



M2M Systems Integrators
3629 Normandy Drive
Dallas, Texas 75205

**Blue Lake Elementary
Verification and Commissioning
Deficiency Report #1**

6/25/2008

M2M Systems Integrators has performed an initial inspection of the control and function of the dual duct VAV boxes and has provided the following report.

1. A number of VAV box calibration factors remain at factory default settings. This does not necessarily mean that the boxes in question have not been calibrated. However, the quantity of default settings suggests that these boxes should be reviewed to ensure proper calibration. The boxes in question are listed in the attached report under the section labeled VAV Box K-Factors at Factory Default.
2. A number of VAV boxes are not maintaining minimum and maximum airflow setpoints. The boxes in question are listed in the attached report under the section labeled Cold Deck and Hot Deck Airflow Values Outside of Minimum and Maximum Setpoints.
3. A review of space temperatures and setpoints indicates that space temperature setpoints range from 65 deg. to 80.5 deg.. A fixed setpoint or a narrow setpoint range would provide better energy efficiency and more consistent temperatures throughout the building. It was also noted that several rooms are not maintaining setpoint. The rooms in question are listed in the attached report under the section labeled Room Temperatures +/- 2 Degrees from Setpoint.
4. A review of discharge air temperatures with heating signals at 100% revealed three rooms with discharge air temperatures less than 56 deg.. This indicates that the boxes are not controlling properly. The boxes in question are listed in the attached report under the section labeled Low Discharge Air Temp with Heating Signal at 100%.
5. A review of discharge air temperatures with cooling signals at 100% revealed two rooms with discharge air temperatures greater than 65 deg.. This indicates that the boxes are not controlling properly. The boxes in question are listed in the attached report under the section labeled High Discharge Air Temp with Cooling Signal at 100%.

All items contained in the following report must be signed off by the responsible parties and returned to M2M Systems Integrators.

James Moore
M2M Systems Integrators
3629 Normandy Drive
Dallas, Texas 75205

Site: Blue Lake Elementary

Customer: M2M Systems Integrators

VAV Box K-Factors at Factory Default

Blue Lake ES Rm 102					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	02:01:23 PM	12	1.19	10	0.9999998
Blue Lake ES Mail					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	01:58:41 PM	8	0.8799999	4	0.9999998
Blue Lake ES Office 4					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	02:00:16 PM	8	0.9999998	4	0.9999998
Blue Lake ES Corridor					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	01:57:24 PM	8	0.9999998	8	0.9999998
Blue Lake ES C105					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	01:56:16 PM	10	0.9999998	8	0.8599999
Blue Lake ES Rm 142					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	02:08:25 PM	8	0.7499998	4	0.9999998
Blue Lake ES Commons					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	01:56:46 PM	8	1.06	8	0.9999998
Blue Lake ES Rm 129					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	02:05:56 PM	8	0.7199998	8	0.9999998
Blue Lake ES RM 132					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	02:06:56 PM	10	0.9199998	8	0.9999998
Blue Lake ES RM 122					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	02:03:52 PM	8	0.8999999	8	0.9999998
Blue Lake ES Rm 120					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	02:03:12 PM	8	0.9999998	8	0.8399999
Blue Lake ES Faculty Center					
Date	Time	Box Size CD	Calibration Factor CD	Box Size HD	Calibration Factor HD
06/24/2008	01:57:38 PM	10	0.9499998	8	0.9999998

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Cold Deck and Hot Deck Airflow Values Outside of Minimum and Maximum Setpoints

Blue Lake ES Office 3									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Max Airflow - Cold	Min Airflow-Cold	Airflow sensor 1 (Hot)	Max Airflow - Hot
06/24/2008	01:55:48 PM	71.4	72	65.4	144	600	150	313	200
Blue Lake ES Rm 127									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Max Airflow - Cold	Min Airflow-Cold	Airflow sensor 1 (Hot)	Max Airflow - Hot
06/24/2008	02:05:18 PM	72.6	65	65.4	1065	1100	400	940	400
Blue Lake ES RM 122									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Max Airflow - Cold	Min Airflow-Cold	Airflow sensor 1 (Hot)	Max Airflow - Hot
06/24/2008	02:03:52 PM	70.9	72	64.7	382	800	400	766	400
Blue Lake ES RM 207									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Max Airflow - Cold	Min Airflow-Cold	Airflow sensor 1 (Hot)	Max Airflow - Hot
06/24/2008	02:10:51 PM	72.5	80.5	71.9	0	1000	400	541	400

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Room Temperatures +/- 2 degrees from Setpoint

Blue Lake ES Computer Lab									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)	Max Airflow - Cold	Min Airflow-Cold	Max Airflow - Hot
06/24/2008	01:56:58 PM	71.9	65	52.1	790	0	800	400	400
Blue Lake ES Office 2									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)	Max Airflow - Cold	Min Airflow-Cold	Max Airflow - Hot
06/24/2008	02:00:04 PM	68.2	65	52.6	391	4	400	100	200
Blue Lake ES Rm 146									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)	Max Airflow - Cold	Min Airflow-Cold	Max Airflow - Hot
06/24/2008	02:08:38 PM	69.6	72	55.9	6	100	250	75	100
Blue Lake ES Vestibule									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)	Max Airflow - Cold	Min Airflow-Cold	Max Airflow - Hot
06/24/2008	02:18:23 PM	69.4	72	51.6	0	395	800	200	400
Blue Lake ES Rm 125									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)	Max Airflow - Cold	Min Airflow-Cold	Max Airflow - Hot
06/24/2008	02:04:45 PM	67.8	65	51.7	803	0	800	400	400
Blue Lake ES Rm 127									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)	Max Airflow - Cold	Min Airflow-Cold	Max Airflow - Hot
06/24/2008	02:05:18 PM	72.6	65	65.4	1065	940	1100	400	400
Blue Lake ES Rm 120									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)	Max Airflow - Cold	Min Airflow-Cold	Max Airflow - Hot
06/24/2008	02:03:12 PM	68.8	65	51.8	767	14	800	400	400
Blue Lake ES Vestibule									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)	Max Airflow - Cold	Min Airflow-Cold	Max Airflow - Hot
06/24/2008	02:18:05 PM	72.1	80.5	52.5	22	396	800	200	400
Blue Lake ES RM 207									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)	Max Airflow - Cold	Min Airflow-Cold	Max Airflow - Hot
06/24/2008	02:10:51 PM	72.5	80.5	71.9	0	541	1000	400	400
Blue Lake ES RM 211									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)	Max Airflow - Cold	Min Airflow-Cold	Max Airflow - Hot
06/24/2008	02:12:06 PM	68.8	65	52.6	995	129	1000	400	400
Blue Lake ES Rm 224									
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)	Max Airflow - Cold	Min Airflow-Cold	Max Airflow - Hot
06/24/2008	02:16:00 PM	69.5	67	51.9	887	0	900	135	900

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Low Discharge Air Temp with Heating Signal at 100%

Blue Lake ES Rm 146								
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Heating Signal	Cooling Signal	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)
06/24/2008	02:08:38 PM	69.6	72	55.9	100	0	6	100
Blue Lake ES Vestibule 101								
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Heating Signal	Cooling Signal	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)
06/24/2008	02:18:23 PM	69.4	72	51.6	100	0	0	395
Blue Lake ES Vestibule 201								
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Heating Signal	Cooling Signal	Airflow sensor 2 (Cold)	Airflow sensor 1 (Hot)
06/24/2008	02:18:05 PM	72.1	80.5	52.5	100	0	22	396



developed by M2M System Integrators

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High Discharge Air Temp with Cooling Signal at 100%

Blue Lake ES Rm 127						
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Cooling Signal	Heating Signal
06/24/2008	02:05:18 PM	72.6	65	65.4	100	0
Blue Lake ES Stairs						
Date	Time	Room temp	Setpoint (SP)	Discharge air temp	Cooling Signal	Heating Signal
06/24/2008	02:17:45 PM	73.4	72	72.7	100	0