

AYOTUNDE OGUNMOYERO

ARCH 633

MEYERSON NATURAL VENTILATION

10/26/2017

#### DESIGN INTERVENTIONS

1. CENTRAL ATRIUM
2. VENTILATION SHAFT

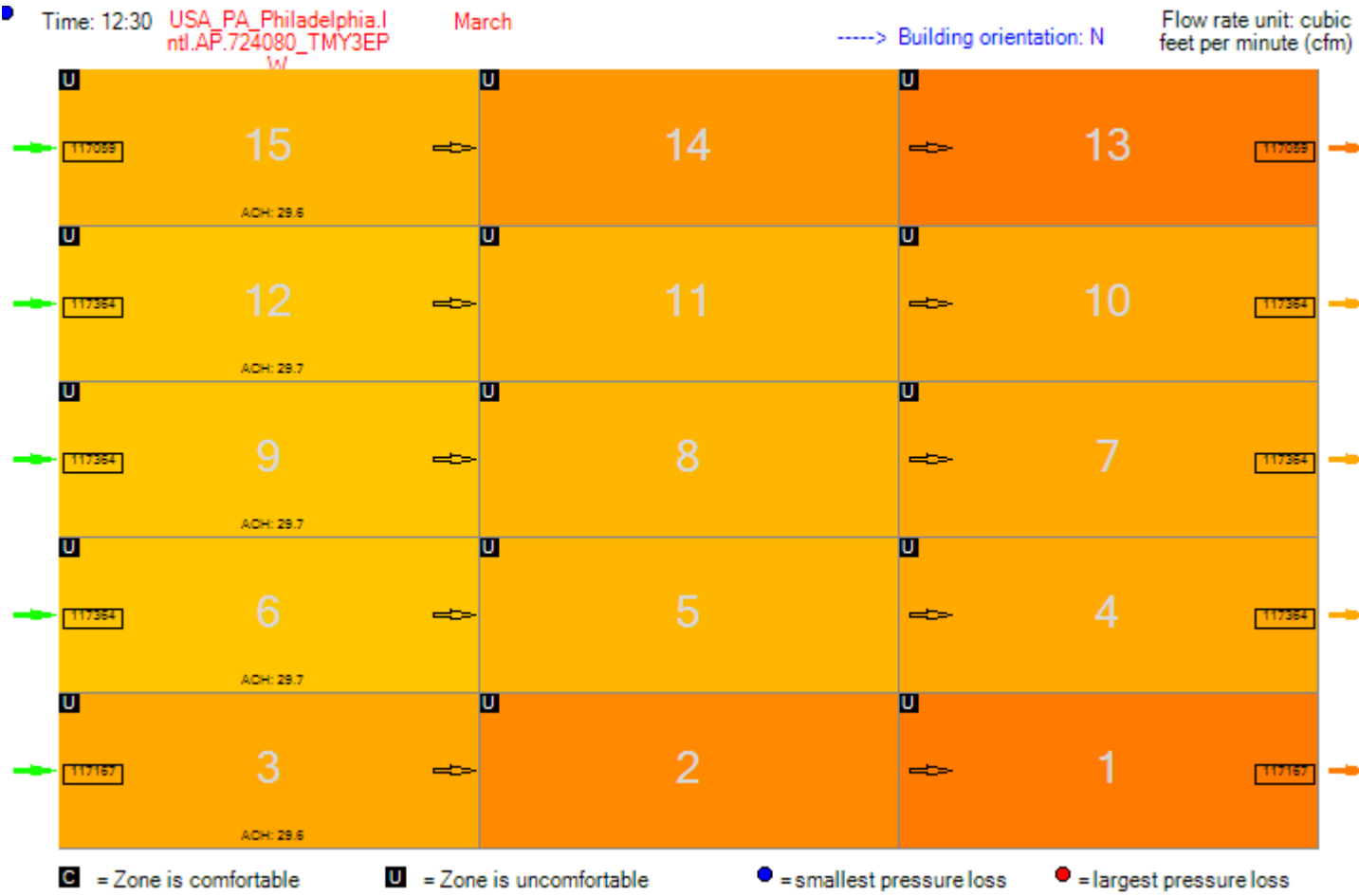
COMPARED CONDITIONS (Summer and Winter Solstice and Equinox)

1. BASE MEYERSON VENTILATION WITH LITTLE OPERABLE WINDOWS
2. CENTRAL ATRIUM WITH A FEW OPERABLE WINDOWS
3. VENTILATION SHAFT WITH ALL OPERABLE WINDOWS

#### OBSERVATIONS:

The Ventilation shaft and operable windows operation was the most successful. Adding a central atrium was only a slight improvement from the base meyersen design.

Meyerson Base ventilation  
(Without design intervention)  
March 12:30pm



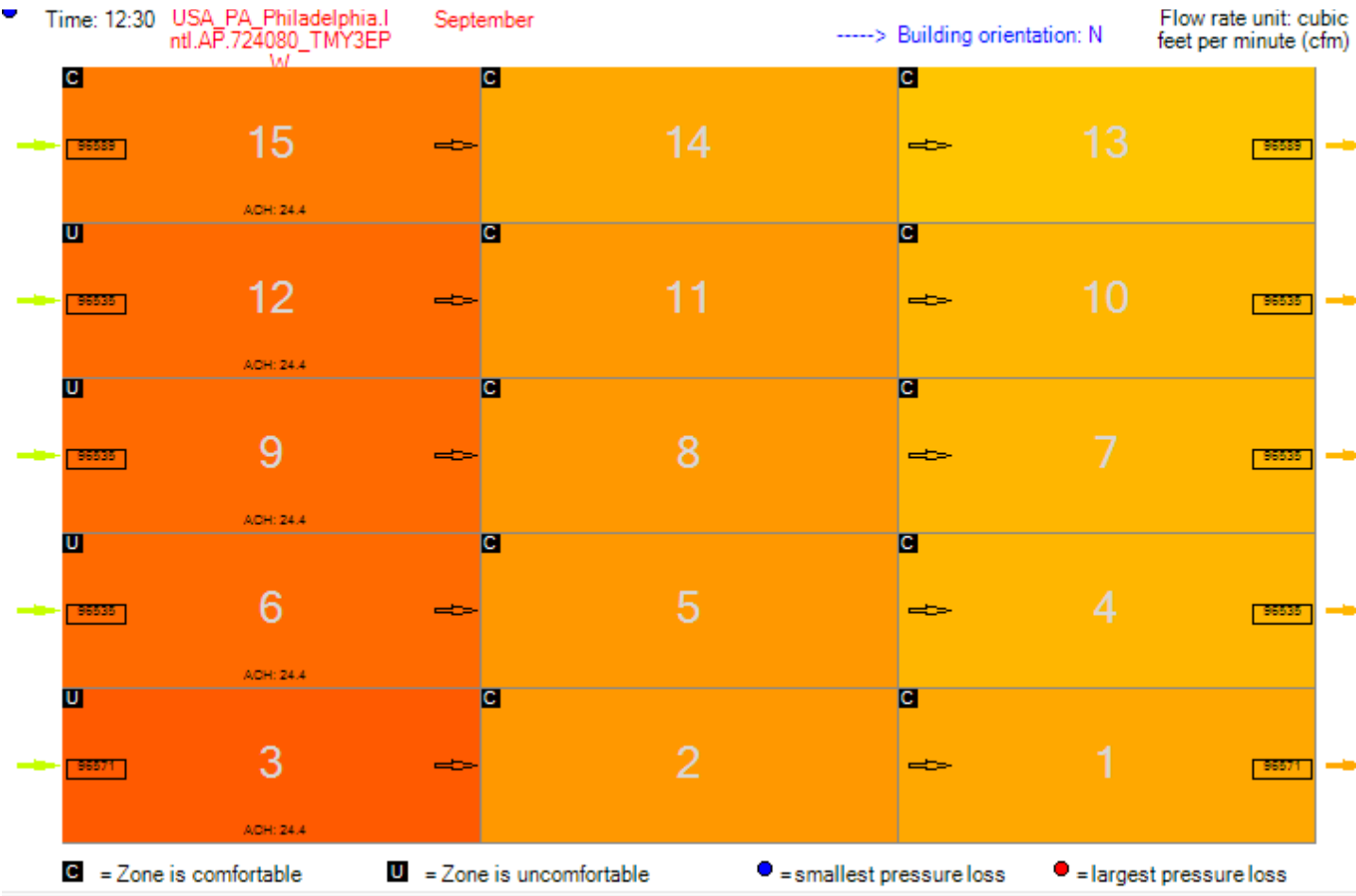
<div><div></div><div>15</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>	<div><div></div><div>14</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>	<div><div></div><div>13</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>
<div><div></div><div>12</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>	<div><div></div><div>11</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>	<div><div></div><div>10</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>
<div><div></div><div>9</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>	<div><div></div><div>8</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>	<div><div></div><div>7</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>
<div><div></div><div>6</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>	<div><div></div><div>5</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>	<div><div></div><div>4</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>
<div><div></div><div>3</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>	<div><div></div><div>2</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>	<div><div></div><div>1</div><div>0% hot 100% cold 0% comfort of total number of occupied hour</div></div>

Meyerson Base ventilation  
(Without design intervention)  
June 12:30pm



<div><div></div><div>15</div><div>15.6% hot 0% cold 84.4% comfort of total number of occupied hour</div></div>	<div><div></div><div>14</div><div>18.8% hot 0% cold 81.2% comfort of total number of occupied hour</div></div>	<div><div></div><div>13</div><div>39.1% hot 0% cold 60.9% comfort of total number of occupied hour</div></div>
<div><div></div><div>12</div><div>20.3% hot 0% cold 79.7% comfort of total number of occupied hour</div></div>	<div><div></div><div>11</div><div>23.4% hot 0% cold 76.6% comfort of total number of occupied hour</div></div>	<div><div></div><div>10</div><div>43.8% hot 0% cold 56.2% comfort of total number of occupied hour</div></div>
<div><div></div><div>9</div><div>20.3% hot 0% cold 79.7% comfort of total number of occupied hour</div></div>	<div><div></div><div>8</div><div>23.4% hot 0% cold 76.6% comfort of total number of occupied hour</div></div>	<div><div></div><div>7</div><div>43.8% hot 0% cold 56.2% comfort of total number of occupied hour</div></div>
<div><div></div><div>6</div><div>20.3% hot 0% cold 79.7% comfort of total number of occupied hour</div></div>	<div><div></div><div>5</div><div>23.4% hot 0% cold 76.6% comfort of total number of occupied hour</div></div>	<div><div></div><div>4</div><div>43.8% hot 0% cold 56.2% comfort of total number of occupied hour</div></div>
<div><div></div><div>3</div><div>21.9% hot 0% cold 78.1% comfort of total number of occupied hour</div></div>	<div><div></div><div>2</div><div>25% hot 0% cold 75% comfort of total number of occupied hour</div></div>	<div><div></div><div>1</div><div>45.3% hot 0% cold 54.7% comfort of total number of occupied hour</div></div>

Meyerson Base ventilation  
(Without design intervention)  
September 12:30pm



	15	12.5% hot 0% cold 87.5% comfort number of occupied hours		14	0% hot 0% cold 100% comfort number of occupied hours		13	0% hot 0% cold 100% comfort number of occupied hours
	12	18.8% hot 0% cold 81.2% comfort number of occupied hours		11	4.7% hot 0% cold 95.3% comfort number of occupied hours		10	1.6% hot 0% cold 98.4% comfort number of occupied hours
	9	18.8% hot 0% cold 81.2% comfort number of occupied hours		8	4.7% hot 0% cold 95.3% comfort number of occupied hours		7	1.6% hot 0% cold 98.4% comfort number of occupied hours
	6	18.8% hot 0% cold 81.2% comfort number of occupied hours		5	4.7% hot 0% cold 95.3% comfort number of occupied hours		4	1.6% hot 0% cold 98.4% comfort number of occupied hours
	3	20.3% hot 0% cold 79.7% comfort number of occupied hours		2	6.2% hot 0% cold 93.8% comfort number of occupied hours		1	4.7% hot 0% cold 95.3% comfort number of occupied hours

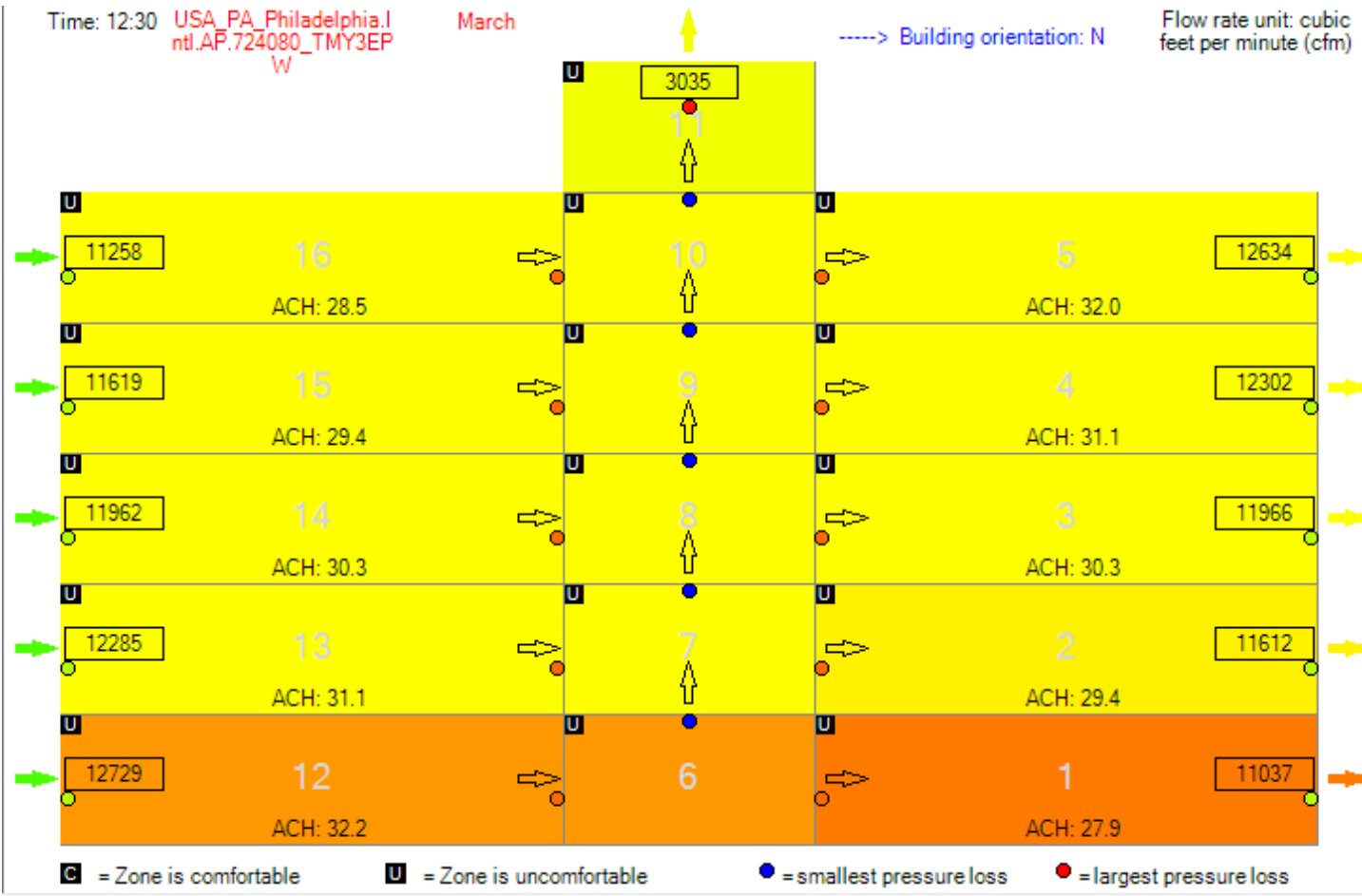
Meyerson Base ventilation  
(Without design intervention)  
December 12:30pm



	15	0% hot 100% cold 0% comfort number of occupied hours		14	0% hot 100% cold 0% comfort number of occupied hours		13	0% hot 100% cold 0% comfort number of occupied hours
	12	0% hot 100% cold 0% comfort number of occupied hours		11	0% hot 100% cold 0% comfort number of occupied hours		10	0% hot 100% cold 0% comfort number of occupied hours
	9	0% hot 100% cold 0% comfort number of occupied hours		8	0% hot 100% cold 0% comfort number of occupied hours		7	0% hot 100% cold 0% comfort number of occupied hours
	6	0% hot 100% cold 0% comfort number of occupied hours		5	0% hot 100% cold 0% comfort number of occupied hours		4	0% hot 100% cold 0% comfort number of occupied hours
	3	0% hot 100% cold 0% comfort number of occupied hours		2	0% hot 100% cold 0% comfort number of occupied hours		1	0% hot 100% cold 0% comfort number of occupied hours

Meyerson Central Atrium

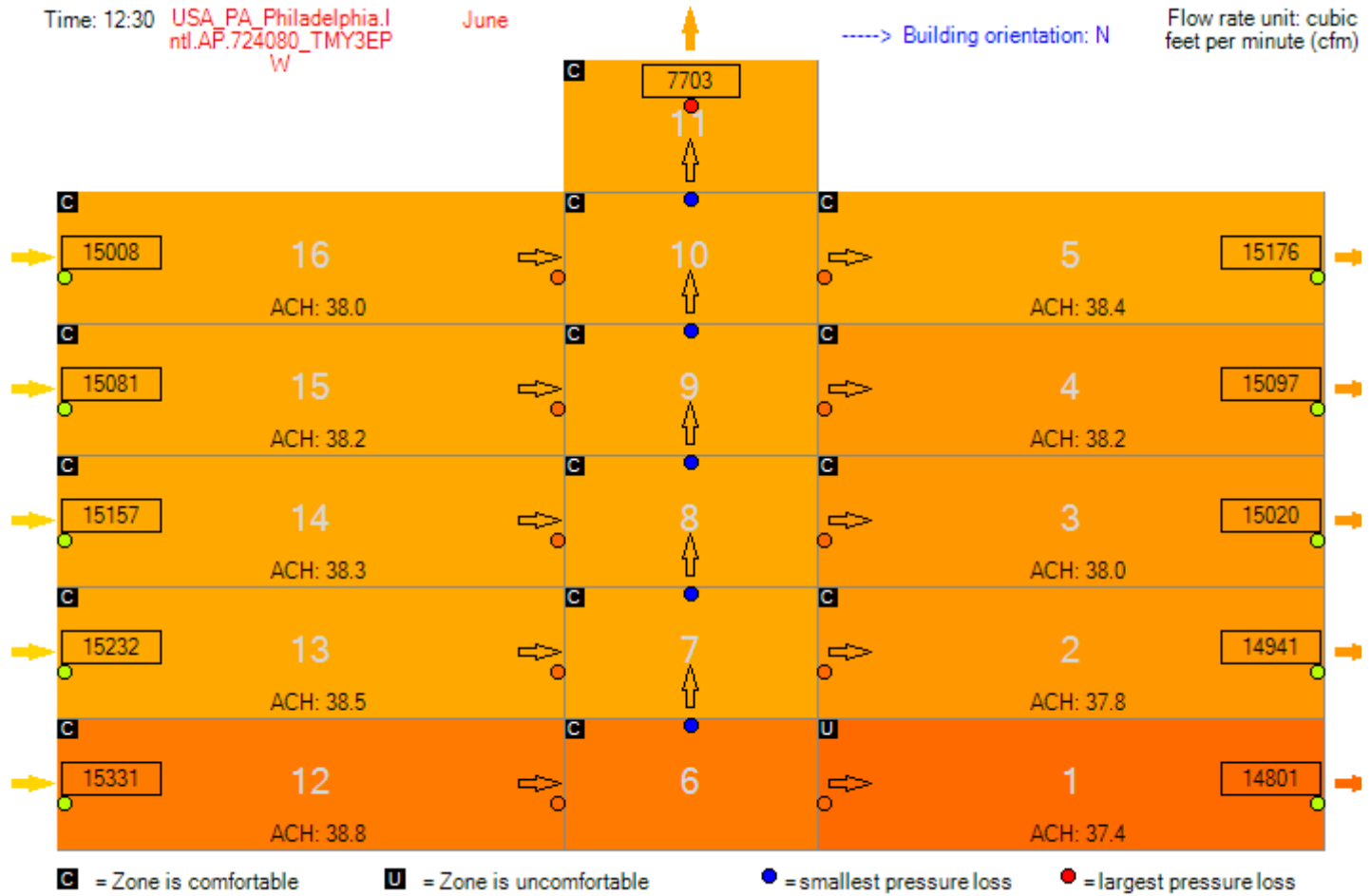
March 12:30pm



	11	
<div><div></div><div>16</div><div>0% hot 100% cold 0% comfort of total number of occupied hours</div></div>	10	<div><div></div><div>5</div><div>0% hot 100% cold 0% comfort of total number of occupied hours</div></div>
<div><div></div><div>15</div><div>0% hot 100% cold 0% comfort of total number of occupied hours</div></div>	9	<div><div></div><div>4</div><div>0% hot 100% cold 0% comfort of total number of occupied hours</div></div>
<div><div></div><div>14</div><div>0% hot 100% cold 0% comfort of total number of occupied hours</div></div>	8	<div><div></div><div>3</div><div>0% hot 100% cold 0% comfort of total number of occupied hours</div></div>
<div><div></div><div>13</div><div>0% hot 100% cold 0% comfort of total number of occupied hours</div></div>	7	<div><div></div><div>2</div><div>0% hot 100% cold 0% comfort of total number of occupied hours</div></div>
<div><div></div><div>12</div><div>0% hot 100% cold 0% comfort of total number of occupied hours</div></div>	6	<div><div></div><div>1</div><div>0% hot 100% cold 0% comfort of total number of occupied hours</div></div>

Meyerson Central Atrium

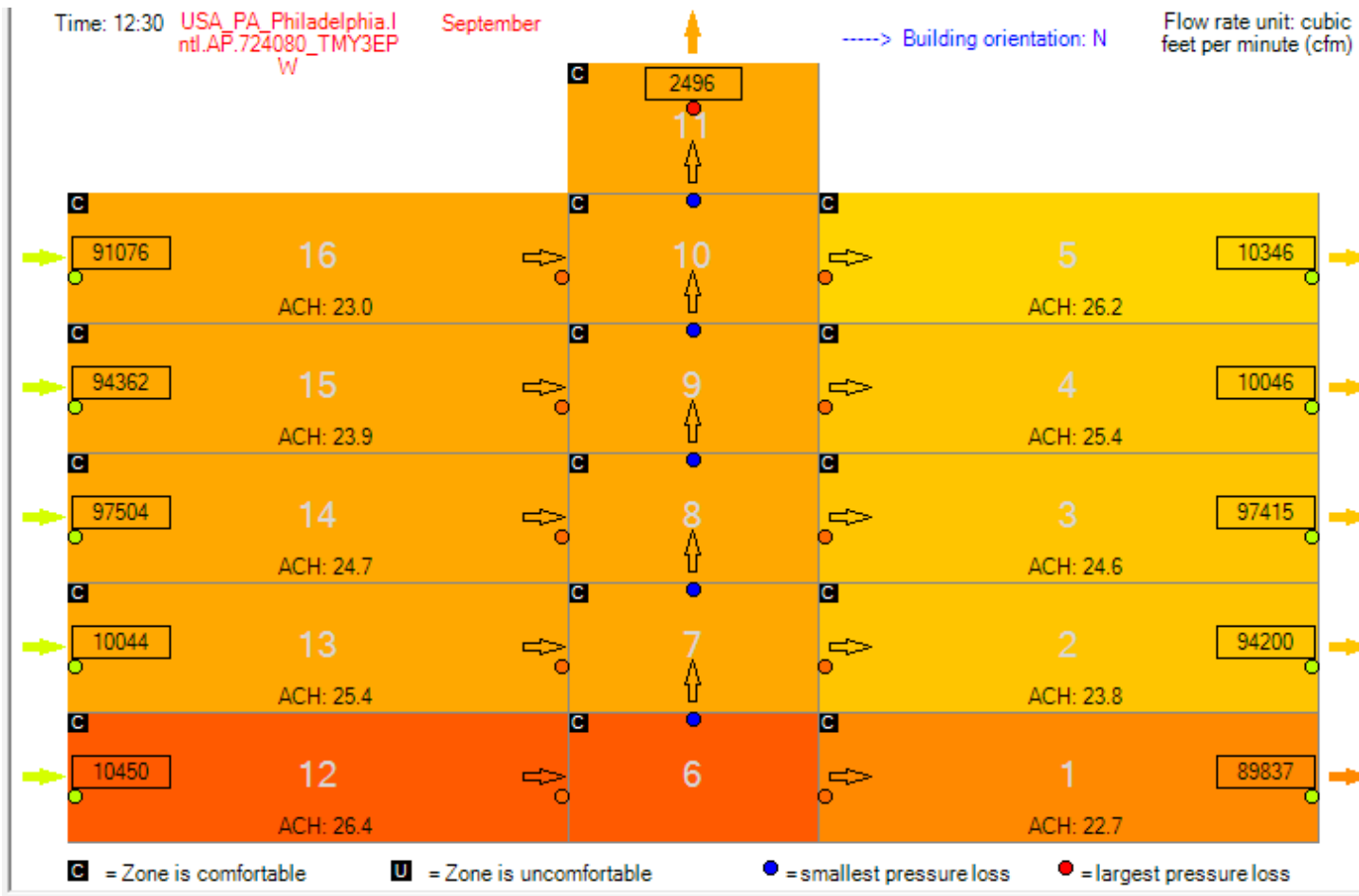
June 12:30pm



	11	
<div><div></div><div>16</div><div>9.4% hot 0% cold 90.6% comfort of total number of occupied hours</div></div>	10	<div><div></div><div>5</div><div>12.5% hot 0% cold 87.5% comfort of total number of occupied hours</div></div>
<div><div></div><div>15</div><div>10.9% hot 0% cold 89.1% comfort of total number of occupied hours</div></div>	9	<div><div></div><div>4</div><div>12.5% hot 0% cold 87.5% comfort of total number of occupied hours</div></div>
<div><div></div><div>14</div><div>9.4% hot 0% cold 90.6% comfort of total number of occupied hours</div></div>	8	<div><div></div><div>3</div><div>12.5% hot 0% cold 87.5% comfort of total number of occupied hours</div></div>
<div><div></div><div>13</div><div>9.4% hot 0% cold 90.6% comfort of total number of occupied hours</div></div>	7	<div><div></div><div>2</div><div>14.1% hot 0% cold 85.9% comfort of total number of occupied hours</div></div>
<div><div></div><div>12</div><div>15.6% hot 0% cold 84.4% comfort of total number of occupied hours</div></div>	6	<div><div></div><div>1</div><div>29.7% hot 0% cold 70.3% comfort of total number of occupied hours</div></div>

Meyerson Central Atrium

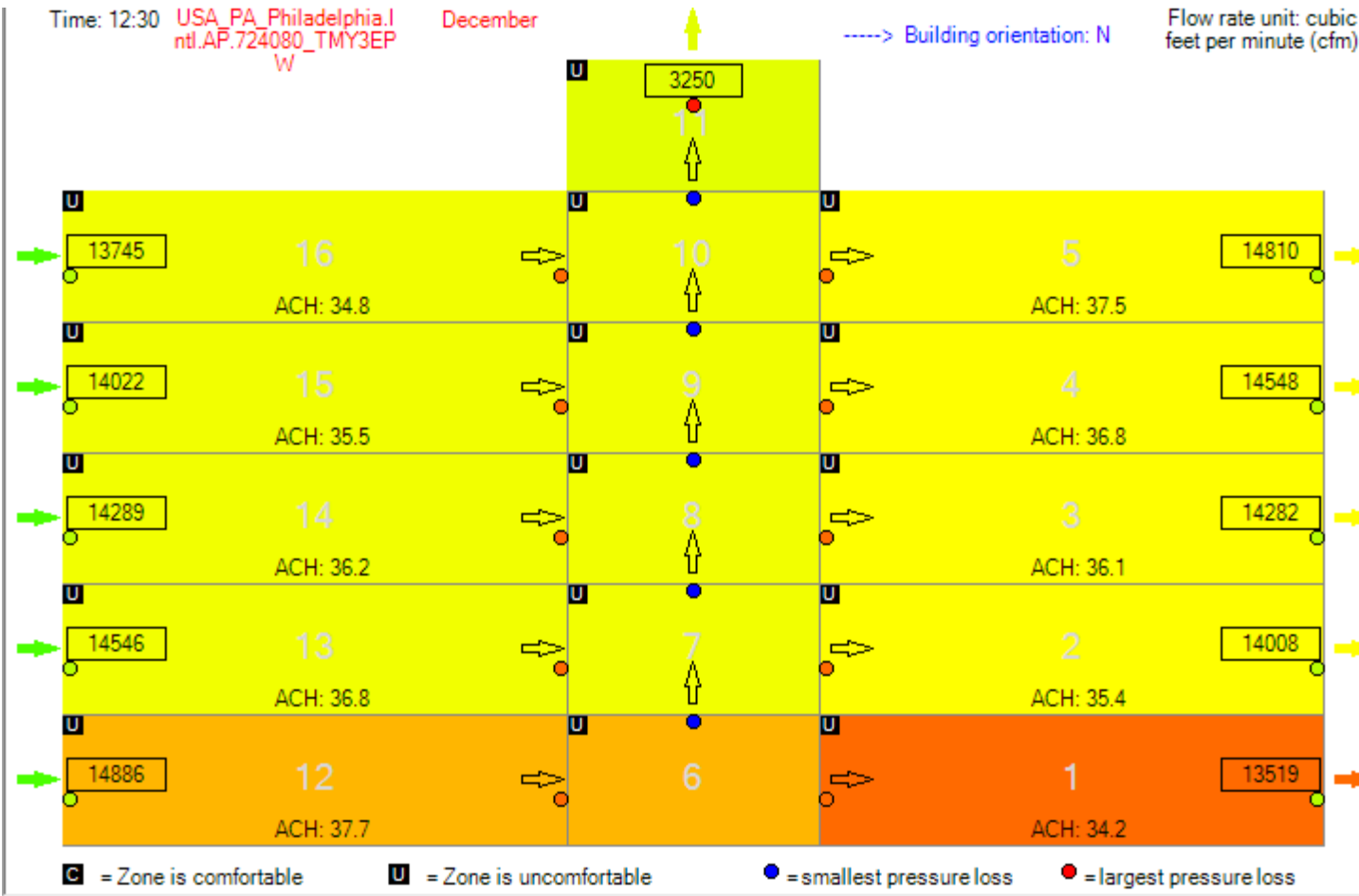
September 12:30pm



		11		
	16	10		5
	15	9		4
	14	8		3
	13	7		2
	12	6		1

Meyerson Central Atrium

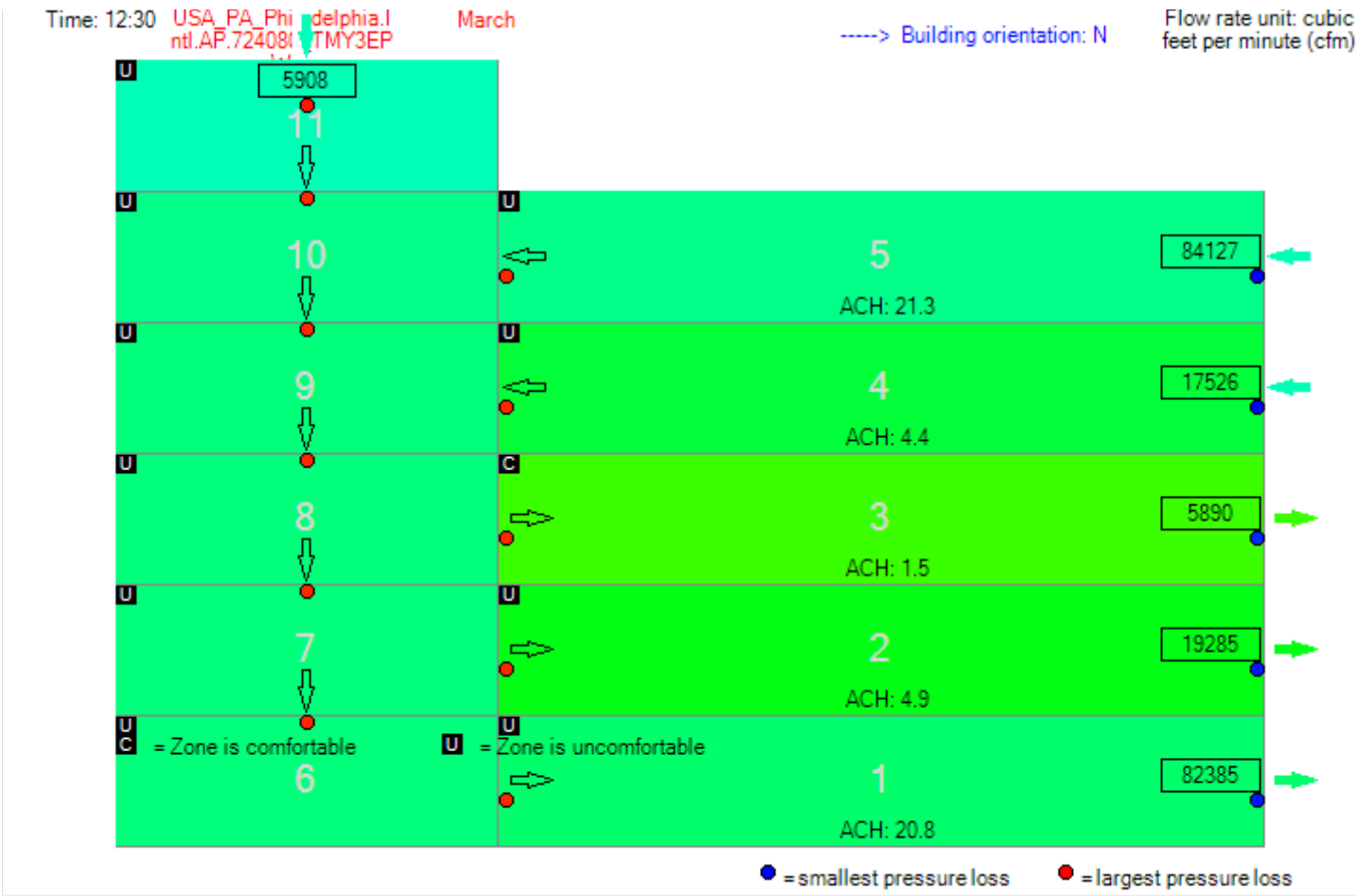
December 12:30pm



		11		
	16	10		5
	15	9		4
	14	8		3
	13	7		2
	12	6		1

Meyerson Ventilation Shaft

March 12:30pm



Meyerson Ventilation Shaft

June 12:30pm



11			
10		5	0% hot 100% cold 0% comfort of total number of occupied hours
9		4	0% hot 89.1% cold 10.9% comfort of total number of occupied hours
8		3	0% hot 0% cold 100% comfort of total number of occupied hours
7		2	0% hot 73.4% cold 26.6% comfort of total number of occupied hours
6		1	0% hot 100% cold 0% comfort of total number of occupied hours

11			
10		5	34.4% hot 0% cold 65.6% comfort of total number of occupied hours
9		4	100% hot 0% cold 0% comfort of total number of occupied hours
8		3	100% hot 0% cold 0% comfort of total number of occupied hours
7		2	100% hot 0% cold 0% comfort of total number of occupied hours
6		1	87.5% hot 0% cold 12.5% comfort of total number of occupied hours

Meyerson Ventilation Shaft

September 12:30pm



Meyerson Ventilation Shaft

December 12:30pm



11			
10		5	0% hot 0% cold 100% comfort of total number of occupied hours
9		4	100% hot 0% cold 0% comfort of total number of occupied hours
8		3	100% hot 0% cold 0% comfort of total number of occupied hours
7		2	89.1% hot 0% cold 10.9% comfort of total number of occupied hours
6		1	29.7% hot 0% cold 70.3% comfort of total number of occupied hours

11			
10		5	0% hot 100% cold 0% comfort of total number of occupied hours
9		4	0% hot 100% cold 0% comfort of total number of occupied hours
8		3	0% hot 82.8% cold 17.2% comfort of total number of occupied hours
7		2	0% hot 100% cold 0% comfort of total number of occupied hours
6		1	0% hot 100% cold 0% comfort of total number of occupied hours