

## Appendix B: Existing ASHRAE Standard 62.1 Calculations

### Naturally Ventilated Space Compliance

| Room  | Space             | ASHRAE 62.1 |                     |           |                       | Design Case  | Meets Standard? | Notes: |
|-------|-------------------|-------------|---------------------|-----------|-----------------------|--------------|-----------------|--------|
|       |                   | Area (SF)   | Natural Ventilation |           | Required Opening (SF) | Opening (SF) |                 |        |
|       |                   |             | Direct              | In-Direct |                       |              |                 |        |
| A 005 | Atrium Entrance   | 2,101       | -                   | -         | 84                    | 0            | No              | 1      |
| A 006 | Electrical Equip. | 470         | X                   |           | 19                    | 1            | No              | 2      |
| A 007 | Telecom Room      | 178         | -                   | -         | 7                     | 0            | No              |        |
| A 008 | Electrical Equip. | 244         | X                   |           | 10                    | 1            | No              | 2      |
| A 009 | Electrical Equip. | 692         | X                   |           | 28                    | 3            | No              | 3      |
| A 010 | Telecom Room      | 327         | -                   | -         | 13                    | 0            | No              |        |
| A 011 | Water Room        | 294         | -                   | -         | 12                    | 0            | No              |        |
| A 012 | Electrical Equip. | 383         | -                   | -         | 15                    | 9            | No              | 3      |

1. Open to the atrium spaces on the above floors
2. Louver is open to the adjacent loading dock
3. Louver is open to the adjacent parking garage

### Assigned Occupancy Categories

| Room Type        | ASHRAE 62.1 2007     |                            |                      |                                      |
|------------------|----------------------|----------------------------|----------------------|--------------------------------------|
|                  | Occupancy Category   | People O.A. (cfm / Person) | Area O.A. (cfm / SF) | Occupancy Density (People / 1000 SF) |
| Stores           | Retail Sales         | 7.5                        | 0.12                 | 15                                   |
| Walkways         | Mall Common Areas    | 7.5                        | 0.06                 | 40                                   |
| Utility          | Electrical Equipment | 0                          | 0.06                 | 0                                    |
| Exit Passageways | Corridors            | 0                          | 0.06                 | 0                                    |
| Janitor Closets  | Storage              | 0                          | 0.12                 | 0                                    |
| Ski Resort       | Gym (Play Area)      | 0                          | 0.3                  | 30                                   |
| Sky Diving Sim.  | Gym (Play Area)      | 0                          | 0.3                  | 30                                   |
| Restaurant       | Restaurant           | 7.5                        | 0.18                 | 70                                   |
| Night Clubs      | Dance Floors         | 20                         | 0.06                 | 100                                  |

## Spaces Served by Roof Top Unit 1

| Room  | Space             | ASHRAE 62.1 |                          |                     | Design Case         |    | Meets Standard? | Notes: |
|-------|-------------------|-------------|--------------------------|---------------------|---------------------|----|-----------------|--------|
|       |                   | Area (SF)   | Occupancy Level (People) | Required O.A. (cfm) | Supplied O.A. (cfm) |    |                 |        |
| A 105 | Central Atrium    | 9,820       | 393                      | 5892                | 651                 | No |                 |        |
| A 106 | Electrical Equip. | 453         | 0                        | 45                  | 0                   | No | 1, 2, 3         |        |
| A 107 | Exit Passageway   | 863         | 0                        | 86                  | 0                   | No | 1               |        |
| A 108 | Telecom Room      | 284         | 0                        | 28                  | 0                   | No | 1               |        |
| A 205 | Central Atrium    | 5,136       | 205                      | 3082                | 753                 | No |                 |        |
| A 206 | Electrical Equip. | 466         | 0                        | 47                  | 0                   | No | 1, 2, 3         |        |
| A 207 | Exit Passageway   | 1,125       | 0                        | 113                 | 0                   | No | 1               |        |
| A 208 | Telecom Room      | 282         | 0                        | 28                  | 0                   | No | 1               |        |

1. There is no direct ventilation to this space
2. Exhaust fan is installed to create negative pressure and draw air from outside the room
3. The space the exhaust air is drawing air from is under-ventilated or not directly ventilated

## Spaces Served by Roof Top Unit 2

| Room  | Space             | ASHRAE 62.1 |                          |                     | Design Case         |    | Meets Standard? | Notes: |
|-------|-------------------|-------------|--------------------------|---------------------|---------------------|----|-----------------|--------|
|       |                   | Area (SF)   | Occupancy Level (People) | Required O.A. (cfm) | Supplied O.A. (cfm) |    |                 |        |
| A 101 | Corridor          | 287         | 11                       | 172                 | 0                   | No | 1               |        |
| A 105 | Central Atrium    | 8,695       | 348                      | 5217                | 744                 | No |                 |        |
| A 109 | Electrical Equip. | 487         | 0                        | 49                  | 0                   | No | 1, 2, 3         |        |
| A 110 | Electrical Equip. | 292         | 0                        | 29                  | 0                   | No | 1               |        |
| A 111 | Corridor          | 1,389       | 0                        | 139                 | 0                   | No | 1               |        |
| A 112 | Storage           | 75          | 0                        | 15                  | 0                   | No | 1, 2, 3         |        |
| A 116 | Storage           | 438         | 0                        | 88                  | 0                   | No | 1               |        |
| A 201 | Corridor          | 298         | 12                       | 179                 | 0                   | No |                 |        |
| A 205 | Central Atrium    | 9,128       | 365                      | 5477                | 753                 | No |                 |        |
| A 209 | Electrical Equip. | 422         | 0                        | 42                  | 0                   | No | 1, 2, 3         |        |
| A 210 | Electrical        | 236         | 0                        | 24                  | 0                   | No | 1               |        |

|       | Equip.       |       |   |     |   |    |         |
|-------|--------------|-------|---|-----|---|----|---------|
| A 211 | Corridor     | 1,187 | 0 | 119 | 0 | No | 1       |
| A 212 | Storage Room | 75    | 0 | 15  | 0 | No | 1, 2, 3 |

1. There is no direct ventilation to this space
2. Exhaust fan is installed to create negative pressure and draw air from outside the room
3. The space the exhaust air is drawing air from is under-ventilated o not directly ventilated

### Spaces Served by Roof Top Unit 3

| Room  | Space             | ASHRAE 62.1 |                          |                     | Design Case         |     | Meets Standard? | Notes: |
|-------|-------------------|-------------|--------------------------|---------------------|---------------------|-----|-----------------|--------|
|       |                   | Area (SF)   | Occupancy Level (People) | Required O.A. (cfm) | Supplied O.A. (cfm) |     |                 |        |
| A 302 | Corridor          | 3,398       | 0                        | 204                 | 0                   | No  | 1               |        |
| A 305 | Central Atrium    | 3,535       | 141                      | 1,273               | 3,039               | Yes |                 |        |
| A 309 | Electrical Equip. | 412         | 0                        | 25                  | 0                   | No  | 1, 2, 3         |        |
| A 310 | Electrical Equip. | 237         | 0                        | 14                  | 0                   | No  | 1               |        |

1. There is no direct ventilation to this space
2. Exhaust fan is installed to create negative pressure and draw air from outside the room
3. The space the exhaust air is drawing air from is under-ventilated o not directly ventilated

### Spaces Served by Roof Top Unit 4

| Room  | Space             | ASHRAE 62.1 |                          |                     | Design Case         |     | Meets Standard? | Notes: |
|-------|-------------------|-------------|--------------------------|---------------------|---------------------|-----|-----------------|--------|
|       |                   | Area (SF)   | Occupancy Level (People) | Required O.A. (cfm) | Supplied O.A. (cfm) |     |                 |        |
| A 305 | Central Atrium    | 6,542       | 262                      | 2,355               | 3,038               | Yes |                 |        |
| A 306 | Electrical Equip. | 338         | 0                        | 20                  | 0                   | No  | 1, 2, 3         |        |
| A 307 | Exit Passageway   | 1,210       | 0                        | 73                  | 0                   | No  | 1               |        |
| A 308 | Electrical Equip. | 284         | 0                        | 17                  | 0                   | No  | 1               |        |

1. There is no direct ventilation to this space
2. Exhaust fan is installed to create negative pressure and draw air from outside the room
3. The space the exhaust air is drawing air from is under-ventilated o not directly ventilated

### Snowdome AHU

| Room | Space | ASHRAE 62.1 |                          |                     | Design Case         |  | Meets Standard? | Notes: |
|------|-------|-------------|--------------------------|---------------------|---------------------|--|-----------------|--------|
|      |       | Area (SF)   | Occupancy Level (People) | Required O.A. (cfm) | Supplied O.A. (cfm) |  |                 |        |

|          |          |         |     |        |        |    |      |
|----------|----------|---------|-----|--------|--------|----|------|
| Snowdome | Snowdome | 160,000 | 999 | 48,000 | 15,000 | No | 1, 2 |
|----------|----------|---------|-----|--------|--------|----|------|

1. Peak load will occur during special events housed within the Snowdome
2. Occupany level is known for special events, no assumptions where made

### Exhaust Rate Compliance

| Room  | Space           | ASHRAE 62.1 |              |            |    | Units | Required Exhaust (cfm) | Design Case Exhaust (cfm) | Meets Standard? |
|-------|-----------------|-------------|--------------|------------|----|-------|------------------------|---------------------------|-----------------|
|       |                 | Area (SF)   | Exhaust Rate |            |    |       |                        |                           |                 |
|       |                 |             | (cfm/SF)     | (cfm/unit) |    |       |                        |                           |                 |
| A 112 | Janitors Closet | 75          | 1            | -          |    | 75    | 100                    | Yes                       |                 |
| A 113 | Womens Room     | 488         | -            | 70         | 11 | 770   | 800                    | Yes                       |                 |
| A 114 | Mens Room       | 483         | -            | 70         | 8  | 560   | 950                    | Yes                       |                 |
| A 212 | Janitors Closet | 75          | 1            | -          |    | 75    | 100                    | Yes                       |                 |
| A 213 | Womens Room     | 475         | -            | 70         | 11 | 770   | 800                    | Yes                       |                 |
| A214  | Mens Room       | 498         | -            | 70         | 8  | 560   | 950                    | Yes                       |                 |