Report By:

National TAB
1329 E. KEMPER ROAD
SUITE 4210
CINCINNATI, OH 45246

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 12/16/2024

Completed By: National TAB

PROJECT

01-06-25 WAWA #6302 HINESVILLE, GA

824 E GENERAL STEWART WAY

HINESVILLE, GA 31313

Client

Wawa

260 West Baltimore Pike

Wawa, PA 19063

National TAB

Project: 01-06-25 WAWA #6302 HINESVILLE, GA

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Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report is further detail about your building performance including recommendations, asset data, and pictures. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, possible parts needed, or time constraints.

RTU's (Roof Top Units) w/ Diffusers

Each of the RTU's were measured at their terminal devices or via traverse to establish a total flow for that unit. Each RTU was adjusted to within tolerance of the engineer's design flow. Each outlet was then adjusted to within tolerance of the design flow. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. The outside air damper was adjusted until the airflow was within the design requirements. Any equipment that fell outside of that tolerance is noted throughout the report.

General Exhaust Fans w/ Grilles

The general exhaust fans were measured by reading each air device with a flow hood. The total airflow for each fan is equivalent to the sum of these readings. Fan speed was then adjusted so that the airflow was within tolerance of design. Each terminal device was balanced to within tolerance of the design volume using the installed volume dampers. Any equipment that fell outside of this tolerance is noted throughout the report.

Ceiling Exhaust Fans

The ceiling exhaust fans were measured using a flow hood. If speed adjustment was provided, the fan speed was adjusted to within design tolerance. Any equipment that fell outside of this tolerance is noted throughout the report.

Final Building Tests

After completing the test and balance the final building pressure was measured. It was confirmed that the building pressure fell within acceptable tolerances and that the pressure measurement coincides with the actual and design net airflow. Any deviations from these standards are noted throughout the report.

Issue List

- Ceiling Tiles Not Installed
- RTU 3 Damaged Panels
- RTUs 2 & 3 No Turning Vanes In Supply Drops

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Project Issue Information

Issue Name : Ceiling Tiles Not Installed

Description : The ceiling tiles have not yet been installed. This prevents NTi technicians from being able to balance any of the linear diffusers throughout the space. As a result only the total flows will be set at this time.

Created By : National TAB

Assigned To : National TAB - Stephen Tassinaro

Status : Open

Priority : Urgent

Asset Tag :

Originated Date : 12/09/2024 - Stephen Tassinaro - National TAB

Project Issue File Details

12/09/2024

12/09/2024

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Project Issue Information

Issue Name : RTU 3 Damaged Panels

Description : The damaged top panel on RTU 3 is preventing the blower door from being opened. Recommend repairing or replacing panel.

Created By : National TAB

Assigned To : National TAB - Stephen Tassinaro

Status : Open

Priority : High

Asset Tag :

Originated Date : 12/10/2024 - Stephen Tassinaro - National TAB

Project Issue File Details

12/10/2024

12/10/2024

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Project Issue Information

Issue Name : RTUs 2 & 3 No Turning Vanes In Supply Drops

Description : There are no turning vanes installed in the bottom of the supply drops for RTUs 2 & 3. Recommend verifying with the EOR that these are not required. HVAC GENERAL NOTES Note 12.

Created By : National TAB

Assigned To : National TAB - Stephen Tassinaro

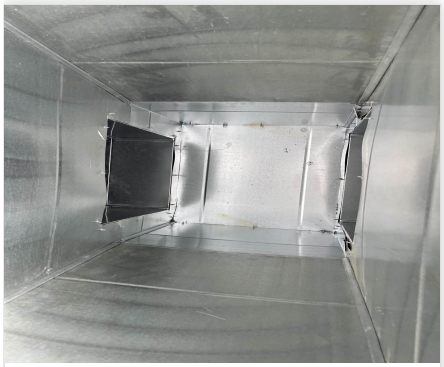
Status : Open

Priority : Urgent

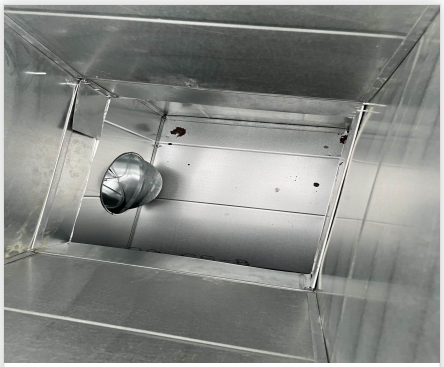
Asset Tag :

Originated Date : 12/09/2024 - Stephen Tassinaro - National TAB

Project Issue File Details



12/09/2024



12/09/2024

NATIONAL TAB

AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		OA %		HOOD MAKE-UP		HOOD EXHAUST		GENERAL EXH.	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU-1	CORE	3400	3419	2900	2926	500	493	14.7%	14.4%						
RTU-2	DELI	5000	4988	4500	4486	500	502	10.0%	10.1%						
RTU-3	RETAIL	3000	2999	2700	2694	300	305	10.0%	10.2%						
EF-1	FOOD SVC/RR													800	776
EF-2	WATER SVC RM													60	62
TOTALS		11400	11406	10100	10106	1300	1300			0	0	0	0	860	838

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1300	1300
TOTAL EXHAUST	860	838
NET AIRFLOW	440	462

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	0.003
SIDE	0.003
REAR	0.005
AVERAGE	**0.0037**

FINAL CHECKS

ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓

MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✓

NOTES:

CheckList List

- 01: RTU's/AHU's
- 02: LENNOX SETUP PARAMETERS
- 03: SENSOR WIRING (LENNOX)
- 04: EF'S
- 05: CLOSEOUT CHECKS

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CheckList Information

Name :	01: RTU's/AHU's	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	12/04/2024 - Brianna Biggs - National TAB		
Completed Date :	01/09/2025 - Mark Johnson - National TAB		

CheckList Item Details

RTU's/AHU's

All diffusers and grilles are installed and match design?	Pass
Comment:	
Clean filters installed?	Pass
Comment:	
Economizers are assembled and functional?	Pass
Comment:	
Motors are all operating below the FLA rating?	Pass
Comment:	
Are belts tight?	N/A
Comment: Direct Drive	
If direct drive unit is the speed controller working?	Pass
Comment:	

Is gas piping installed and valves turned on?	N/A
Comment: Electric Heating	
Condensate drains are installed?	Pass
Comment:	
Unit free of noticeable noise and vibration	Pass
Comment:	
Final outside air damper position is marked with permanent marker?	Pass
Comment:	
No alarms present?	Pass
Comment:	
Any noticeable duct leakage?	Pass
Comment:	
Total supply and OA flows are balanced within +/-5% and supply & return diffusers within +/-10%?	Pass
Comment:	
IN TEST MODE, TEST THE FOLLOWING:	
Cooling mode is operational? Record EAT/LAT for each unit:	Pass
Comment: RTU 1: 68F/55F / RTU 2: 67F/55F / RTU 3: 70F/52F	
Heating mode is operational? Record EAT/LAT for each unit:	Pass
Comment: RTU 1: 68F/71F / RTU 3: 71F/74F	
Dehumidification mode is operational? (Feel dehumidification coil with your hand. Is it hot?) Record EAT/LAT for each unit:	Pass

Comment:

RTU 1: 69F/69F / RTU 2: 67F/65F / RTU 3: 72F/67F / Dehum coils warm.

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CheckList Information

Name :	02: LENNOX SETUP PARAMETERS	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	12/04/2024 - Brianna Biggs - National TAB		

CheckList Item Details

UNIT ID CONFIGURATIONS	
BACNET CONFIGURATION: GO TO SETTINGS>GENERAL>CONFIGURATION ID1 POSITION 5 SET TO "N".	Pass
Comment:	
NETWORK CONFIGURATION: GO TO SETUP>NETWORK INTEGRATION, SET TO BACNET IP	Pass
Comment:	
CONTROL MODE: SET CONTROL MODE TO ROOM SENSOR: CO2, TEMP & HUMIDITY (PER UNIT, AS NEEDED).	Pass
Comment:	
INDIVIDUAL PARAMETER CONFIGURATIONS (MECHANICAL CONTRACTOR TO DEFINE / AS APPLICABLE):	
PARAMETER 105 DEHUMID MODE: 7 NO CONDITIONS	Pass
Comment:	
PARAMETER 106 DEHUMID SETPOINT: 50, THIS IS A CENTERED SET POINT (+/-)	Yes
Comment:	
PARAMETER 107 DEHUMID DEADBAND: 3 (DEFAULT) THIS IS THE ACTUAL +/- VALUE	Pass
Comment:	

PARAMETER 117 CO2 DAMPER MAX OPEN: 50%	Pass
Comment:	
PARAMETER 118 CO2 START OPEN PPM: 1500	Pass
Comment: 1200 PER PLAN	
PARAMETER 119 CO2 MAX OPEN PPM: 1500	Pass
Comment:	
PARAMETER 137 OCCHET SET POINT: 68 (BACK UP)	Pass
Comment:	
PARAMETER 131 SET TO THE SAME % AS THE MINMIUM OA DAMPER SETPOINT	Pass
Comment:	
PARAMETER 139 OCC COOLING SET POINT: 72 (BACK UP)	Pass
Comment:	
PARAMETER 154 OCC BLOWER MODE: ON-CONTINUOUS 1	Pass
Comment:	
CFM VALUES / MSAV FAN SPEEDS (AIR BALANCER TO DEFINE / IF APPLICABLE):	
OA DAMPER SET TO SAME POSITION IN ALL FAN SPEEDS?	Pass
Comment:	
ALL FAN SPEEDS SET TO THE SAME CFM VALUE (ENTER SETPOINTS BELOW)	Pass
Comment: RTU 1: 68% / RTU 2: 92% / RTU 3: 60%	
HEAT CFM VALUE: PER THE HVAC SCHEDULE	Pass
Comment:	
HIGH COOL CFM VALUE: THE HIGH COOL CFM VALUE	Pass

Comment:	
LOW COOL CFM VALUE: MATCH THE HIGH COOL CFM VALUE	Pass
Comment:	
VENTILATION CFM VALUE: MATCH THE HIGH COOL CFM VALUE	Pass
Comment:	

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CheckList Information

Name :	03: SENSOR WIRING (LENNOX)	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	12/04/2024 - Brianna Biggs - National TAB		
Completed Date :	01/09/2025 - Mark Johnson - National TAB		

CheckList Item Details

COMBINATION TEMPERATURE/HUMIDITY SENSOR

Sensors are installed where shown on the drawing?	Pass
Comment:	
2 conductor shielded cable has one wire landed to Vin, one to GND, and the shield wire is not connected.	Pass
Comment:	
For second shielded cable, one wire is landed to Vout and the shield wire is not connected.	Pass
Comment:	
Verify that the CORE or Prodigy controller is sensing a relative humidity (record the reading)	Pass
Comment:	

RTU 1: 61% / RTU 2: 63% / RTU 3: 55%

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CheckList Information

Name :	04: EF'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	12/04/2024 - Brianna Biggs - National TAB		
Completed Date :	01/09/2025 - Mark Johnson - National TAB		

CheckList Item Details

EF's

Rotation is correct?	Pass
Comment:	
Belts are tight (if applicable)?	N/A
Comment:	
N/A - Direct Drive	
Speed controller installed and functional (if applicable)?	Pass
Comment:	
There is no major leakage around base of fan?	Pass
Comment:	
Is the motor operating below the motor FLA rating?	Pass
Comment:	
Back draft damper installed and can it fully open?	Pass
Comment:	

Unit free of noticeable noise and vibration?	Pass
Comment:	
Total exhaust flow balanced within +/-5% and grilles are within +/-10%?	Pass
Comment:	

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CheckList Information

Name :	05: CLOSEOUT CHECKS	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	12/04/2024 - Brianna Biggs - National TAB		

CheckList Item Details

SPACE COMFORT	
Is space free of drafting?	Pass
Comment:	
Is space comfortable in all areas?	Pass
Comment:	
Is the space free of ventilation noise?	Pass
Comment:	
BUILDING PRESSURE	
Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)	Pass
Comment:	

National TAB

Project: 01-06-25 WAWA #6302 HINESVILLE, GA

System/Unit: AHU/RTU

Asset: RTU1 AREA:CORE

Unit Data		
	Design	**Actual**
MFG	LENNOX ENLIGHT	LENNOX ENLIGHT
Serial Num	-	5624G03843
Model Num	LCT102H4E	LCT102H4EG1Y
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	23X14
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	EBMPABST
Horsepower	3.75	3.8
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.7

Drive Data	
	Actual
Motor Sheave SetPt	DD

Test Data		
	Design	**Actual**
SF CFM	3400	3477
SF RPM	-	1386
RA CFM	2900	2965
OA CFM	500	512
RL Voltage	-	209/210/211
RL Amperage	-	2.7/2.6/2.8
SF System SetPt	-	63%
OA Damper Position	-	45%
OA Damper Type	-	SINGLE BLADE

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.32”
Fan Suction SP	-	-0.57”
Fan Discharge SP	-	0.30”
Total ESP	0.5"	0.62”
Fan Total SP	-	0.87”

Completed By: Mark Johnson on 01/09/2025

Unit Data - PHOTO LOG

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Project: 01-06-25 WAWA #6302 HINESVILLE, GA

System/Unit: AHU/RTU

Asset: RTU2 AREA:DELI

Unit Data		
	Design	**Actual**
MFG	LENNOX ENLIGHT	LENNOX ENLIGHT
Serial Num	-	5624G03845
Model Num	LCT150H4E	LCT150H4EN1Y
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	23X14
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	EBMPABST
Horsepower	3.75	3.8
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.7

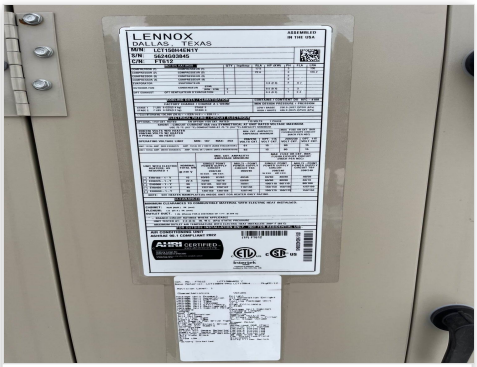
Drive Data	
	Actual
Motor Sheave SetPt	DD

Test Data		
	Design	**Actual**
SF CFM	5000	5040
SF RPM	-	1914
RA CFM	4500	4526
OA CFM	500	514
RL Voltage	-	212/212/212
RL Amperage	-	6.4/6.6/6.5
SF System SetPt	-	87%
OA Damper Position	-	36%
OA Damper Type	-	SINGLE BLADE

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.61”
Fan Suction SP	-	-1.01”
Fan Discharge SP	-	0.80”
Total ESP	0.5"	1.41”
Fan Total SP	-	1.81”

Completed By: Mark Johnson on 01/09/2025

Unit Data - PHOTO LOG



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Project: 01-06-25 WAWA #6302 HINESVILLE, GA

System/Unit: AHU/RTU

Asset: RTU3 AREA:RETAIL

Unit Data		
	Design	**Actual**
MFG	LENNOX ENLIGHT	LENNOX ENLIGHT
Serial Num	-	5624G03844
Model Num	LCT092H4E	LCT092H4EG1Y
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	23X14
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	EBMPABST
Horsepower	3.75	3.8
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.7

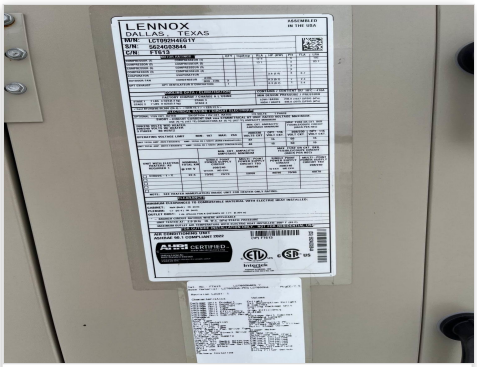
Drive Data	
	Actual
Motor Sheave SetPt	DD

Test Data		
	Design	**Actual**
SF CFM	3000	3071
SF RPM	-	1320
RA CFM	2700	2766
OA CFM	300	305
RL Voltage	-	209/209/210
RL Amperage	-	2.7/2.7/2.7
SF System SetPt	-	60%
OA Damper Position	-	27%
OA Damper Type	-	SINGLE BLADE

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.34”
Fan Suction SP	-	-0.56”
Fan Discharge SP	-	0.36”
Total ESP	0.5"	0.70”
Fan Total SP	-	0.92”

Completed By: Mark Johnson on 01/09/2025

Unit Data - PHOTO LOG



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Project: 01-06-25 WAWA #6302 HINESVILLE, GA

System/Unit: FAN - Exhaust

Asset: EF1 AREA:FOOD SERVICE/RESTROOM

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	G-120	G-120-4-VG-1-19-X
Serial Num	-	24925784 24G
Type	DOWNBLAST	CENTRIFUGAL
Configuration	VERTICAL	DOWNBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	N/L
Horsepower	1/4	1/4
Motor Rpm	-	1750
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	3.5
Service Factor	-	N/L

Test Data		
	Design	**Actual**
CFM	800	776
Fan RPM	863	DD
Fan Rotation	-	CW
Motor RPM	-	DD
System SetPt	-	9
Total ESP	0.250"	0.35”
Fan Inlet SP	-	-0.35”
Fan Discharge SP	-	ATM

Completed By: Stephen Tassinaro on 12/16/2024

Unit Data - PHOTO LOG

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Project: 01-06-25 WAWA #6302 HINESVILLE, GA

System/Unit: FAN - Exhaust

Asset: EF2 AREA:WATER SERVICE ROOM

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	CSP-B110	CSP-A110
Serial Num	-	24926092 24F
Type	INLINE	INLINE
Configuration	HORIZONTAL	HORIZONTAL

Test Data		
	Design	**Actual**
CFM	60	62
Fan Rotation	-	CORRECT
System SetPt	-	SPEED CONTROLLER
Total ESP	0.125"	0.04”
Fan Inlet SP	-	-0.02”
Fan Discharge SP	-	0.02”

Completed By: Stephen Tassinaro on 12/16/2024

Unit Data - PHOTO LOG

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