

Report By:

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



Report: TAB Report
Function: Test, Adjust, & Balance
Date: 10/08/2024
Completed By: National TAB

PROJECT
10-14-24 FREDDYS - CINNAMINSON, NJ

1107 U.S. 130

Cinnaminson, NJ 08077

Client

JOHN 316

National TAB

Project: 10-14-24 FREDDYS - CINNAMINSON, NJ

Table Of Contents

Section	Page #
Summary	3
Remarks	4
Balance Schedule	8
Checklist Data	9
AHU/RTU	19
FAN - Exhaust	25
Kitchen Hood Type I	29
GRD Layout	31

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.

DOAS w/ Diffusers

Each of the DOAS were measured at their terminal devices or via traverse to establish a total flow for that unit. Each DOAS 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.

Kitchen Exhaust Hood & Associated Fans

Each kitchen exhaust fan was measured at the hood filter bay utilizing a velocity matrix and a manufacturer's correction factor. Each filter velocity is multiplied by the manufacturer's corrected area. The sum of these readings equals the total flow of the exhaust fans. The total flow of the exhaust was then adjusted to within tolerance of the design flow. . Any EF's that fell outside of this 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.

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 of $-0.02''$ wc to $+0.02''$ wc and that the pressure measurement coincides with the actual and design net airflow. Any deviations from these standards are noted throughout the report.

The hood capture was tested at the perimeter of the hood and the cook top level with the equipment heat on to ensure satisfactory hood capture and containment.

Issue List

- Info Only: DOAS design Flow
- KEF-2 Shaking
- RTU-1 Filters



10-14-24 FREDDYS - CINNAMINSON, NJ

Project Issue Information

Issue Name : Info Only: DOAS design Flow
Description : There is a discrepancy in The Doas design flow and connected load Cfm. The Doas is scheduled for 2375CFM but connected diffuser load is 2790. NTi balanced the Doas to scheduled flow and kept all diffusers proportional
Created By : National TAB **Assigned To :** National TAB - Tyler Youells
Status : Open
Priority : InfoOnly **Asset Tag :**
Originated Date : 10/08/2024 - Tyler Youells - National TAB

10-14-24 FREDDYS - CINNAMINSON, NJ

Project Issue Information

Issue Name : KEF-2 Shaking
Description : KEF-1 shakes when running. Shaking seems to be coming from the curb connection at the roof and is exacerbated by the heavy grease flue on the fan. Talking with Tom, GC will add more securement screws to the curb and reseal the roof membrane.
Created By : National TAB **Assigned To :** National TAB - Tyler Youells
Status : Open
Priority : Medium **Asset Tag :**
Originated Date : 10/08/2024 - Tyler Youells - National TAB

Project Issue File Details



10/08/2024



10/08/2024



10-14-24 FREDDYS - CINNAMINSON, NJ

Project Issue Information

Issue Name : RTU-1 Filters
Description : RTU-1 has Construction filters installed at time of TAB. Recommend replacing with MERV type filters prior to store turnover. Filter quantity: 4-20X24X2
Created By : National TAB **Assigned To :** National TAB - Tyler Youells
Status : Open
Priority : Low **Asset Tag :**
Originated Date : 10/08/2024 - Tyler Youells - National TAB

Project Issue File Details



10/08/2024



10/08/2024

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	DINING	5000	5111	4019	4147	981	964	19.6%	18.9%						
DOAS-1	KITCHEN	2375	2387	0	0	2375	2387	100.0%	100.0%						
KEF-1	GRIDDLE											1600	1765		
KEF-2	FRYER											775	846		
EF-1														150	163
EF-2														75	69
TOTALS		7375	7498	4019	4147	3356	3351			0	0	2375	2611	225	232

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3356	3351
TOTAL EXHAUST	2600	2843
NET AIRFLOW	756	508

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.008
SIDE	
REAR	0.0155
AVERAGE	0.0118

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

- TECH - STEP 1: INITIAL SITE WALKTHROUGH
- TECH - STEP 2: UNIT DATA AND EVAL
- TECH - STEP 3: TEST ADJUST AND BALANCE
- TECH - STEP 4: FINAL TESTS



10-14-24 FREDDYS - CINNAMINSON, NJ

CheckList Information

Name : TECH - STEP 1: INITIAL SITE WALKTHROUGH **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/01/2024 - Brian Turnbough - National TAB

Completed Date : 10/08/2024 - Tyler Youells - National TAB

CheckList Item Details

INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design? Yes

Comment:

All hood filters installed and accounted for? Yes

Comment:

Hoods are wired and have power? Yes

Comment:

Hood is free of alarms? Yes

Comment:

Thermostats have power? Yes

Comment:

Have trades/general contractor been notified about any issues and are they created on FaciliBuild?

Comment:



Comfort. Under Control.
www.nationaltab.com

10-14-24 FREDDYS - CINNAMINSON, NJ

CheckList Information

Name : TECH - STEP 2: UNIT DATA AND EVAL **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/01/2024 - Brian Turnbough - National TAB

Completed Date : 10/08/2024 - Tyler Youells - National TAB

CheckList Item Details

UNIT DATA AND EVALUATION WHILE GATHERING UNIT DATA CHECK THE FOLLOWING:

RTU's/AHU's

Economizers are assembled and functional? Yes

Comment:

DCV Max damper opening position is set to minimum? Yes

Comment:

Free cooling enthalpy set point set for lowest setting (Typically "D") Yes

Comment:

27BTU/# York Default

Motors are all operating below the FLA rating? Yes

Comment:

Are belts tight?

Comment:

Yes

If direct drive unit is the speed controller working.

Comment:

Yes

Is gas piping installed and valves turned on?

Yes

Comment:

Unit free of noticeable noise and vibration

Yes

Comment:

EF's

Rotation is correct?

Yes

Comment:

Belts are tight?

Comment:

N/A

Grease cup installed on hood fan?

Yes

Comment:

Hinge kit installed installed on hood fan?

Yes

Comment:

Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?

Yes

Comment:

Flex conduit is long enough so that fan can be completely tilted back?

Yes

Comment:

There is no major leakage around base of fan?

Yes

Comment:

Can kitchen equipment be turned on for final smoke test?

No

Comment:

Equipment has not been started up and is wrapped in plastic

DOCUMENTATION

Have trades/general contractor been notified about any issues and are they created on FaciliBuild?

Yes

Comment:



Comfort. Under Control.
www.nationaltab.com

10-14-24 FREDDYS - CINNAMINSON, NJ

CheckList Information

Name : TECH - STEP 3: TEST ADJUST AND BALANCE **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/01/2024 - Brian Turnbough - National TAB

Completed Date : 10/08/2024 - Tyler Youells - National TAB

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting? Yes

Comment:

Is space comfortable in all areas? Yes

Comment:

Is the space free of ventilation noise? Yes

Comment:

If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".

Comment:

DOAS Connected load does not equal Scheduled DOAS flow. NTi Balanced DOAS to scheduled flow and proportionally lowered Diffuser values



Comfort. Under Control.
www.nationaltab.com

10-14-24 FREDDYS - CINNAMINSON, NJ

CheckList Information

Name : TECH - STEP 4: FINAL TESTS **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/01/2024 - Brian Turnbough - National TAB

Completed Date : 10/08/2024 - Tyler Youells - National TAB

CheckList Item Details

FINAL TESTS

HOOD CAPTURE TEST

List equipment turned on for testing

Comment:

None, Startups not yet complete, Equipment not clean

List smoke candle type used

Comment:

45 Sec Smoke

Smoke test capture - Perimeter of hood

Comment:

100%

Smoke test capture - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed

10/08/2024

Comment:

TAB tech name / Firm

Comment:

Tyler/NTi

Site super name / Firm

Comment:

Tom/Bannett Group

Owner representative name / Firm (if Applicable)

Comment:

N/A

Building pressure at front & back doors (All Systems On)

Comment:

Yes

ADDITIONAL

Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)

Comment:

Yes

Thermostats are programmed?

Yes

Comment:

Notes:

[1] UNIT SCHEDULED AT 2375CFM. DIFFUSER ADD TO 2790. NTI LOWERED DIFFUSER DESIGN VALUES PROPORTIONALLY APART FROM THE OFFICE FLOW.

Written By: Tyler Youells on 10/08/2024



National TAB

Project:10-14-24 FREDDYS - CINNAMINSON, NJ

AHU/RTU



Diffuser Supply (GRD)

DOAS1/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
DOAS1-SGRD1	KITCHEN	SD2	10	330	1	226	248	261	79.1
DOAS1-SGRD2	OFFICE	SD4	10	150	1	101	107	138	92.0
DOAS1-SGRD3	KITCHEN	SD2	10	330	1	213	240	282	85.5
DOAS1-SGRD4	KITCHEN	SD2	10	330	1	288	316	272	82.4
DOAS1-SGRD5	KITCHEN	SD2	10	330	1	311	336	298	90.3
DOAS1-SGRD6	KITCHEN	SD3	10	330	1	272	299	289	87.6
DOAS1-SGRD7	KITCHEN	SD3	10	330	1	241	267	290	87.9
DOAS1-SGRD8	KITCHEN	SD2	10	330	1	272	298	276	83.6
DOAS1-SGRD9	KITCHEN	SD2	10	330	1	299	323	281	85.2
Total				2790		2223	2434	2387	85.56%

Completed By: Tyler Youells on 10/08/2024



National TAB

Project: 10-14-24 FREDDYS - CINNAMINSON, NJ

System/Unit: AHU/RTU



Asset: RTU1

AREA: KITCHEN

Unit Data		
	Design	Actual
MFG	CAPTIVE AIRE	YORK
Serial Num	-	N2C4182732
Model Num	CAS	ZJ150N24R2B5DCE1A2
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	30X22
Num Final Filter 1	-	4
Final Filter Size 1	-	20X24X2

Motor Data		
	Design	Actual
Motor MFG	-	BALDOR RELIANCE
Frame	-	184T
Horsepower	-	5
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	13.5

Drive Data	
	Actual
Motor Sheave Size	1VP56
Motor Bore Size	1.125"
Motor Sheave SetPt	3 TURNS OUT
Fan Sheave Size	BK77
Fan Sheave Bore	1"
Belt CL Distance	19.5"
Num of Belts	1
Belt Size	BX56
Belt Alignment	GOOD

Test Data		
	Design	Actual
SF CFM	5000	5111
SF RPM	-	1188
RA CFM	4019	4147
OA CFM	981	964
RL Voltage	-	212/211.1/211.3
RL Amperage	-	11.4 VFD
SF Rotation	-	CW
SF System SetPt	-	
RA Damper Position	-	MECHANICAL LINKAGE
Min OA Damper Position	-	23%/33%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	27BTU/# DEFAULT

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.48"
Fan Suction SP	-	-1.10"
Fan Discharge SP	-	1.06"
Total ESP	0.8"	1.54"
Fan Total SP	-	2.16"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES/CONSTRUCTION
Condensate Drain Installed	YES



National TAB

Project:10-14-24 FREDDYS - CINNAMINSON, NJ

AHU/RTU



Diffuser Supply (GRD)

RTU1/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
RTU1-SGRD1	DINING	SD1	12	470	1	505	489	489	104.0
RTU1-SGRD2	DINING	SD1	12	470	1	625	509	509	108.3
RTU1-SGRD3	DINING	SD1	12	470	1	658	504	504	107.2
RTU1-SGRD4	DINING	SD1	12	470	1	593	486	486	103.4
RTU1-SGRD5	DINING	SD1	12	470	1	361	444	444	94.5
RTU1-SGRD6	VESTIBULE	SD5	8	150	1	156	164	164	109.3
RTU1-SGRD7	DINING	SD1	12	470	1	412	491	491	104.5
RTU1-SGRD8	DINING	SD1	12	470	1	395	455	455	96.8
RTU1-SGRD9	DINING	SD1	12	470	1	298	475	475	101.1
RTU1-SGRD10	DINING	SD1	12	470	1	476	485	485	103.2
RTU1-SGRD11	DINING	SD1	12	470	1	559	455	455	96.8
RTU1-SGRD12		CORRIDOR	SD5	50	1	64	53	53	106.0
RTU1-SGRD13		WOMENS RR	SD5	50	1	88	49	49	98.0
RTU1-SGRD14		MENS RR	SD5	50	1	69	52	52	104.0
Total				5000		5259	5111	5111	102.22%

Completed By: Tyler Youells on 10/08/2024



National TAB

Project: 10-14-24 FREDDYS - CINNAMINSON, NJ

System/Unit: FAN - Exhaust



Asset: EF1

AREA:

Unit Data		
	Design	Actual
MFG	GREENHECK	LOREN COOK
Model Num	SP-A200-390	GEMINI 160
Serial Num	-	NL
Type	CEILING	CEILING

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Frame	-	115
Horsepower	-	16W
Motor Rpm	-	1100
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	.51
Service Factor	-	1

Test Data		
	Design	Actual
CFM	150	163
Fan RPM	-	1100
Fan Rotation	-	CW
Motor RPM	-	1100
System SetPt	-	WIRED FOR HIGH
RL Voltage	-	120.4
RL Amperage	-	0.47

Completed By: Tyler Youells on 10/08/2024



National TAB

Project: 10-14-24 FREDDYS - CINNAMINSON, NJ

System/Unit: FAN - Exhaust



Asset: EF2

AREA:

Unit Data		
	Design	Actual
MFG	GREENHECK	LOREN COOK
Model Num	SP-A200-390	NOT ACCESSIBLE
Serial Num	-	NOT ACCESSIBLE
Type	CEILING	CEILING

Motor Data		
	Design	Actual
Motor MFG	-	JAKEL
Frame	-	NL
Horsepower	-	57W
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	1.1
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	75	69
Fan RPM	-	1800
Fan Rotation	-	CW
Motor RPM	-	1800
System SetPt	-	FULL SPEED
RL Voltage	-	120.6
RL Amperage	-	0.9

Completed By: Tyler Youells on 10/08/2024



Asset: KEF1

AREA:GRIDDLE

Unit Data		
	Design	Actual
MFG	GREENHECK	CAPTIVEAIRE
Model Num	SP-A200-390	CASRE18DD
Serial Num	-	6079969
Type	UTILITY	UTILITY
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TECO
Frame	-	145T
Horsepower	1.000	1.5
Motor Rpm	-	1740
Phase	3	3
Voltage (rated)	208	230
Amperage (rated)	-	4.02
Service Factor	-	1.15

Test Data		
	Design	Actual
CFM	1600	1765
Fan RPM	-	1302
Fan Rotation	-	CCW
Motor RPM	-	1302
System SetPt	-	44.9HZ
RL Voltage	-	169 VFD
RL Amperage	-	4.4 VFD
Total ESP	1.500"	NA
Fan Inlet SP	-	NA
Fan Discharge SP	-	ATM

Unit Data - PHOTO LOG



image_344089912



image_202278950



image_875170563

Completed By: Tyler Youells on 10/08/2024



Asset: KEF2

AREA:FRYER

Unit Data		
	Design	Actual
MFG	GREENHECK	CAPTIVEAIRE
Model Num	SP-A200-390	DU50HFA
Serial Num	-	6079969
Type	CRE	CRE
Configuration	UPBLAST	UPBLAST

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Frame	-	NL
Horsepower	-	0.50
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	6.3
Service Factor	-	1

Test Data		
	Design	Actual
CFM	775	846
Fan RPM	-	1260
Fan Rotation	-	CCW
Motor RPM	-	1260
System SetPt	-	70%
RL Voltage	-	120.9
RL Amperage	-	5.16
Total ESP	-	1.37"
Fan Inlet SP	-	-1.37"
Fan Discharge SP	-	ATM

Unit Data - PHOTO LOG



image_365841725



image_2134599030



image_2056857519

Completed By: Tyler Youells on 10/08/2024



National TAB

Project: 10-14-24 FREDDYS - CINNAMINSON, NJ

System/Unit: Kitchen Hood Type I



Asset: HD1

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-2	5424 ND-2
Job / Serial Num	-	6079969
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	96"	96"
Hood Width	54"	54"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO FILTER	CAPTRATE SOLO
Filter Size 1	16X16	16X16
Filter Qty 1	5	5
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	8.1	8.1
Filter1 FPM	-	210
Filter2 FPM	-	218
Filter3 FPM	-	229
Filter4 FPM	-	215
Filter5 FPM	-	218
Filter Ave FPM(corr)	-	218
CFM	1600	1765

Cooking Equipment	
	Actual
Item 1	2X GRIDDLES

Completed By: Tyler Youells on 10/08/2024



National TAB

Project: 10-14-24 FREDDYS - CINNAMINSON, NJ
System/Unit: Kitchen Hood Type I



Asset: HD2

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-2	5424 ND-2
Job / Serial Num	-	6079969
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	60"	60"
Hood Width	54"	54'

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO FILTER	CAPTRATE SOLO
Filter Size 1	16X16	16X16
Filter Qty 1	3	3
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	4.86	4.86
Filter1 FPM	-	173
Filter2 FPM	-	187
Filter3 FPM	-	162
Filter Ave FPM(corr)	-	174
CFM	775	846

Cooking Equipment	
	Actual
Item 1	DOUBLE BANK FRYER

Completed By: Tyler Youells on 10/08/2024

