



375 230th Ave, Somerset WI 54025 - Phone: (612) 834-0311 Fax: (414) 377-3349
www.Premierbalancing.com



Testing, Adjusting & Balancing Report

PROJECT

Cook County Family YMCA
105 West 5th Street
Grand Marais MN 56604

CLIENT

Shannon's Inc.
1919 Main Avenue
International Falls, MN 56649-3331

ENGINEER

The Design Group Inc.
1711 East 13th Street
Suite 201
Hibbing, MN 55746

Report Date

February 25, 2014

TABB certification of a Supervisor is TABB's statement that the Supervisor is able to supervise testing, adjusting and balancing of building environmental systems to produce the design objectives or optimum system performance. For TABB Certification purposes, a Supervisor is the person who, while employed by a TABB Certified Contractor, is responsible and accountable for overseeing, coordinating and ensuring that projects are performed by TABB Certified Technicians in accordance with TABB standards (including the ICB Code of Conduct and the TAB General Rules).

Measurements recorded in this report are in accordance with the SMACNA / TABB HVAC Systems, Testing, Adjusting and Balancing manual.



BACKGROUND

TABB seeks to ensure the integrity of its certification program by: (a) setting eligibility criteria for TABB Certified Supervisors and TABB Certified Contractors, (b) establishing testing procedures for TABB Certified Supervisors, (c) requiring continuing education and continuous compliance with eligibility criteria for renewal of certification, and (d) periodically reviewing its recognition of technician certification. High quality work on the part of TABB Certified Technicians and TABB Certified Supervisors and TABB Certified Contractors (TABB Professionals) is essential to integrity of the TABB Certification Program. TABB offers this TABB Quality Assurance Program to help assure high quality work. By accepting TABB qualification or certification, every TABB Professional accepts the responsibilities of this Program.

Quality Assurance

Every customer of a TABB Certified Contractor shall be entitled to expect: (1) that testing, adjusting and balancing work by the contractor and its TABB Professionals will meet TABB standards; (2) that testing, adjusting and balancing reports provided to the customer will have been prepared by a TABB Certified Technician, and reviewed by a TABB Certified Supervisor; and (3) that the report(s) will include measurements taken accurately with the date and mode of operation of the systems.

TABB
8403 Arlington Boulevard
Fairfax, VA 22031
Phone - (703) 299-5646
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**INSTRUMENT
CALIBRATION REPORT**

INSTRUMENT	MODEL	MANUFACTURER	SERIAL NUMBER	CALIBRATION DATE
Rotating Measuring Instrument	PLT-5000	Mitchell Instruments	B12A8503P	02/15/13
Temperature Measuring Instrument	ADM-870C	Shortridge	M13238	05/09/13
Electrical Measuring Instruments	117	Fluke	18561871	01/11/13
	322	Fluke	17830473	01/11/13
Air Pressure Measuring Instrument	ADM-870C	Shortridge	M13238	05/09/13
Air Velocity Measuring Instrument	ADM-870C	Shortridge	M13238	05/09/13
Hydronic Pressure Measuring Instrument 0 to 300 psi	HM-670	Alnor	71133088	02/12/13
Humidity Measuring Instrument	MITCT917	Mitchell Instruments	100610809	01/10/13

Premier Test & Balance

Air Handling Unit Test Data

Project: Cook County Family YMCA
 System: Lobby-Office Unit (Supply)
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 2/25/14

System Scheduled Data

Model number: J15ZJC00Q4	Serial number: NIG3955930
Manufacturer: Johnson Controls	Outlet Total CFM: 5,970
Total Design CFM: 6,000	Outside Air CFM: 2,200
Fan Static Pressure: 1.00	Equipment Location: Roof

Performance Data

Description	Scheduled / Submittal Data	Actual Field Measurements		
Motor HP:	5.00	5.00		
Motor RPM:	1725	1725		
Motor Hertz:	60	60		
Motor Service Factor:	1.15	1.15		
Motor Phase:	3	3		
Motor Voltage:	460	460	460	460
Motor Amperage:	7.2	6.8	6.8	6.8
Motor BHP:	4.48	4.72		
Fan RPM:	1049	1047		

Static Pressure Data

Component	Static Pressure		Pressure Rise / Drop	Pressure Total
	In	Out		
Fan:	-0.14	1.03	Rise	1.17

Airflow Measurements

Outside Air					
	Design Outside Air %	Return Air Temperature	Outside Air Temperature	Mixed Air Temperature	Measured Actual %
	36.6%	59.8	-6.0	37.0	34.7%
Total			2200 Des		2082 Act

- Remarks:
- a) OA damper set 16%
 - b)
 - c)
 - d)
 - e)

Premier Test & Balance

VAV Test Report

Project: Cook County Family YMCA
 System: Lobby-Office Unit
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

VAV Number: 2 Primary Airflow Measurements

Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	141	Flow Hood	1.00	240	240	221	221	92%	189	179
2	141	Flow Hood	1.00	240	240	217	217	90%	178	168
3	142B	Flow Hood	1.00	50	50	46	46	92%	88	88
Total					530		484	91%		435

Remarks: a)
 b)
 c)

VAV Profile	
VAV Data	Airflow Set points
DDC Address: 2	Minimum Heating: 53
VAV Inlet Size: 6	Minimum Cooling: 53
Calibration Factor: 2.57	Maximum Heating: 480
	Maximum Cooling: 530

Premier Test & Balance

VAV Test Report

Project: Cook County Family YMCA
 System: Lobby-Office Unit
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

VAV Number: 3 Primary Airflow Measurements

Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	142C	Flow Hood	1.00	310	310	308	308	99%	267	267
Total					310		308	99%		267

Remarks: a)
 b)
 c)

VAV Profile			
VAV Data		Airflow Set points	
DDC Address:	12	Minimum Heating:	53
VAV Inlet Size:	6	Minimum Cooling:	53
Calibration Factor:	2.70	Maximum Heating:	310
		Maximum Cooling:	310

Premier Test & Balance

VAV Test Report

Project: Cook County Family YMCA
 System: Lobby-Office Unit
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

VAV Number: 4 Primary Airflow Measurements										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	143	Flow Hood	1.00	250	250	238	238	95%	172	172
2	139	Flow Hood	1.00	220	220	218	218	99%	233	233
Total					470		456	97%		405

Remarks: a)
 b)
 c)

VAV Profile			
VAV Data		Airflow Set points	
DDC Address:	11	Minimum Heating:	53
VAV Inlet Size:	6	Minimum Cooling:	53
Calibration Factor:	2.68	Maximum Heating:	470
		Maximum Cooling:	470

Premier Test & Balance

VAV Test Report

Project: Cook County Family YMCA
 System: Lobby-Office Unit
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

VAV Number: 5 Primary Airflow Measurements

Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	140B	Flow Hood	1.00	235	235	231	231	98%	206	206
2	140B	Flow Hood	1.00	235	235	243	243	103%	213	213
3	140B	Flow Hood	1.00	235	235	236	236	100%	210	210
4	140B	Flow Hood	1.00	235	235	238	238	101%	208	208
Total					940		948	101%		837

Remarks: a)
 b)
 c)

VAV Profile			
VAV Data		Airflow Set points	
DDC Address:	10	Minimum Heating:	105
VAV Inlet Size:	8	Minimum Cooling:	105
Calibration Factor:	2.51	Maximum Heating:	940
		Maximum Cooling:	940

Premier Test & Balance

VAV Test Report

Project: Cook County Family YMCA
 System: Lobby-Office Unit
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

VAV Number: 6 Primary Airflow Measurements

Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	140A	Flow Hood	1.00	275	275	279	279	101%	355	355
2	140A	Flow Hood	1.00	275	275	291	291	106%	367	367
3	140A	Flow Hood	1.00	275	275	272	272	99%	348	348
4	140A	Flow Hood	1.00	275	275	264	264	96%	338	338
Total					1100		1106	101%		1408

Remarks: a)
 b)
 c)

VAV Profile			
VAV Data		Airflow Set points	
DDC Address:	9	Minimum Heating:	165
VAV Inlet Size:	10	Minimum Cooling:	165
Calibration Factor:	1.23	Maximum Heating:	1100
		Maximum Cooling:	1100

Premier Test & Balance

VAV Test Report

Project: Cook County Family YMCA
 System: Lobby-Office Unit
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

VAV Number: 7 Primary Airflow Measurements

Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	111B	Flow Hood	1.00	140	140	136	136	97%	143	143
2	111C	Flow Hood	1.00	140	140	133	133	95%	133	133
3	111D	Flow Hood	1.00	145	145	141	141	97%	122	122
Total					425		410	96%		398

Remarks: a)
 b)
 c)

VAV Profile			
VAV Data		Airflow Set points	
DDC Address:	8	Minimum Heating:	53
VAV Inlet Size:	6	Minimum Cooling:	53
Calibration Factor:	2.22	Maximum Heating:	425
		Maximum Cooling:	425

Premier Test & Balance

VAV Test Report

Project: Cook County Family YMCA
 System: Lobby-Office Unit
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

VAV Number: 8 Primary Airflow Measurements

Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	111	Flow Hood	1.00	150	150	143	143	95%	128	128
2	111A	Flow Hood	1.00	140	140	136	136	97%	136	136
3	138	Flow Hood	1.00	325	325	327	327	101%	337	337
Total					615		606	99%		601

Remarks: a)
 b)
 c)

VAV Profile			
VAV Data		Airflow Set points	
DDC Address:	7	Minimum Heating:	105
VAV Inlet Size:	8	Minimum Cooling:	105
Calibration Factor:	2.08	Maximum Heating:	615
		Maximum Cooling:	615

Premier Test & Balance

VAV Test Report

Project: Cook County Family YMCA
 System: Lobby-Office Unit
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

VAV Number: 9 Primary Airflow Measurements										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	102	Flow Hood	1.00	205	205	213	213	104%	174	174
2	102	Flow Hood	1.00	205	205	188	188	92%	205	205
3	102	Flow Hood	1.00	205	205	198	198	97%	154	154
4	102	Flow Hood	1.00	205	205	195	195	95%	190	190
5	104	Flow Hood	1.00	230	230	217	217	94%	299	299
Total						1050	1011	96%		1022

Remarks: a)
 b)
 c)

VAV Profile			
VAV Data		Airflow Set points	
DDC Address:	6	Minimum Heating:	165
VAV Inlet Size:	10	Minimum Cooling:	165
Calibration Factor:	2.12	Maximum Heating:	1050
		Maximum Cooling:	1050

Premier Test & Balance

VAV Test Report

Project: Cook County Family YMCA
 System: Lobby-Office Unit
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

VAV Number: 10 Primary Airflow Measurements

Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	105	Flow Hood	1.00	185	185	192	192	104%	167	167
2	105	Flow Hood	1.00	185	185	183	183	99%	159	159
Total					370		375	101%		326

Remarks: a)
 b)
 c)

VAV Profile

VAV Data		Airflow Set points	
DDC Address:	5	Minimum Heating:	53
VAV Inlet Size:	6	Minimum Cooling:	53
Calibration Factor:	2.52	Maximum Heating:	370
		Maximum Cooling:	370

Premier Test & Balance

Air Handling Unit Test Data

Project: Cook County Family YMCA
 System: Weight Room Unit (Supply)
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 2/25/14

System Scheduled Data

Model number: J10ZHC00Q4AA	Serial number: NIG3957921
Manufacturer: Johnson Controls	Outlet Total CFM: 3,440
Total Design CFM: 3,500	Outside Air CFM: 1,000
Fan Static Pressure: 0.80	Equipment Location: Roof

Performance Data

Description	Scheduled / Submittal Data	Actual Field Measurements		
Motor HP:	3.00	3.00		
Motor RPM:	1725	1725		
Motor Hertz:	60	60		
Motor Service Factor:	1.15	1.15		
Motor Phase:	3	3		
Motor Voltage:	460	460	460	460
Motor Amperage:	4.7	4.3	4.3	4.3
Motor BHP:	2.22	2.74		
Fan RPM:	1059	969		

Static Pressure Data

Component	Static Pressure		Pressure Rise / Drop	Pressure Total
	In	Out		
Fan:	-0.21	0.43	Rise	0.64

Airflow Measurements

Supply Air										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	124 Weight Room	12x14	1.17	686	800	626	730	91%	601	701
2	125 - 125B	16x28	3.11	849	2640	928	2887	109%	988	3074
Total					3440		3617	105%		3775

Outside Air

Design Outside Air %	Return Air Temperature	Outside Air Temperature	Mixed Air Temperature	Measured Actual %
29.0%	64.6	-6.0	46.0	26.3%

Remarks: a) OA damper 18%.
 b)
 c)
 d)
 e)

Premier Test & Balance

Air Outlet Test Report

Project: Cook County Family YMCA
 System: Weight Room Unit (Supply)
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/21/13

Airflow Measurements										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	124	Flow Hood	1.00	400	400	390	390	98%	348	348
2	124	Flow Hood	1.00	400	400	372	372	93%	329	329
3	124	Flow Hood	1.00	175	175	162	189	108%	182	182
4	124	Flow Hood	1.00	175	175	188	177	101%	218	218
5	124	Flow Hood	1.00	175	175	174	184	105%	190	190
6	124	Flow Hood	1.00	175	175	162	176	101%	206	206
7	124	Flow Hood	1.00	175	175	186	186	106%	200	200
8	124	Flow Hood	1.00	175	175	158	182	104%	195	195
9	125B	Flow Hood	1.00	265	265	290	290	109%	303	303
10	125B	Flow Hood	1.00	265	265	273	273	103%	321	321
11	125B	Flow Hood	1.00	265	265	245	280	106%	298	298
12	125B	Flow Hood	1.00	265	265	256	265	100%	312	312
13	125B	Flow Hood	1.00	265	265	247	260	98%	306	306
14	125B	Flow Hood	1.00	265	265	272	272	103%	301	301
Total					3440		3496	102%		3709

Remarks: a)
 b)
 c)
 d)
 e)

Premier Test & Balance

Air Handling Unit Test Data

Project: Cook County Family YMCA
 System: Gym Unit (Supply)
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 2/25/14

System Scheduled Data

Model number: V34AW24A8KAXBK0001	Serial number: N1H3968826
Manufacturer: Johnson Controls	Outlet Total CFM: 16,100
Total Design CFM: 16,000	Outside Air CFM: 2,600
Fan Static Pressure: 1.50	Equipment Location: Roof

Performance Data

Description	Scheduled / Submittal Data	Actual Field Measurements		
Motor HP:	25.00	25.00		
Motor RPM:	1770	1770		
Motor Hertz:	60	60		
Motor Service Factor:	1.15	1.15		
Motor Phase:	3	3		
Motor Voltage:	460	460	460	460
Motor Amperage:	30.0	27.0	27.0	27.0
Motor BHP:	20.20	22.50		
Fan RPM:	867	861		

Static Pressure Data

Component	Static Pressure		Pressure Rise / Drop	Pressure Total
	In	Out		
Fan:	-0.11	0.34	Rise	0.45

Airflow Measurements

Supply Air										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1		36x62	15.50	1039	16100	1135	17593	109%	1135	17593
Total					16100		17593	109%		17593

Outside Air

Design Outside Air %	Return Air Temperature	Outside Air Temperature	Mixed Air Temperature	Measured Actual %
19.0%	59.8	-6.0	47.3	49.0%

Remarks: a) OA damper 19%.
 b)
 c)
 d)
 e)

Premier Test & Balance

Air Handling Unit Test Data

Project: Cook County Family YMCA
 System: Pool Unit (Supply)
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/21/13

System Scheduled Data

Model number: NV-018-NB-X-N6FB5153W2E4AD0	Serial number: 13061809
Manufacturer: Seresco	Outlet Total CFM: 15,000
Total Design CFM: 15,000	Outside Air CFM: 7,500
Fan Static Pressure: 2.25	Equipment Location: Roof

Performance Data

Description	Scheduled / Submittal Data	Actual Field Measurements		
Motor HP:	15.00	15.00		
Motor RPM:	1750	1750		
Motor Hertz:	60	60		
Motor Service Factor:	1.15	1.15		
Motor Phase:	3	3		
Motor Voltage:	460	460	460	460
Motor Amperage:	19.2	15.2	15.2	15.2
Motor BHP:	14.20	11.88		
Fan RPM:	1250	1250		

Static Pressure Data

Component	Static Pressure		Pressure Rise / Drop	Pressure Total
	In	Out		
Fan:	-1.20	1.14	Rise	2.34
Heating Coil:	-1.34	-1.20	Drop	0.14
Cooling Coil:	-1.22	-1.34	Drop	0.12
Filters:	-0.78	-1.22	Drop	0.44

Airflow Measurements

Supply Air										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	112	34	6.30	1333	8400	1344	8470	101%	1344	8470
2	112F	30	4.91	1304	6400	1322	6486	101%	1322	6486
Total					14800		14956	101%		14956

Remarks: a) Amps were recorded from the VFD display.
 b)
 c)
 d)
 e)

Premier Test & Balance

Air Handling Unit Test Data

Project: Cook County Family YMCA
 System: Locker Unit (Supply)
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

System Scheduled Data

Model number: J05ZFC00R4AZZ2	Serial number: NIG3945667
Manufacturer: Johnson Controls	Outlet Total CFM: 1,740
Total Design CFM: 1,600	Outside Air CFM: 1,785
Fan Static Pressure: 1.10	Equipment Location: Roof

Performance Data

Description	Scheduled / Submittal Data	Actual Field Measurements		
Motor HP:	1.50	1.50		
Motor RPM:	1725	1725		
Motor Hertz:	60	60		
Motor Service Factor:	1.15	1.15		
Motor Phase:	3	3		
Motor Voltage:	460	460	460	460
Motor Amperage:	2.5	2.2	2.2	2.2
Motor BHP:	0.93	1.32		
Fan RPM:	1132	1118		

Static Pressure Data

Component	Static Pressure		Pressure Rise / Drop	Pressure Total
	In	Out		
Fan:	-0.12	0.51	Rise	0.63

Airflow Measurements

Supply Air										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
	Locker Rooms			-	1740	-	1785	103%	-	1902
Total					1740		1785	103%		1902

Remarks: a) 100% OA unit.
 b)
 c)
 d)
 e)

Premier Test & Balance

Air Outlet Test Report

Project: Cook County Family YMCA
 System: Locker Unit (Supply)
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

Airflow Measurements										
Return Air										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	112C	Flow Hood	1.00	55	55	60	60	109%	135	135
2	122	Flow Hood	1.00	85	85	90	90	106%	98	98
3	123	Flow Hood	1.00	70	70	65	65	93%	0	106
4	126	Flow Hood	1.00	150	150	142	142	95%	134	134
5	127	Flow Hood	1.00	225	225	238	238	106%	259	259
6	127	Flow Hood	1.00	225	225	246	246	109%	192	192
7	131	Flow Hood	1.00	225	225	244	244	108%	255	255
8	131	Flow Hood	1.00	225	225	241	241	107%	212	212
9	135	Flow Hood	1.00	140	140	136	136	97%	129	129
10	135	Flow Hood	1.00	140	140	132	132	94%	121	121
11	136	Flow Hood	1.00	100	100	98	98	98%	135	135
12	137	Flow Hood	1.00	100	100	93	93	93%	126	126
Total					1740		1785	103%		1902

Remarks: a)
 b)
 c)
 d)
 e)

Premier Test & Balance

Fan Test Data

Project: Cook County Family YMCA
 System: Room 112B
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 1/23/14

System Scheduled Data			
Model number:	BCRU-110B	Serial number:	88576
Manufacturer:	Twin City Fan & Blower	Outlet Total CFM:	575
Total Design CFM:	575	Equipment Location:	Roof
Fan Static Pressure:	0.50		

Performance Data		
Description	Scheduled / Submittal Data	Actual Field Measurements
Motor HP:	0.25	0.25
Motor RPM:	1750	1750
Motor Hertz:	60	60
Motor Service Factor:	1.15	1.15
Motor Phase:	1	1
Motor Voltage:	115	122
Motor Amperage:	4.2	4.0
Motor BHP:	0.09	0.25
Fan RPM:	1075	1071

Static Pressure Data				
Component	Static Pressure		Pressure Rise / Drop	Pressure Total
	In	Out		
Fan:	-0.22	0.00	Rise	0.22

Airflow Measurements										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	112B	Flow Hood	1.00	575	575	625	625	109%	625	625
Total					575		625	109%		625

Remarks: a)
 b)
 c)
 d)
 e)

Premier Test & Balance

Fan Test Data

Project: Cook County Family YMCA
 System: Room 113A
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 1/23/14

System Scheduled Data	
Model number: DCRU-073B1	Serial number: 86274
Manufacturer: Twin City Fan & Blower	Outlet Total CFM: 175
Total Design CFM: 175	Equipment Location: Roof
Fan Static Pressure: 0.30	

Performance Data		
Description	Scheduled / Submittal Data	Actual Field Measurements
Motor HP:	0.13	0.13
Motor RPM:	1650	1650
Motor Hertz:	60	60
Motor Service Factor:	1.15	1.15
Motor Phase:	1	1
Motor Voltage:	115	122
Motor Amperage:	1.7	1.6
Motor BHP:	0.05	0.12
Fan RPM:	1321	1321

Static Pressure Data				
Component	Static Pressure		Pressure Rise / Drop	Pressure Total
	In	Out		
Fan:	-0.19	0.00	Rise	0.19

Airflow Measurements										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	113A	8	0.35	502	175	491	171	98%	491	171
Total					175		171	98%		171

Remarks: a)
 b)
 c)
 d)
 e)

Premier Test & Balance

Fan Test Data

Project: Cook County Family YMCA
 System: Room 113B
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 1/23/14

System Scheduled Data	
Model number: DCRU-073B1	Serial number: 86273
Manufacturer: Twin City Fan & Blower	Outlet Total CFM: 100
Total Design CFM: 100	Equipment Location: Roof
Fan Static Pressure: 0.30	

Performance Data		
Description	Scheduled / Submittal Data	Actual Field Measurements
Motor HP:	0.13	0.13
Motor RPM:	1650	1650
Motor Hertz:	60	60
Motor Service Factor:	1.15	1.15
Motor Phase:	1	1
Motor Voltage:	115	122
Motor Amperage:	1.7	1.4
Motor BHP:	0.10	0.11
Fan RPM:	1615	1615

Static Pressure Data				
Component	Static Pressure		Pressure Rise / Drop	Pressure Total
	In	Out		
Fan:	-0.13	0.00	Rise	0.13

Airflow Measurements										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	113B	6	0.20	510	100	475	93	93%	475	93
Total					100		93	93%		93

Remarks: a)
 b)
 c)
 d)
 e)

Premier Test & Balance

Fan Test Data

Project: Cook County Family YMCA
 System: Room 113C
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 1/23/14

System Scheduled Data			
Model number:	BCRU-120B	Serial number:	62197
Manufacturer:	Twin City Fan & Blower	Outlet Total CFM:	810
Total Design CFM:	810	Equipment Location:	Roof
Fan Static Pressure:	0.25		

Performance Data		
Description	Scheduled / Submittal Data	Actual Field Measurements
Motor HP:	0.25	0.25
Motor RPM:	1750	1750
Motor Hertz:	60	60
Motor Service Factor:	1.15	1.15
Motor Phase:	1	1
Motor Voltage:	115	122
Motor Amperage:	4.2	3.8
Motor BHP:	0.07	0.24
Fan RPM:	830	827

Static Pressure Data				
Component	Static Pressure		Pressure Rise / Drop	Pressure Total
	In	Out		
Fan:	-0.18	0.00	Rise	0.18

Airflow Measurements										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	113C	16x28	1.55	523	810	493	764	94%	493	764
Total					810		764	94%		764

Remarks: a)
 b)
 c)
 d)
 e)

Premier Test & Balance

Fan Test Data

Project: Cook County Family YMCA
 System: Locker Rooms-137
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 12/20/13

System Scheduled Data	
Model number: BCRU-120B	Serial number: 9513
Manufacturer: Twin City Fan & Blower	Outlet Total CFM: 1,150
Total Design CFM: 1,600	Equipment Location: Roof
Fan Static Pressure: 0.63	

Performance Data		
Description	Scheduled / Submittal Data	Actual Field Measurements
Motor HP:	0.50	0.50
Motor RPM:	1750	1750
Motor Hertz:	60	60
Motor Service Factor:	1.15	1.15
Motor Phase:	1	1
Motor Voltage:	115	-
Motor Amperage:	8.2	-
Motor BHP:	0.39	-
Fan RPM:	1510	1508

Static Pressure Data				
Component	Static Pressure		Pressure Rise / Drop	Pressure Total
	In	Out		
Fan:	-0.34	0.00	Rise	0.34

Airflow Measurements										
Opening No.	Area Served	Size	K Factor	Design		Final Reading			Preliminary Reading	
				Velocity	CFM	Velocity	CFM	%	Velocity	CFM
1	107	Flow Hood	1.00	50	50	46	46	92%	152	152
2	106	Flow Hood	1.00	100	100	104	104	104%	91	91
3	137	Flow Hood	1.00	50	50	54	54	108%	121	121
4	136	Flow Hood	1.00	50	50	51	51	102%	169	169
5	131	Flow Hood	1.00	225	225	204	204	91%	165	165
5.5	131	Flow Hood	1.00	225	225	235	235	104%	215	215
6	127	Flow Hood	1.00	150	150	164	164	109%	156	156
7	127	Flow Hood	1.00	150	150	142	142	95%	126	126
8	127	Flow Hood	1.00	150	150	148	148	99%	119	119
9	130	Flow Hood	1.00	52	50	54	54	108%	86	86
Total					1200		1202	100%		1400

Remarks: a)
 b)
 c)
 d)
 e)

Premier Test & Balance

Balancing Valve Test Data

Project: Cook County Family YMCA
 System: Existing Heating Water
 Technician: Karl Jorgenson

Premier Job Number: 4084
 Completion Date: 1/23/14

Water flow Measurements											
Station No.	Terminal Name	Valve Size	Valve Setting	CV Rating	Design		Final Reading			Preliminary Reading	
					Inches	GPM	Inches	GPM	%	Inches	GPM
1	Lobby/Office	DN50	5.0	26.66	42	32.9	43	33.2	101%		
2	Locker	*				20.0			0%		
3	Gym	DN65	7.0	104.65	6	48.0	7	52.6	110%		
4	Weight Rm	DN50	6.0	30.04	19	25.0	19	24.9	99%		
5	Pool	DN50	7.0	34.20	38	40.0	42	42.1	105%		
6	VAV-2	0.5	0.8	0.81	47	1.1	52	1.1	105%		
7	VAV-3	0.5	1.0	0.81	16	0.6	14	0.6	94%		
8	VAV-4	0.5	1.0	0.81	44	1.0	48	1.1	104%		
9	VAV-5	0.75	2.0	1.50	178	3.8	170	3.7	98%		
10	VAV-6	0.75	1.5	1.40	72	2.3	67	2.2	96%		
11	VAV-7	0.5	1.2	0.85	31	0.9	33	0.9	103%		
12	VAV-8	0.5	1.0	0.81	63	1.2	60	1.2	98%		
13	VAV-9	0.75	1.6	1.45	58	2.1	61	2.2	103%		
14	VAV-10	0.5	1.3	0.86	21	0.7	19	0.7	96%		
15	CUH-1	0.75	2.2	1.65	41	2.0	38	1.9	97%		
16	CUH-2	0.75	2.0	1.50	49	2.0	44	1.9	94%		
17	CUH-3	0.75	1.2	0.85	86	1.5	98	1.6	107%		
18	UH-2	0.75	1.0	1.30	37	1.5	35	1.5	97%		
19	HWRC-124	0.5	3.0	1.60	31	1.7	28	1.6	95%		
Total						188.3		174.9	93%		0.0

Remarks: a) Water flow station manufacturer: Gruvlock & Grinnel
 b) * no access to circuit setter.
 c)
 d)
 e)