Report By:

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

Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 12/03/2024

Completed By: National TAB

PROJECT

Ferguson Showroom Reno (Madison, WI)

4800 Voges Road

Madison, WI 53718

Client

Air Temperature Services

5301 VOGES RD

MADISON, WI 53718

National TAB

Project: Ferguson Showroom Reno (Madison, WI)

Table Of Contents

Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. The purpose of this visit was to balance a 40-ton Trane RTU for a plumbing supply showroom, Ferguson Plumbing Supply, as well as 3 ceiling exhaust fans. Enclosed in the report are further details 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 (Roof Top Unit) w/ Diffusers

The RTU was measured at each of its terminal devices with a flow hood to establish a total flow for that unit. The 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.

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.

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Project: Ferguson Showroom Reno (Madison, WI)

System/Unit: AHU/RTU

Asset: (E)RTU-2 AREA:MAIN

Unit Data		
	Design	**Actual**
MFG	NA	TRANE
Serial Num	-	C22M09396
Model Num	NA	YCD480C4HA7
Configuration	-	VERTICAL
Num OA Filters 1	-	3
OA Filter Size 1	-	22X36
Num PreFilter 1	-	17
PreFilter Size 1	-	16X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR RELIANCE
Frame	-	256T
Horsepower	-	20
Motor Rpm	-	1765
Phase	-	3
Rated Voltage	-	460
Rated Amperage	-	24.0
Service Factor	-	1.15

Drive Data	
	Actual
Motor Sheave Size	2B5V58
Motor Bore Size	1-5/8"
Motor Sheave SetPt	FIXED
Fan Sheave Size	2B5V136
Fan Sheave Bore	1-11/16
Belt CL Distance	34"
Num of Belts	2
Belt Size	BX97

Test Data		
	Design	**Actual**
SF CFM	16000	16339
SF RPM	-	699
RA CFM	14400	14656
OA CFM	1600	1683
RL Voltage	-	481/480/480
RL Amperage	-	20.3 @VFD
OA Damper Position	-	MAX FAN SPEED: 13% / MIN FAN SPEED: 22%
Brake Horse Power	-	16.9

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.42"
Fan Suction SP	-	-1.32"
Fan Discharge SP	-	0.82"
Total ESP	-	1.24"
Fan Total SP	-	2.14"

Completed By: Michael McDonnell on 12/03/2024

Notes:
MOTOR SETPOINT: 56.0 HZ

Written By: Michael McDonnell on 12/03/2024

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Project:Ferguson Showroom Reno (Madison, WI)

AHU/RTU

Diffuser Supply (GRD)

(E)RTU-2/MAIN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**	**AK**	**CFM(2)**
(E)RTU-2-SGRD1	102	B	14	700	759	712	101.7		
(E)RTU-2-SGRD2	112	B	14	700	706	674	96.3		
(E)RTU-2-SGRD2	103	B	14	700	748	716	102.3		
(E)RTU-2-SGRD4	104	B	14	700	799	741	105.9		
(E)RTU-2-SGRD5	114	B	14	700	717	673	96.1		
(E)RTU-2-SGRD6	116	B	14	700	749	701	100.1		
(E)RTU-2-SGRD7	115	B	14	700	680	659	94.1		
(E)RTU-2-SGRD8	119	B	14	700	703	662	94.6		
(E)RTU-2-SGRD9	117	C	10	250	250	259	103.6		
(E)RTU-2-SGRD10	117	C	10	250	220	248	99.2		
(E)RTU-2-SGRD11	118	B	14	700	931	742	106.0		
(E)RTU-2-SGRD12	112	B	14	700	739	695	99.3		
(E)RTU-2-SGRD13	110	B	14	700	926	754	107.7		
(E)RTU-2-SGRD14	104	B	14	700	783	716	102.3		
(E)RTU-2-SGRD15	106	B	14	700	687	670	95.7		
(E)RTU-2-SGRD16	112	B	14	700	621	702	100.3		
(E)RTU-2-SGRD17	110	B	14	700	686	716	102.3		
(E)RTU-2-SGRD18	124	B	14	700	734	715	102.1		
(E)RTU-2-SGRD19	120	B	14	700	674	748	106.9		
(E)RTU-2-SGRD20	121	B	14	700	899	724	103.4		
(E)RTU-2-SGRD21	108	B	14	700	830	715	102.1		
(E)RTU-2-SGRD22	107	B	14	700	718	692	98.9		
(E)RTU-2-SGRD23	109	B	14	700	684	690	98.6		
(E)RTU-2-SGRD24	126	B	14	700	675	712	101.7		
(E)RTU-2-SGRD25	128	C	8	100	251	108	108.0		
(E)RTU-2-SGRD26	129	D	8	100	94	101	101.0		
(E)RTU-2-SGRD27	130	D	8	100	76	94	94.0		
Total				16200	17339	16339	100.86%		

Completed By: Michael McDonnell on 12/03/2024

Asset	Notes	Date	Written By
(E)RTU-2-SGRD26	[1] SUPPLY DIFFUSER ADDED TO RESTROOM. BALANCED TO 100 CFM TO KEEP ROOM NEGATIVE.	12/03/2024	Michael McDonnell
(E)RTU-2-SGRD27	[1] SUPPLY DIFFUSER ADDED TO RESTROOM. BALANCED TO 100 CFM TO KEEP ROOM NEGATIVE.	12/03/2024	Michael McDonnell

National TAB

Project: Ferguson Showroom Reno (Madison, WI)

System/Unit: FAN - Exhaust

Asset: EF1 AREA:130

Unit Data		
	Design	**Actual**
MFG	NA	PANASONIC
Model Num	NA	FV-1115VQ1
Serial Num	-	40314M
Type	CEILING	CEILING

Test Data		
	Design	**Actual**
CFM	150	150

Completed By: Michael McDonnell on 12/03/2024

Notes:
[1] SET TO 150 SETTING

Written By: Michael McDonnell on 12/03/2024

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Project: Ferguson Showroom Reno (Madison, WI)

System/Unit: FAN - Exhaust

Asset: EF2 AREA:129

Unit Data		
	Design	**Actual**
MFG	NA	PANASONIC
Model Num	NA	FV-1115VQ1
Serial Num	-	40314M
Type	CEILING	CEILING

Test Data		
	Design	**Actual**
CFM	150	151

Completed By: Michael McDonnell on 12/03/2024

Notes:
[1] SET TO 150 SETTING

Written By: Michael McDonnell on 12/03/2024

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Project: Ferguson Showroom Reno (Madison, WI)

System/Unit: FAN - Exhaust

Asset: EF3 AREA:125

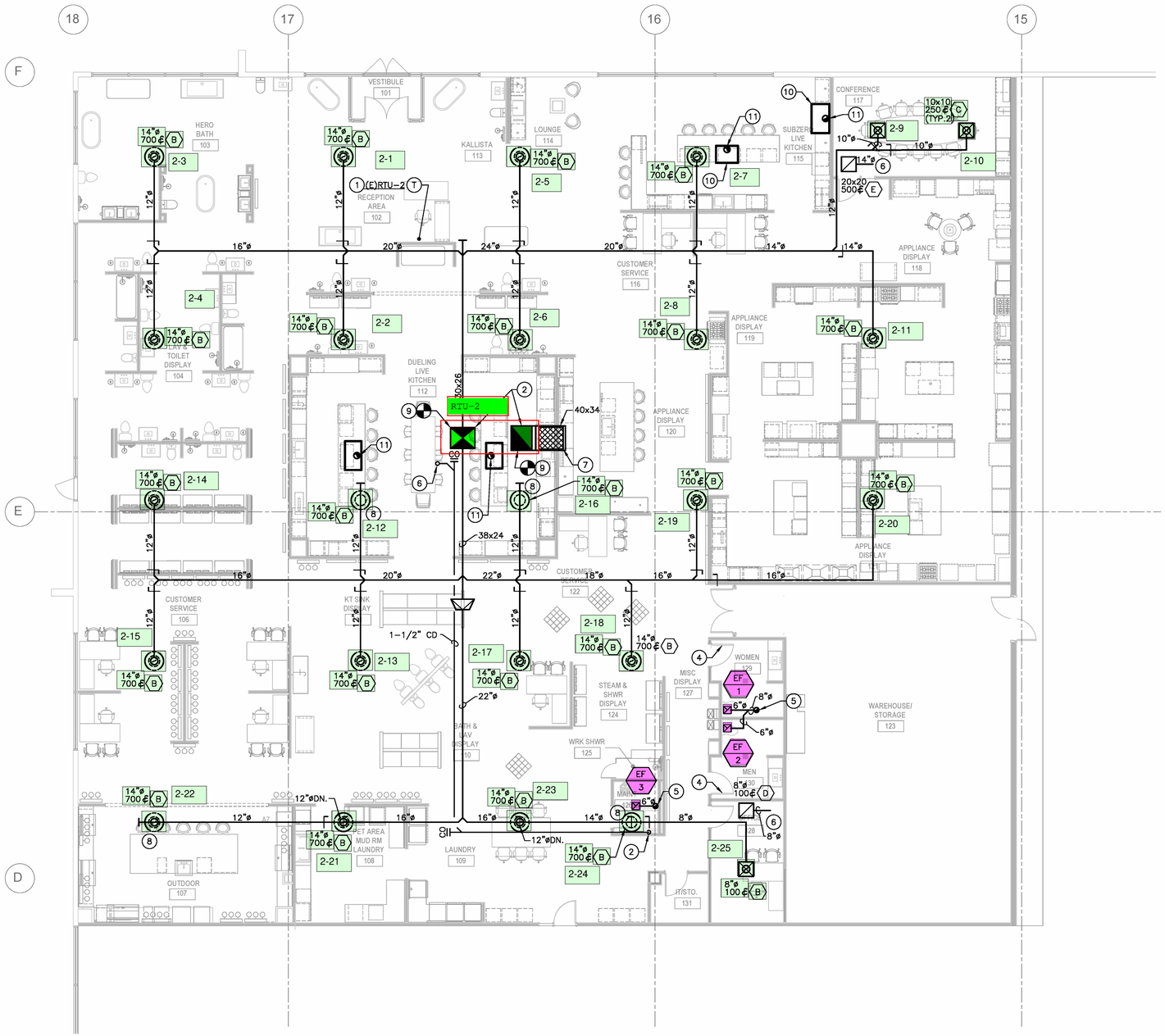
Unit Data		
	Design	**Actual**
MFG	NA	PANASONIC
Model Num	NA	FV-1115VQ1
Serial Num	-	40314M
Type	CEILING	CEILING

Test Data		
	Design	**Actual**
CFM	150	150

Completed By: Michael McDonnell on 12/03/2024

Notes:
[1] SET TO 150 SETTING

Written By: Michael McDonnell on 12/03/2024



GENERAL NOTES

A. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DETERMINING EXTENT OF DEMOLITION, AND COORDINATE WITH ALL OTHER TRADES. IN CASE OF DISCREPANCIES OR ANY POTENTIAL CONFLICTS, INFORM THE ARCHITECT AND ENGINEER IN WRITING PRIOR TO START OF WORK.

B. BOTTOM OF DUCT AT 16' A.F.F.

C. ALL EXPOSED DIFFUSER AT 14' A.F.F. UNLESS OTHERWISE NOTED.

KEY NOTES

1. RELOCATE EXISTING THERMOSTAT TO LOCATION SHOWN. PROVIDE VINYL LOCKING COVER IF LOCATED IN PUBLIC AREA.
2. 1-1/2" CONDENSATE DRAIN DOWN TO MOP SINK.
3. CONNECT TO EXISTING SUPPLY AND RETURN PLENUMS. VERIFY SIZE BEFORE START OF WORK.
4. 1" DOOR UNDERCUT.
5. EXHAUST DUCT UP THROUGH ROOF TO ROOF CAP. SEE M103 FOR CONTINUATION.
6. PROVIDE 5' FLEX TAIL.
6. 1-1/2" CONDENSATE DRAIN UTRTO EXISTING RTU ON ROOF.
7. PROVIDE 40x36 OPENING WITH 1/2" BIRD SCREEN AT OPENING.
8. MOUNT DIFFUSER HIGH AS PASSABLE TO BOTTOM SIDE OF DUCT.
9. POINT OF CONNECTION TO EXISTING SUPPLY AND RETURN PLENUM.
10. RANGE HOOD SHOW FOR REFERENCE. PROVIDE BY OTHERS.
11. INSTALL 10" ROUND KITCHEN EXHAUST DUCT FROM HOOD UP THROUGH ROOF TO NEW ROOF CAP. EXHAUST SHALL MAINTAIN 3' CLEAR FROM BUILDING OPENINGS AND 10' CLEAR FROM BUILDING INTAKES.

1 M102 MECHANICAL ENLARGED FLOOR PLAN
SCALE: 1/8" = 1'-0"

REVISIONS	BY
1 03-03-22	DP
2 04-28-22	DP
3 06-30-22	DP
4	
5	

DIAMOND PACIFIC
Structural Engineering Services
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BRADLEY D. KALMANS
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HOUSTON TEXAS
PROFESSIONAL ENGINEER

Ferguson Enterprises
Showroom Renovation #6524
4800 Voges Road
Madison, Wisconsin 53718

MECHANICAL ENLARGED FLOOR PLAN

DRAWN	DP
CHECKED	
DATE	09-18-23
JOB NO.	23010
SHEET	M102

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