	25.4	57	250.0	2853.9	3285.9	3563.4	0.0	0.0
0500	17.0	25.2	58	250.0	2776.2	3234.2	3513.7	0.0	0.0
0600	17.2	25.1	59	250.0	2725.1	3190.9	3493.5	0.0	0.0
0700	17.8	24.9	59	250.0	2701.4	3157.2	3503.8	0.0	0.0
0800	18.8	25.5	57	250.0	3321.2	3337.3	3724.5	0.0	0.0
0900	20.3	26.2	54	250.0	3927.8	3534.8	3980.2	0.0	0.0
1000	22.1	26.8	52	250.0	4411.1	3706.9	4233.6	0.0	0.0
1100	24.0	27.3	50	250.0	4836.4	3870.3	4495.1	0.0	0.0
1200	25.9	27.9	49	250.0	5224.3	4030.0	4746.0	0.0	0.0
1300	27.2	28.3	47	250.0	5483.9	4155.0	4938.1	0.0	0.0
1400	28.2	28.5	47	250.0	5570.8	4226.0	5055.9	0.0	0.0
1500	28.5	28.5	46	250.0	5448.5	4226.3	5078.1	0.0	0.0
1600	28.2	28.2	47	250.0	5080.2	4138.3	4982.8	0.0	0.0
1700	27.4	27.8	49	250.0	4631.1	4010.5	4825.2	0.0	0.0
1800	26.1	27.6	50	250.0	4393.5	3939.5	4684.5	0.0	0.0
1900	24.6	27.3	50	250.0	4179.5	3871.6	4531.1	0.0	0.0
2000	23.1	27.1	51	250.0	3969.9	3799.8	4373.9	0.0	0.0
2100	21.8	26.9	52	250.0	3779.6	3729.4	4234.3	0.0	0.0
2200	20.7	26.6	53	250.0	3602.0	3659.0	4101.6	0.0	0.0
2300	19.8	26.4	54	250.0	3443.7	3591.4	3986.1	0.0	0.0

ZONE: Zone 3

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	29.7	41	250.0	4689.9	4583.4	4914.5	0.0	0.0
0100	18.5	29.5	41	250.0	4584.9	4519.4	4837.6	0.0	0.0
0200	17.9	29.3	42	250.0	4484.4	4456.0	4761.3	0.0	0.0
0300	17.5	29.1	42	250.0	4393.6	4395.6	4691.5	0.0	0.0
0400	17.1	28.9	43	250.0	4312.3	4338.4	4628.3	0.0	0.0
0500	17.0	28.7	43	250.0	4246.1	4287.2	4578.0	0.0	0.0
0600	17.2	28.6	44	250.0	4200.7	4245.0	4547.1	0.0	0.0
0700	17.8	28.5	44	250.0	4176.5	4212.6	4536.1	0.0	0.0
0800	18.8	29.3	42	250.0	4774.5	4451.3	4787.4	0.0	0.0
0900	20.3	30.0	40	250.0	5308.7	4685.0	5047.9	0.0	0.0
1000	22.1	30.7	38	250.0	5702.9	4871.7	5273.4	0.0	0.0
1100	24.0	31.2	37	250.0	6035.9	5040.1	5489.6	0.0	0.0
1200	25.9	31.7	36	250.0	6311.6	5190.3	5685.6	0.0	0.0
1300	27.2	32.1	35	250.0	6464.9	5292.2	5822.7	0.0	0.0
1400	28.2	32.2	34	250.0	6479.3	5334.3	5890.6	0.0	0.0
1500	28.5	32.1	35	250.0	6337.7	5305.3	5875.2	0.0	0.0
1600	28.2	31.8	35	250.0	6046.7	5204.2	5772.0	0.0	0.0
1700	27.4	31.4	36	250.0	5760.0	5094.0	5645.7	0.0	0.0
1800	26.1	31.2	37	250.0	5588.4	5025.1	5542.3	0.0	0.0
1900	24.6	30.9	37	250.0	5411.5	4949.8	5425.6	0.0	0.0
2000	23.1	30.7	38	250.0	5239.0	4871.6	5306.2	0.0	0.0
2100	21.8	30.4	39	250.0	5082.4	4795.9	5196.6	0.0	0.0
2200	20.7	30.2	39	250.0	4936.0	4721.1	5091.5	0.0	0.0
2300	19.8	29.9	40	250.0	4805.1	4650.1	4997.3	0.0	0.0

Hourly Zone Loads for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

ZONE: Zone 4

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	25.8	55	250.0	3199.3	3425.0	3791.9	0.0	0.0
0100	18.5	25.6	56	250.0	3081.0	3366.1	3704.3	0.0	0.0
0200	17.9	25.4	57	250.0	2967.6	3307.1	3618.6	0.0	0.0
0300	17.5	25.3	58	250.0	2865.5	3250.3	3542.2	0.0	0.0
0400	17.1	25.1	58	250.0	2774.9	3196.2	3475.5	0.0	0.0
0500	17.0	24.9	59	250.0	2702.7	3147.5	3428.3	0.0	0.0
0600	17.2	24.8	59	250.0	2656.5	3107.3	3410.5	0.0	0.0
0700	17.8	24.8	61	250.0	2637.4	2983.8	3273.1	0.0	0.0
0800	18.8	25.4	57	250.0	3361.9	3300.4	3679.7	0.0	0.0
0900	20.3	26.1	54	250.0	3992.4	3512.0	3946.9	0.0	0.0
1000	22.1	26.7	52	250.0	4426.2	3673.9	4191.7	0.0	0.0
1100	24.0	27.2	51	250.0	4786.9	3819.9	4441.2	0.0	0.0
1200	25.9	27.6	49	250.0	5066.1	3945.5	4663.9	0.0	0.0
1300	27.2	27.8	48	250.0	5193.6	4024.8	4813.6	0.0	0.0
1400	28.2	27.9	48	250.0	5168.7	4053.0	4896.1	0.0	0.0
1500	28.5	27.8	48	250.0	4982.7	4023.4	4893.5	0.0	0.0
1600	28.2	27.6	49	250.0	4673.8	3944.9	4806.1	0.0	0.0
1700	27.4	27.3	50	250.0	4421.6	3875.1	4696.5	0.0	0.0
1800	26.1	27.2	51	250.0	4229.6	3818.8	4568.3	0.0	0.0
1900	24.6	26.9	51	250.0	4027.2	3754.1	4418.1	0.0	0.0
2000	23.1	26.7	52	250.0	3828.3	3685.4	4263.9	0.0	0.0
2100	21.8	26.5	53	250.0	3647.9	3618.0	4127.2	0.0	0.0
2200	20.7	26.3	54	250.0	3479.6	3550.6	3997.3	0.0	0.0
2300	19.8	26.0	55	250.0	3329.9	3486.1	3884.7	0.0	0.0

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	34.5	0.01008	140	400	757	-452
Vent - Return Mixing	Outlet	-17.8	0.00000	0	0	-	-
Ventilation Fan	Outlet	-17.8	0.00000	0	0	0	-
Zone Air	-	30.2	0.01113	838	281	15488	3874
Return Plenum	Outlet	-17.8	0.01113	838	281	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.207; At site altitude = 1.202 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947.6; At site altitude = 2935.3 W/(L/s)

Site Altitude = 35.0 m

TABLE 2: ZONE DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Zone 1 (Cooling)							
Ventilation Air	-	-	-	9	-	-	-
Cooling Coil Inlet	-	25.4	0.01250	88	0	-	-
Cooling Coil Outlet	-	17.7	0.01213	88	0	812	95
Heating Coil Inlet	-	17.7	0.01213	88	0	-	-
Heating Coil Outlet	-	17.7	0.01213	88	0	0	-
Zone Air	-	24.3	0.01279	88	0	697	-
Zone 2 (Cooling)							
Ventilation Air	-	-	-	53	-	-	-
Cooling Coil Inlet	-	31.0	0.01100	250	0	-	-
Cooling Coil Outlet	-	14.4	0.00931	250	0	4972	1237
Heating Coil Inlet	-	14.4	0.00931	250	0	-	-
Heating Coil Outlet	-	14.4	0.00931	250	0	0	-
Zone Air	-	30.1	0.01125	250	0	4691	-
Zone 3 (Cooling)							
Ventilation Air	-	-	-	26	-	-	-
Cooling Coil Inlet	-	33.1	0.01030	250	0	-	-
Cooling Coil Outlet	-	14.4	0.00911	250	0	5621	874
Heating Coil Inlet	-	14.4	0.00911	250	0	-	-
Heating Coil Outlet	-	14.4	0.00911	250	0	0	-
Zone Air	-	33.0	0.01032	250	0	5573	-
Zone 4 (Cooling)							
Ventilation Air	-	-	-	52	-	-	-
Cooling Coil Inlet	-	30.6	0.01099	250	0	-	-
Cooling Coil Outlet	-	14.4	0.00934	250	0	4840	1212
Heating Coil Inlet	-	14.4	0.00934	250	0	-	-
Heating Coil Outlet	-	14.4	0.00934	250	0	0	-
Zone Air	-	29.5	0.01123	250	0	4527	-

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	4.5	0.00262	140	400	-2758	0
Vent - Return Mixing	Outlet	-17.8	0.00000	0	0	-	-
Ventilation Fan	Outlet	-17.8	0.00000	0	0	0	-
Zone Air	-	20.9	0.00262	838	0	-5155	0
Return Plenum	Outlet	-17.8	0.00262	838	0	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.207; At site altitude = 1.202 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947.6; At site altitude = 2935.3 W/(L/s)

Site Altitude = 35.0 m

TABLE 2: ZONE DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Zone 1 (Heating)							
Ventilation Air	-	-	-	9	-	-	-
Cooling Coil Inlet	-	19.2	0.00263	88	0	-	-
Cooling Coil Outlet	-	19.2	0.00263	88	0	0	0
Heating Coil Inlet	-	19.2	0.00263	88	0	-	-
Heating Coil Outlet	-	25.1	0.00263	88	0	632	-
Zone Air	-	20.9	0.00262	88	0	-446	-
Zone 2 (Heating)							
Ventilation Air	-	-	-	53	-	-	-
Cooling Coil Inlet	-	17.3	0.00262	250	0	-	-
Cooling Coil Outlet	-	17.3	0.00262	250	0	0	0
Heating Coil Inlet	-	17.3	0.00262	250	0	-	-
Heating Coil Outlet	-	26.3	0.00262	250	0	2708	-
Zone Air	-	20.7	0.00262	250	0	-1682	-
Zone 3 (Heating)							
Ventilation Air	-	-	-	26	-	-	-
Cooling Coil Inlet	-	19.2	0.00263	250	0	-	-
Cooling Coil Outlet	-	19.2	0.00263	250	0	0	0
Heating Coil Inlet	-	19.2	0.00263	250	0	-	-
Heating Coil Outlet	-	25.4	0.00263	250	0	1849	-
Zone Air	-	21.0	0.00262	250	0	-1326	-
Zone 4 (Heating)							
Ventilation Air	-	-	-	52	-	-	-
Cooling Coil Inlet	-	17.4	0.00262	250	0	-	-
Cooling Coil Outlet	-	17.4	0.00262	250	0	0	0
Heating Coil Inlet	-	17.4	0.00262	250	0	-	-
Heating Coil Outlet	-	26.5	0.00262	250	0	2724	-
Zone Air	-	20.8	0.00262	250	0	-1700	-

Psychrometric Analysis for Existing Dwelling System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

The psychrometric graph cannot be generated for this type of system.

Air System Sizing Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Air System Information

Air System Sizing Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Air System Name	**West Wing System**	Number of zones	**6**
Equipment Class	**TERM**	Floor Area	**158.6** m²
Air System Type	**VRF**	Location	**Melbourne, Australia**

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone L/s Sizing	**Sum of space airflow rates**
Sizing Data	**User-Modified**	Space L/s Sizing	**Individual peak space loads**

Zone Sizing Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Air System Information

Air System Name ..... **West Wing System**

Equipment Class ..... **TERM**

Air System Type ..... **VRF**

Number of zones **6**

Floor Area ..... **158.6** m²

Location ..... **Melbourne, Australia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**

Sizing Data ..... **User-Modified**

Zone L/s Sizing ..... **Sum of space airflow rates**

Space L/s Sizing ..... **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (kW)	Design Airflow (L/s)	Minimum Airflow (L/s)	Time of Peak Load	Maximum Heating Load (kW)	Zone Floor Area (m²)	Zone L/(s-m²)
Zone 1	3.3	150	150	Mar 1500	1.0	20.1	7.46
Zone 2	2.4	150	150	Apr 1500	0.6	15.4	9.74
Zone 3	2.4	150	150	Apr 1500	0.6	15.4	9.74
Zone 4	3.4	150	150	Feb 1600	1.0	16.5	9.09
Zone 5	1.9	150	150	Dec 1700	0.5	19.4	7.73
Zone 6	9.5	500	500	Feb 1600	2.8	71.8	6.96

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5.6 °K (L/s)	Time of Peak Load
Zone 1	3.1	2.7	29.5 / 19.6	14.4 / 13.5	-	Feb 1500
Zone 2	2.5	2.2	26.5 / 18.6	14.4 / 13.7	-	Mar 1500
Zone 3	2.5	2.2	26.6 / 18.6	14.4 / 13.7	-	Mar 1500
Zone 4	3.0	2.7	29.4 / 19.4	14.4 / 13.5	-	Feb 1700
Zone 5	2.4	2.0	25.7 / 18.5	14.4 / 13.8	-	Dec 1700
Zone 6	10.1	8.8	29.2 / 19.5	14.4 / 13.6	-	Jan 1600

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11.1 °K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1.3	19.7 / 26.8	-	150	0.000	0.000	11
Zone 2	0.7	19.7 / 23.7	-	150	0.000	0.000	10
Zone 3	0.8	19.9 / 24.2	-	150	0.000	0.000	10
Zone 4	1.2	19.8 / 26.3	-	150	0.000	0.000	10
Zone 5	0.8	19.0 / 23.6	-	150	0.000	0.000	17
Zone 6	5.0	16.8 / 25.1	-	500	0.000	0.000	122

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s-m²)
Zone 1							
WW Bed 2	1	3.3	Mar 1500	294	1.0	20.1	14.65
Zone 2							
WW Bed 3	1	2.4	Apr 1500	209	0.6	15.4	13.57
Zone 3							
WW Bed 4	1	2.4	Apr 1500	212	0.6	15.4	13.74
Zone 4							
WW Bed 5	1	3.4	Feb 1600	301	1.0	16.5	18.22
Zone 5							
WW Laundry+Hall Corr.	1	1.9	Dec 1700	170	0.5	19.4	8.78
Zone 6							
WW Rumpus + Hall Corr.	1	9.5	Feb 1600	833	2.8	71.8	11.60

Ventilation Sizing Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

No data is available for this report. Space by space ventilation calculations were not performed for this air system because it uses the 'user-defined' sizing option. With this option the system outdoor ventilation air flow is specified directly by the user. Therefore, space-by-space calculations are not performed.

Air System Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Air System Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1600 COOLING OA DB / WB 34.2 °C / 20.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
ZONE LOADS	**Details**	**Sensible (W)**	**Latent (W)**	**Details**	**Sensible (W)**	**Latent (W)**
Window & Skylight Solar Loads	75 m²	8420	-	75 m²	-	-
Wall Transmission	98 m²	833	-	98 m²	587	-
Roof Transmission	159 m²	724	-	159 m²	329	-
Window Transmission	75 m²	2056	-	75 m²	4040	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	159 m²	0	-	159 m²	275	-
Partitions	212 m²	728	-	212 m²	644	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	1183 W	1183	-	0	0	-
Task Lighting	300 W	300	-	0	0	-
Electric Equipment	3900 W	3900	-	0	0	-
People	25	2127	2899	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	2027	145	10%	588	0
>> Total Zone Loads	**-**	**22297**	**3044**	**-**	**6463**	**0**
Zone Conditioning	-	18916	3044	-	6276	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	0 L/s	0	-	0 L/s	0	-
Ventilation Load	178 L/s	1485	-119	178 L/s	3496	0
Ventilation Fan Load	0 L/s	0	-	0 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**20402**	**2925**	**-**	**9771**	**0**
Terminal Unit Cooling	-	20402	2929	-	0	0
Terminal Unit Heating	-	0	-	-	9771	-
>> Total Conditioning	**-**	**20402**	**2929**	**-**	**9771**	**0**
Key:	**Positive values are clg loads** **Negative values are htg loads**			**Positive values are htg loads** **Negative values are clg loads**		

Zone Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Zone 1	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Mar 1500 COOLING OA DB / WB 33.4 °C / 20.4 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	13 m²	1711	-	13 m²	-	-
Wall Transmission	22 m²	159	-	22 m²	132	-
Roof Transmission	20 m²	69	-	20 m²	42	-
Window Transmission	13 m²	305	-	13 m²	682	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	20 m²	0	-	20 m²	35	-
Partitions	17 m²	55	-	17 m²	53	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	101 W	100	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	304	8	10%	94	0
>> Total Zone Loads	**-**	**3343**	**166**	**-**	**1038**	**0**

Zone Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Zone 2	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Apr 1500 COOLING OA DB / WB 32.3 °C / 19.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	7 m²	1144	-	7 m²	-	-
Wall Transmission	4 m²	56	-	4 m²	25	-
Roof Transmission	15 m²	37	-	15 m²	32	-
Window Transmission	7 m²	130	-	7 m²	341	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	15 m²	0	-	15 m²	27	-
Partitions	26 m²	75	-	26 m²	79	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	77 W	77	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	216	8	10%	50	0
>> Total Zone Loads	**-**	**2373**	**166**	**-**	**555**	**0**

Zone Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Zone 3	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Apr 1500 COOLING OA DB / WB 32.3 °C / 19.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	7 m²	1144	-	7 m²	-	-
Wall Transmission	4 m²	53	-	4 m²	23	-
Roof Transmission	15 m²	37	-	15 m²	32	-
Window Transmission	7 m²	130	-	7 m²	341	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	15 m²	0	-	15 m²	27	-
Partitions	36 m²	103	-	36 m²	110	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	77 W	77	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	218	8	10%	53	0
>> Total Zone Loads	**-**	**2402**	**166**	**-**	**587**	**0**

Zone Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Zone 4	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1600 COOLING OA DB / WB 34.2 °C / 20.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	13 m²	1718	-	13 m²	-	-
Wall Transmission	12 m²	156	-	12 m²	73	-
Roof Transmission	17 m²	75	-	17 m²	34	-
Window Transmission	13 m²	347	-	13 m²	682	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	17 m²	0	-	17 m²	29	-
Partitions	25 m²	85	-	25 m²	75	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	83 W	82	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	310	8	10%	89	0
>> Total Zone Loads	**-**	**3413**	**166**	**-**	**983**	**0**

Zone Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Zone 5	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1700 COOLING OA DB / WB 32.8 °C / 20.7 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	3 m²	527	-	3 m²	-	-
Wall Transmission	9 m²	130	-	9 m²	52	-
Roof Transmission	19 m²	101	-	19 m²	40	-
Window Transmission	3 m²	94	-	3 m²	209	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	19 m²	0	-	19 m²	34	-
Partitions	50 m²	160	-	50 m²	153	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	272 W	272	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	300 W	300	-	0	0	-
People	2	173	267	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	176	13	10%	49	0
>> Total Zone Loads	**-**	**1933**	**280**	**-**	**537**	**0**

Zone Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Zone 6	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1600 COOLING OA DB / WB 34.2 °C / 20.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	32 m²	2985	-	32 m²	-	-
Wall Transmission	47 m²	306	-	47 m²	281	-
Roof Transmission	72 m²	328	-	72 m²	149	-
Window Transmission	32 m²	908	-	32 m²	1785	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	72 m²	0	-	72 m²	123	-
Partitions	57 m²	196	-	57 m²	174	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	574 W	574	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2000 W	2000	-	0	0	-
People	15	1297	2000	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	859	100	10%	251	0
>> Total Zone Loads	**-**	**9454**	**2099**	**-**	**2763**	**0**

TABLE 1.1.A. COMPONENT LOADS FOR SPACE " WW Bed 2 " IN ZONE " Zone 1 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Mar 1500 COOLING OA DB / WB 33.4 °C / 20.4 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	13 m²	1711	-	13 m²	-	-
Wall Transmission	22 m²	159	-	22 m²	132	-
Roof Transmission	20 m²	69	-	20 m²	42	-
Window Transmission	13 m²	305	-	13 m²	682	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	20 m²	0	-	20 m²	35	-
Partitions	17 m²	55	-	17 m²	53	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	101 W	100	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	304	8	10%	94	0
>> Total Zone Loads	**-**	**3343**	**166**	**-**	**1038**	**0**

TABLE 1.1.B. ENVELOPE LOADS FOR SPACE " WW Bed 2 " IN ZONE " Zone 1 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m^2)	($W/(m^2\text{-}°K)$)	Coeff.	(W)	(W)	(W)
NNW EXPOSURE						
WALL	5	0.362	-	64	-	28
WINDOW 1	5	3.050	0.530	113	813	253
WINDOW 2	2	3.300	0.520	39	255	88
ENE EXPOSURE						
WALL	17	0.362	-	96	-	105
WINDOW 1	5	3.050	0.530	113	489	253
WINDOW 2	2	3.300	0.520	39	154	88
H EXPOSURE						
ROOF	20	0.125	-	69	-	42

Space Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

TABLE 2.1.A. COMPONENT LOADS FOR SPACE " WW Bed 3 " IN ZONE " Zone 2 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Apr 1500 COOLING OA DB / WB 32.3 °C / 19.9 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	7 m²	1144	-	7 m²	-	-
Wall Transmission	4 m²	56	-	4 m²	25	-
Roof Transmission	15 m²	37	-	15 m²	32	-
Window Transmission	7 m²	130	-	7 m²	341	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	15 m²	0	-	15 m²	27	-
Partitions	26 m²	75	-	26 m²	79	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	77 W	77	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	216	8	10%	50	0
>> Total Zone Loads	**-**	**2373**	**166**	**-**	**555**	**0**

TABLE 2.1.B. ENVELOPE LOADS FOR SPACE " WW Bed 3 " IN ZONE " Zone 2 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m^2)	($W/(m^2\text{-}°K)$)	Coeff.	(W)	(W)	(W)
NNW EXPOSURE						
WALL	4	0.362	-	56	-	25
WINDOW 1	5	3.050	0.530	97	870	253
WINDOW 2	2	3.300	0.520	33	273	88
H EXPOSURE						
ROOF	15	0.125	-	37	-	32

Space Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

TABLE 3.1.A. COMPONENT LOADS FOR SPACE " WW Bed 4 " IN ZONE " Zone 3 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Apr 1500 COOLING OA DB / WB 32.3 °C / 19.9 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	7 m²	1144	-	7 m²	-	-
Wall Transmission	4 m²	53	-	4 m²	23	-
Roof Transmission	15 m²	37	-	15 m²	32	-
Window Transmission	7 m²	130	-	7 m²	341	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	15 m²	0	-	15 m²	27	-
Partitions	36 m²	103	-	36 m²	110	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	77 W	77	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	218	8	10%	53	0
>> Total Zone Loads	**-**	**2402**	**166**	**-**	**587**	**0**

TABLE 3.1.B. ENVELOPE LOADS FOR SPACE " WW Bed 4 " IN ZONE " Zone 3 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m^2)	($W/(m^2-°K)$)	Coeff.	(W)	(W)	(W)
NNW EXPOSURE						
WALL	4	0.362	-	53	-	23
WINDOW 1	5	3.050	0.530	97	870	253
WINDOW 2	2	3.300	0.520	33	273	88
H EXPOSURE						
ROOF	15	0.125	-	37	-	32

Space Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

TABLE 4.1.A. COMPONENT LOADS FOR SPACE " WW Bed 5 " IN ZONE " Zone 4 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1600 COOLING OA DB / WB 34.2 °C / 20.9 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	13 m²	1718	-	13 m²	-	-
Wall Transmission	12 m²	156	-	12 m²	73	-
Roof Transmission	17 m²	75	-	17 m²	34	-
Window Transmission	13 m²	347	-	13 m²	682	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	17 m²	0	-	17 m²	29	-
Partitions	25 m²	85	-	25 m²	75	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	83 W	82	-	0	0	-
Task Lighting	75 W	75	-	0	0	-
Electric Equipment	400 W	400	-	0	0	-
People	2	164	158	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	310	8	10%	89	0
>> Total Zone Loads	**-**	**3413**	**166**	**-**	**983**	**0**

TABLE 4.1.B. ENVELOPE LOADS FOR SPACE " WW Bed 5 " IN ZONE " Zone 4 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m^2)	($W/(m^2\text{-}°K)$)	Coeff.	(W)	(W)	(W)
NNW EXPOSURE						
WALL	5	0.362	-	56	-	28
WINDOW 1	5	3.050	0.530	129	673	253
WINDOW 2	2	3.300	0.520	45	211	88
WSW EXPOSURE						
WALL	8	0.362	-	100	-	45
WINDOW 1	5	3.050	0.530	129	634	253
WINDOW 2	2	3.300	0.520	45	199	88
H EXPOSURE						
ROOF	17	0.125	-	75	-	34

Space Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

TABLE 5.1.A. COMPONENT LOADS FOR SPACE " WW Laundry+Hall Corr. " IN ZONE " Zone 5 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1700 COOLING OA DB / WB 32.8 °C / 20.7 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	3 m²	527	-	3 m²	-	-
Wall Transmission	9 m²	130	-	9 m²	52	-
Roof Transmission	19 m²	101	-	19 m²	40	-
Window Transmission	3 m²	94	-	3 m²	209	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	19 m²	0	-	19 m²	34	-
Partitions	50 m²	160	-	50 m²	153	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	272 W	272	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	300 W	300	-	0	0	-
People	2	173	267	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	176	13	10%	49	0
>> Total Zone Loads	**-**	**1933**	**280**	**-**	**537**	**0**

TABLE 5.1.B. ENVELOPE LOADS FOR SPACE " WW Laundry+Hall Corr. " IN ZONE " Zone 5 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²-°K))	Coeff.	(W)	(W)	(W)
WSW EXPOSURE						
WALL	9	0.362	-	130	-	52
WINDOW 1	3	4.500	0.590	94	527	209
H EXPOSURE						
ROOF	19	0.125	-	101	-	40

Space Design Load Summary for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

TABLE 6.1.A. COMPONENT LOADS FOR SPACE " WW Rumpus + Hall Corr. " IN ZONE " Zone 6 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1600 COOLING OA DB / WB 34.2 °C / 20.9 °C OCCUPIED T-STAT 23.9 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 4.5 °C / 0.9 °C OCCUPIED T-STAT 21.1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	**Details**	**(W)**	**(W)**	**Details**	**(W)**	**(W)**
Window & Skylight Solar Loads	32 m²	2985	-	32 m²	-	-
Wall Transmission	47 m²	306	-	47 m²	281	-
Roof Transmission	72 m²	328	-	72 m²	149	-
Window Transmission	32 m²	908	-	32 m²	1785	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	72 m²	0	-	72 m²	123	-
Partitions	57 m²	196	-	57 m²	174	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	574 W	574	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2000 W	2000	-	0	0	-
People	15	1297	2000	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	859	100	10%	251	0
>> Total Zone Loads	**-**	**9454**	**2099**	**-**	**2763**	**0**

TABLE 6.1.B. ENVELOPE LOADS FOR SPACE " WW Rumpus + Hall Corr. " IN ZONE " Zone 6 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m^2)	($W/(m^2\text{-}°K)$)	Coeff.	(W)	(W)	(W)
NNW EXPOSURE						
WALL	2	0.362	-	29	-	14
WINDOW 1	15	3.300	0.520	407	1929	800
WSW EXPOSURE						
WALL	3	0.362	-	44	-	20
ENE EXPOSURE						
WALL	3	0.362	-	20	-	20
SSE EXPOSURE						
WALL	29	0.362	-	149	-	177
WINDOW 1	10	3.050	0.530	247	404	486
SSW EXPOSURE						
WALL	2	0.362	-	12	-	11
WINDOW 1	5	3.300	0.520	139	228	274
WSW EXPOSURE						
WALL	2	0.362	-	24	-	11
WINDOW 1	3	4.500	0.590	114	423	224
ENE EXPOSURE						
WALL	5	0.362	-	29	-	29
H EXPOSURE						
ROOF	72	0.125	-	328	-	149

Hourly Air System Design Day Loads for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	COMMON VENT AIRFLOW (L/s)	CENTRAL COOLING SENSIBLE (kW)	CENTRAL COOLING TOTAL (kW)	CENTRAL HEATING COIL (kW)	VENT COOLING COIL (kW)	VENT HEATING COIL (kW)	TERMINAL COOLING (kW)	TERMINAL HEATING (kW)	ZONE HEATING UNIT (kW)
0000	19.1	0	0.0	0.0	0.0	0.0	0.0	11.1	0.0	0.0
0100	18.5	0	0.0	0.0	0.0	0.0	0.0	10.3	0.0	0.0
0200	17.9	0	0.0	0.0	0.0	0.0	0.0	9.7	0.0	0.0
0300	17.5	0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0
0400	17.1	0	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.0
0500	17.0	0	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0
0600	17.2	0	0.0	0.0	0.0	0.0	0.0	8.2	0.0	0.0
0700	17.8	0	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0
0800	18.8	0	0.0	0.0	0.0	0.0	0.0	9.3	0.0	0.0
0900	20.3	0	0.0	0.0	0.0	0.0	0.0	11.0	0.0	0.0
1000	22.1	0	0.0	0.0	0.0	0.0	0.0	13.2	0.0	0.0
1100	24.0	0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0
1200	25.9	0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0
1300	27.2	0	0.0	0.0	0.0	0.0	0.0	17.5	0.0	0.0
1400	28.2	0	0.0	0.0	0.0	0.0	0.0	18.2	0.0	0.0
1500	28.5	0	0.0	0.0	0.0	0.0	0.0	18.6	0.0	0.0
1600	28.2	0	0.0	0.0	0.0	0.0	0.0	18.3	0.0	0.0
1700	27.4	0	0.0	0.0	0.0	0.0	0.0	17.1	0.0	0.0
1800	26.1	0	0.0	0.0	0.0	0.0	0.0	16.3	0.0	0.0
1900	24.6	0	0.0	0.0	0.0	0.0	0.0	15.6	0.0	0.0
2000	23.1	0	0.0	0.0	0.0	0.0	0.0	14.7	0.0	0.0
2100	21.8	0	0.0	0.0	0.0	0.0	0.0	13.8	0.0	0.0
2200	20.7	0	0.0	0.0	0.0	0.0	0.0	12.8	0.0	0.0
2300	19.8	0	0.0	0.0	0.0	0.0	0.0	11.6	0.0	0.0

Hourly Zone Loads for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

ZONE: Zone 1

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	24.4	59	150.0	1419.3	1591.2	1786.8	0.0	0.0
0100	18.5	24.5	62	150.0	1335.8	1464.0	1631.3	0.0	0.0
0200	17.9	24.5	64	150.0	1255.8	1364.7	1512.9	0.0	0.0
0300	17.5	24.5	67	150.0	1183.4	1266.6	1388.1	0.0	0.0
0400	17.1	24.3	68	150.0	1118.7	1235.4	1353.0	0.0	0.0
0500	17.0	24.5	70	150.0	1066.1	1121.7	1215.6	0.0	0.0
0600	17.2	24.4	71	150.0	1030.2	1100.2	1197.1	0.0	0.0
0700	17.8	24.4	72	150.0	1011.6	1061.7	1159.1	0.0	0.0
0800	18.8	24.7	62	150.0	1498.9	1453.1	1616.2	0.0	0.0
0900	20.3	24.9	53	150.0	1968.7	1885.2	2119.3	0.0	0.0
1000	22.1	25.7	51	150.0	2309.4	2025.2	2273.6	0.0	0.0
1100	24.0	26.3	49	150.0	2549.9	2135.1	2402.8	0.0	0.0
1200	25.9	26.7	47	150.0	2688.3	2208.1	2498.5	0.0	0.0
1300	27.2	26.9	47	150.0	2736.3	2245.8	2551.1	0.0	0.0
1400	28.2	27.2	46	150.0	2813.3	2294.5	2608.8	0.0	0.0
1500	28.5	27.3	46	150.0	2809.9	2311.4	2629.3	0.0	0.0
1600	28.2	26.9	47	150.0	2613.2	2248.0	2565.0	0.0	0.0
1700	27.4	26.2	49	150.0	2276.2	2120.1	2433.8	0.0	0.0
1800	26.1	25.9	50	150.0	2135.5	2061.6	2362.7	0.0	0.0
1900	24.6	25.5	51	150.0	1995.0	2001.3	2286.3	0.0	0.0
2000	23.1	25.2	52	150.0	1857.5	1938.9	2208.1	0.0	0.0
2100	21.8	24.9	53	150.0	1732.4	1878.7	2134.9	0.0	0.0
2200	20.7	24.8	56	150.0	1615.6	1762.1	1991.5	0.0	0.0
2300	19.8	24.7	58	150.0	1511.2	1656.2	1862.4	0.0	0.0

Hourly Zone Loads for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

ZONE: Zone 2

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	24.5	66	150.0	1237.9	1252.2	1342.6	0.0	0.0
0100	18.5	24.5	68	150.0	1185.4	1182.5	1253.8	0.0	0.0
0200	17.9	24.6	69	150.0	1135.2	1124.1	1180.0	0.0	0.0
0300	17.5	24.4	70	150.0	1089.7	1099.8	1149.1	0.0	0.0
0400	17.1	24.5	71	150.0	1048.8	1051.4	1091.1	0.0	0.0
0500	17.0	24.3	71	150.0	1014.9	1037.9	1076.3	0.0	0.0
0600	17.2	24.3	72	150.0	990.6	1007.6	1042.0	0.0	0.0
0700	17.8	24.4	73	150.0	976.0	971.0	1005.6	0.0	0.0
0800	18.8	24.5	71	150.0	1039.3	1030.4	1086.9	0.0	0.0
0900	20.3	24.5	67	150.0	1208.0	1188.1	1283.4	0.0	0.0
1000	22.1	24.5	62	150.0	1422.5	1410.9	1559.0	0.0	0.0
1100	24.0	24.6	57	150.0	1652.8	1621.9	1816.7	0.0	0.0
1200	25.9	24.8	54	150.0	1869.0	1798.8	2029.3	0.0	0.0
1300	27.2	25.1	51	150.0	2053.5	1923.9	2173.6	0.0	0.0
1400	28.2	25.5	50	150.0	2175.5	1989.9	2246.5	0.0	0.0
1500	28.5	25.6	50	150.0	2202.4	2012.5	2271.8	0.0	0.0
1600	28.2	25.2	51	150.0	2052.3	1948.5	2207.1	0.0	0.0
1700	27.4	24.7	54	150.0	1772.3	1787.4	2035.4	0.0	0.0
1800	26.1	24.9	57	150.0	1682.7	1647.2	1856.1	0.0	0.0
1900	24.6	24.7	58	150.0	1595.1	1585.8	1773.7	0.0	0.0
2000	23.1	24.5	59	150.0	1510.1	1547.3	1721.6	0.0	0.0
2100	21.8	24.5	61	150.0	1432.7	1452.1	1595.2	0.0	0.0
2200	20.7	24.6	63	150.0	1360.4	1365.7	1485.9	0.0	0.0
2300	19.8	24.6	65	150.0	1295.4	1293.9	1393.0	0.0	0.0

ZONE: Zone 3

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	24.5	66	150.0	1240.1	1245.2	1331.9	0.0	0.0
0100	18.5	24.5	68	150.0	1186.2	1185.3	1256.6	0.0	0.0
0200	17.9	24.3	68	150.0	1134.7	1173.0	1241.9	0.0	0.0
0300	17.5	24.4	70	150.0	1088.1	1094.2	1141.7	0.0	0.0
0400	17.1	24.5	71	150.0	1046.3	1047.7	1086.8	0.0	0.0
0500	17.0	24.3	71	150.0	1011.9	1033.1	1069.8	0.0	0.0
0600	17.2	24.3	72	150.0	987.7	1007.1	1042.6	0.0	0.0
0700	17.8	24.2	72	150.0	974.0	1008.8	1058.6	0.0	0.0
0800	18.8	24.2	71	150.0	1038.9	1066.9	1137.1	0.0	0.0
0900	20.3	24.3	67	150.0	1209.9	1208.0	1312.8	0.0	0.0
1000	22.1	24.6	63	150.0	1427.2	1378.7	1518.0	0.0	0.0
1100	24.0	24.6	58	150.0	1660.9	1612.8	1804.9	0.0	0.0
1200	25.9	24.8	54	150.0	1880.5	1803.9	2035.3	0.0	0.0
1300	27.2	25.1	51	150.0	2067.8	1926.6	2176.1	0.0	0.0
1400	28.2	25.5	50	150.0	2191.9	1993.4	2249.8	0.0	0.0
1500	28.5	25.6	50	150.0	2220.0	2016.8	2275.9	0.0	0.0
1600	28.2	25.3	51	150.0	2070.3	1954.1	2212.3	0.0	0.0
1700	27.4	24.8	54	150.0	1790.1	1776.7	2020.5	0.0	0.0
1800	26.1	24.7	56	150.0	1698.5	1689.5	1906.8	0.0	0.0
1900	24.6	24.7	58	150.0	1608.3	1595.0	1784.4	0.0	0.0
2000	23.1	24.5	59	150.0	1520.5	1550.3	1724.3	0.0	0.0
2100	21.8	24.6	61	150.0	1440.6	1441.7	1584.3	0.0	0.0
2200	20.7	24.6	63	150.0	1366.0	1361.7	1479.8	0.0	0.0
2300	19.8	24.5	64	150.0	1299.1	1323.0	1427.5	0.0	0.0

Hourly Zone Loads for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

ZONE: Zone 4

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	24.5	65	150.0	1260.1	1285.6	1390.3	0.0	0.0
0100	18.5	24.5	67	150.0	1188.2	1213.4	1302.3	0.0	0.0
0200	17.9	24.5	69	150.0	1119.1	1144.0	1216.8	0.0	0.0
0300	17.5	24.4	70	150.0	1056.8	1081.3	1136.8	0.0	0.0
0400	17.1	24.4	72	150.0	1001.5	1025.3	1073.3	0.0	0.0
0500	17.0	24.4	73	150.0	957.4	980.2	1019.2	0.0	0.0
0600	17.2	24.4	74	150.0	929.3	950.3	986.5	0.0	0.0
0700	17.8	24.3	74	150.0	917.4	957.7	1009.9	0.0	0.0
0800	18.8	24.4	72	150.0	1008.7	1009.4	1075.1	0.0	0.0
0900	20.3	24.5	68	150.0	1219.3	1194.6	1303.9	0.0	0.0
1000	22.1	24.6	62	150.0	1479.4	1423.9	1582.5	0.0	0.0
1100	24.0	24.7	56	150.0	1758.0	1691.7	1907.4	0.0	0.0
1200	25.9	24.9	52	150.0	2018.0	1894.4	2148.2	0.0	0.0
1300	27.2	25.5	50	150.0	2236.9	1996.1	2259.6	0.0	0.0
1400	28.2	26.0	48	150.0	2426.6	2090.8	2359.9	0.0	0.0
1500	28.5	26.5	47	150.0	2583.7	2174.6	2443.2	0.0	0.0
1600	28.2	26.3	48	150.0	2457.5	2135.2	2401.7	0.0	0.0
1700	27.4	25.2	51	150.0	2012.9	1948.0	2214.8	0.0	0.0
1800	26.1	24.9	52	150.0	1884.7	1887.0	2142.5	0.0	0.0
1900	24.6	24.8	54	150.0	1761.8	1787.6	2017.8	0.0	0.0
2000	23.1	24.7	57	150.0	1641.3	1670.5	1872.0	0.0	0.0
2100	21.8	24.7	59	150.0	1532.1	1558.9	1729.0	0.0	0.0
2200	20.7	24.6	61	150.0	1430.0	1456.0	1599.7	0.0	0.0
2300	19.8	24.6	63	150.0	1339.3	1365.0	1486.7	0.0	0.0

ZONE: Zone 5

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	24.3	79	150.0	819.1	802.1	706.3	0.0	0.0
0100	18.5	24.2	78	150.0	797.3	810.9	713.7	0.0	0.0
0200	17.9	24.3	79	150.0	776.0	753.0	625.1	0.0	0.0
0300	17.5	24.2	80	150.0	757.4	762.6	627.8	0.0	0.0
0400	17.1	24.2	80	150.0	741.7	749.8	608.6	0.0	0.0
0500	17.0	24.3	79	150.0	731.3	715.5	570.2	0.0	0.0
0600	17.2	24.1	80	150.0	728.9	741.8	603.4	0.0	0.0
0700	17.8	24.2	80	150.0	735.0	736.6	609.0	0.0	0.0
0800	18.8	24.3	79	150.0	760.7	736.6	627.7	0.0	0.0
0900	20.3	24.2	79	150.0	801.2	801.2	740.1	0.0	0.0
1000	22.1	24.2	77	150.0	849.9	839.8	822.2	0.0	0.0
1100	24.0	24.4	77	150.0	906.8	863.9	883.8	0.0	0.0
1200	25.9	24.2	74	150.0	963.0	953.5	1040.9	0.0	0.0
1300	27.2	24.3	73	150.0	1009.8	981.7	1099.0	0.0	0.0
1400	28.2	24.4	72	150.0	1071.6	1023.9	1163.0	0.0	0.0
1500	28.5	24.5	71	150.0	1156.4	1080.7	1236.9	0.0	0.0
1600	28.2	24.3	68	150.0	1170.4	1170.3	1357.7	0.0	0.0
1700	27.4	24.5	73	150.0	1071.0	1006.9	1122.2	0.0	0.0
1800	26.1	24.4	73	150.0	1029.0	1000.9	1095.3	0.0	0.0
1900	24.6	24.2	73	150.0	987.5	994.0	1063.4	0.0	0.0
2000	23.1	24.4	75	150.0	945.6	914.2	924.6	0.0	0.0
2100	21.8	24.3	76	150.0	908.3	904.9	895.5	0.0	0.0
2200	20.7	24.4	77	150.0	873.6	844.8	789.9	0.0	0.0
2300	19.8	24.1	76	150.0	843.8	879.9	829.5	0.0	0.0

Hourly Zone Loads for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

ZONE: Zone 6

DESIGN MONTH: JULY

Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	19.1	24.5	60	500.0	5086.3	5321.3	4555.3	0.0	0.0
0100	18.5	24.5	60	500.0	4916.0	5040.7	4155.8	0.0	0.0
0200	17.9	24.5	60	500.0	4751.9	4867.6	3901.6	0.0	0.0
0300	17.5	24.6	60	500.0	4604.9	4614.2	3568.2	0.0	0.0
0400	17.1	24.4	60	500.0	4475.3	4655.9	3589.7	0.0	0.0
0500	17.0	24.5	60	500.0	4374.7	4435.0	3338.9	0.0	0.0
0600	17.2	24.5	60	500.0	4315.5	4346.3	3281.7	0.0	0.0
0700	17.8	24.4	60	500.0	4299.3	4390.4	3422.5	0.0	0.0
0800	18.8	24.5	60	500.0	4560.0	4540.1	3709.4	0.0	0.0
0900	20.3	24.7	59	500.0	5078.1	4890.1	4251.6	0.0	0.0
1000	22.1	24.6	57	500.0	5685.8	5644.3	5450.5	0.0	0.0
1100	24.0	24.8	55	500.0	6330.1	6013.5	6159.9	0.0	0.0
1200	25.9	25.1	52	500.0	6931.3	6411.5	6901.9	0.0	0.0
1300	27.2	25.5	51	500.0	7428.1	6632.3	7283.3	0.0	0.0
1400	28.2	25.8	50	500.0	7786.6	6810.3	7562.8	0.0	0.0
1500	28.5	25.9	50	500.0	7941.0	6912.3	7695.3	0.0	0.0
1600	28.2	25.8	50	500.0	7610.6	6818.8	7569.0	0.0	0.0
1700	27.4	25.3	52	500.0	6874.3	6546.4	7231.7	0.0	0.0
1800	26.1	25.1	52	500.0	6593.3	6432.8	6951.2	0.0	0.0
1900	24.6	24.9	53	500.0	6297.1	6309.4	6627.3	0.0	0.0
2000	23.1	24.7	54	500.0	6004.5	6179.7	6298.4	0.0	0.0
2100	21.8	24.6	55	500.0	5740.1	5950.1	5815.5	0.0	0.0
2200	20.7	24.5	57	500.0	5493.2	5757.5	5409.7	0.0	0.0
2300	19.8	24.7	59	500.0	5275.1	5318.6	4594.4	0.0	0.0

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	34.2	0.01008	178	400	1485	-119
Vent - Return Mixing	Outlet	-17.8	0.00000	0	0	-	-
Ventilation Fan	Outlet	-17.8	0.00000	0	0	0	-
Zone Air	-	27.1	0.01028	1250	173	18916	3044
Return Plenum	Outlet	-17.8	0.01028	1250	173	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.207; At site altitude = 1.202 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947.6; At site altitude = 2935.3 W/(L/s)

Site Altitude = 35.0 m

TABLE 2: ZONE DATA

System Psychrometrics for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Zone 1 (Cooling)							
Ventilation Air	-	-	-	11	-	-	-
Cooling Coil Inlet	-	29.4	0.01020	150	0	-	-
Cooling Coil Outlet	-	14.4	0.00933	150	0	2704	382
Heating Coil Inlet	-	14.4	0.00933	150	0	-	-
Heating Coil Outlet	-	14.4	0.00933	150	0	0	-
Zone Air	-	29.1	0.01020	150	0	2637	-
Zone 2 (Cooling)							
Ventilation Air	-	-	-	10	-	-	-
Cooling Coil Inlet	-	26.1	0.01020	150	0	-	-
Cooling Coil Outlet	-	14.4	0.00953	150	0	2108	292
Heating Coil Inlet	-	14.4	0.00953	150	0	-	-
Heating Coil Outlet	-	14.4	0.00953	150	0	0	-
Zone Air	-	25.6	0.01020	150	0	2009	-
Zone 3 (Cooling)							
Ventilation Air	-	-	-	10	-	-	-
Cooling Coil Inlet	-	26.2	0.01019	150	0	-	-
Cooling Coil Outlet	-	14.4	0.00953	150	0	2122	293
Heating Coil Inlet	-	14.4	0.00953	150	0	-	-
Heating Coil Outlet	-	14.4	0.00953	150	0	0	-
Zone Air	-	25.7	0.01020	150	0	2023	-
Zone 4 (Cooling)							
Ventilation Air	-	-	-	10	-	-	-
Cooling Coil Inlet	-	29.4	0.01003	150	0	-	-
Cooling Coil Outlet	-	14.4	0.00931	150	0	2701	319
Heating Coil Inlet	-	14.4	0.00931	150	0	-	-
Heating Coil Outlet	-	14.4	0.00931	150	0	0	-
Zone Air	-	29.1	0.01003	150	0	2640	-
Zone 5 (Cooling)							
Ventilation Air	-	-	-	17	-	-	-
Cooling Coil Inlet	-	25.6	0.01069	150	0	-	-
Cooling Coil Outlet	-	14.9	0.00993	150	0	1931	337
Heating Coil Inlet	-	14.9	0.00993	150	0	-	-
Heating Coil Outlet	-	14.9	0.00993	150	0	0	-

System Psychrometrics for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Zone Air	-	24.6	0.01077	150	0	1740	-
Zone 6 (Cooling)							
Ventilation Air	-	-	-	122	-	-	-
Cooling Coil Inlet	-	29.1	0.01025	500	0	-	-
Cooling Coil Outlet	-	14.4	0.00935	500	0	8835	1306
Heating Coil Inlet	-	14.4	0.00935	500	0	-	-
Heating Coil Outlet	-	14.4	0.00935	500	0	0	-
Zone Air	-	27.5	0.01029	500	0	7867	-

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	4.5	0.00262	178	400	-3496	0
Vent - Return Mixing	Outlet	-17.8	0.00000	0	0	-	-
Ventilation Fan	Outlet	-17.8	0.00000	0	0	0	-
Zone Air	-	20.8	0.00262	1250	0	-6276	0
Return Plenum	Outlet	-17.8	0.00262	1250	0	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.207; At site altitude = 1.202 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947.6; At site altitude = 2935.3 W/(L/s)

Site Altitude = 35.0 m

TABLE 2: ZONE DATA

System Psychrometrics for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Zone 1 (Heating)							
Ventilation Air	-	-	-	11	-	-	-
Cooling Coil Inlet	-	19.7	0.00263	150	0	-	-
Cooling Coil Outlet	-	19.7	0.00263	150	0	0	0
Heating Coil Inlet	-	19.7	0.00263	150	0	-	-
Heating Coil Outlet	-	26.8	0.00263	150	0	1271	-
Zone Air	-	20.9	0.00262	150	0	-1053	-
Zone 2 (Heating)							
Ventilation Air	-	-	-	10	-	-	-
Cooling Coil Inlet	-	19.7	0.00263	150	0	-	-
Cooling Coil Outlet	-	19.7	0.00263	150	0	0	0
Heating Coil Inlet	-	19.7	0.00263	150	0	-	-
Heating Coil Outlet	-	23.7	0.00263	150	0	710	-
Zone Air	-	20.8	0.00262	150	0	-522	-
Zone 3 (Heating)							
Ventilation Air	-	-	-	10	-	-	-
Cooling Coil Inlet	-	19.9	0.00263	150	0	-	-
Cooling Coil Outlet	-	19.9	0.00263	150	0	0	0
Heating Coil Inlet	-	19.9	0.00263	150	0	-	-
Heating Coil Outlet	-	24.2	0.00263	150	0	771	-
Zone Air	-	21.0	0.00262	150	0	-581	-
Zone 4 (Heating)							
Ventilation Air	-	-	-	10	-	-	-
Cooling Coil Inlet	-	19.8	0.00263	150	0	-	-
Cooling Coil Outlet	-	19.8	0.00263	150	0	0	0
Heating Coil Inlet	-	19.8	0.00263	150	0	-	-
Heating Coil Outlet	-	26.3	0.00263	150	0	1178	-
Zone Air	-	20.9	0.00262	150	0	-982	-
Zone 5 (Heating)							
Ventilation Air	-	-	-	17	-	-	-
Cooling Coil Inlet	-	19.0	0.00263	150	0	-	-
Cooling Coil Outlet	-	19.0	0.00263	150	0	0	0
Heating Coil Inlet	-	19.0	0.00263	150	0	-	-
Heating Coil Outlet	-	23.6	0.00263	150	0	825	-

System Psychrometrics for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Zone Air	-	20.8	0.00262	150	0	-498	-
Zone 6 (Heating)							
Ventilation Air	-	-	-	122	-	-	-
Cooling Coil Inlet	-	16.8	0.00262	500	0	-	-
Cooling Coil Outlet	-	16.8	0.00262	500	0	0	0
Heating Coil Inlet	-	16.8	0.00262	500	0	-	-
Heating Coil Outlet	-	25.1	0.00262	500	0	5015	-
Zone Air	-	20.8	0.00262	500	0	-2639	-

Psychrometric Analysis for West Wing System

Project Name: PANORAMA - Rev.03 04/17/2021

Prepared by: MJ 10:52PM

The psychrometric graph cannot be generated for this type of system.