

Report By:

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



Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 07/26/2024

PROJECT
07-15-24 FREDDY'S - MANASSAS, VA

8074 Ashton Avenue

MANASSAS, VA 20109

Client

JRI Hospitality Management
621 Westport Blvd
Salina, KS 67401

National TAB

Project: 07-15-24 FREDDY'S - MANASSAS, VA

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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	4791	4250	4012	750	779	15.0%	16.3%						
DOAS-1	KITCHEN	2900	2279	-200	0	3100	2279	106.9%	100.0%						
KEF-1	GRIDDLE											1700	1730		
KEF-2	FRYER											775	782		
EF-1	RR													150	72
TOTALS		7900	7070	4050	4012	3850	3058			0	0	2475	2512	150	70

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3850	3058
TOTAL EXHAUST	2625	2582
NET AIRFLOW	1225	476

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.0187
SIDE	
REAR	0.0179
AVERAGE	0.0183

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:

DOAS Reduced to prevent over pressurization of the building.

Issue List

- RTU-1: Construction filters are dirty and need to be replaced
- RTU-1: Evaporator Coils are dirty



07-15-24 FREDDY'S - MANASSAS, VA

Project Issue Information

Issue Name : RTU-1: Construction filters are dirty and need to be replaced
Description : RTU-1 construction filters are dirty. Recommend installing pleated filters with a MERV rating of 8 or higher prior to store's opening.
Created By : National TAB **Assigned To :** National TAB - David Annan
Status : Open
Priority : Medium **Asset Tag :**
Originated Date : 07/28/2024 - David Annan - National TAB

Project Issue File Details



07/28/2024



07-15-24 FREDDY'S - MANASSAS, VA

Project Issue Information

Issue Name : RTU-1: Evaporator Coils are dirty
Description : RTU-1 evaporator coils are dirty. Recommend having the coils washed.
Created By : National TAB **Assigned To :** National TAB - David Annan
Status : Open
Priority : High **Asset Tag :**
Originated Date : 07/28/2024 - David Annan - National TAB

Project Issue File Details



07/28/2024



07/28/2024

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



07-15-24 FREDDY'S - MANASSAS, VA

CheckList Information

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

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 07/12/2024 - Brian Turnbough - National TAB

Completed Date : 07/15/2024 - David Annan - 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:

Yes



07-15-24 FREDDY'S - MANASSAS, VA

CheckList Information

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

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 07/12/2024 - Brian Turnbough - National TAB

Completed Date : 09/12/2024 - Dan Hertenstein - 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:

Motors are all operating below the FLA rating? Yes

Comment:

Are belts tight?

Comment:

N/A

If direct drive unit is the speed controller working.

Comment:

For restroom fan(s) is the back draft damper installed and can it fully open?

Yes

Comment:

Unit free of noticeable noise and vibration?

Yes

Comment:

HOODS

Kitchen equipment installed in proper places?

N/A

Comment:

Can kitchen equipment be turned on for final smoke test?

N/A

Comment:

DOCUMENTATION

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

N/A

Comment:



07-15-24 FREDDY'S - MANASSAS, VA

CheckList Information

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

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 07/12/2024 - Brian Turnbough - National TAB

Completed Date : 07/29/2024 - David Annan - 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 total airflow was lowered from 2870 CFM at 68 HZ to 2279 CFM at 54 HZ to reduce building pressure within tolerance and to make the kitchen have a negative net total of airflow.



07-15-24 FREDDY'S - MANASSAS, VA

CheckList Information

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

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 07/12/2024 - Brian Turnbough - National TAB

Completed Date : 07/29/2024 - David Annan - National TAB

CheckList Item Details

FINAL TESTS

HOOD CAPTURE TEST

List equipment turned on for testing

Comment:

Grill, Fryer

List smoke candle type used

Comment:

S102 45 sec emitter

Smoke test capture - Perimeter of hood

Comment:

100%

Smoke test capture - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed

07/15/2024

Comment:

TAB tech name / Firm

Comment:

David Annan/ National TAB

Site super name / Firm

Comment:

William Turner / Teel Construction

Owner representative name / Firm (if Applicable)

Comment:

NA

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

Comment:

Front: 0.0187" Back: 0.0179"

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:

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Project: 07-15-24 FREDDY'S - MANASSAS, VA

System/Unit: AHU/RTU



Asset: DOAS1

AREA:KITCHEN

Unit Data		
	Design	Actual
MFG	CARRIER	CAPTIVEAIRE
Serial Num	-	5330815
Model Num	48HCFE09	CASRTU3-I.250-18-15T
Type	DOAS	DOAS
Configuration	VERTICAL	Vertical
Num OA Filters 1	-	4
OA Filter Size 1	-	16X25X2 Mesh
Num Final Filter 1	-	8
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	Westinghouse
Frame	-	184T
Horsepower	2.00	2
Motor Rpm	-	1165
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.05

Drive Data	
	Actual
Motor Sheave Size	DD
Motor Bore Size	DD
Motor Sheave SetPt	DD
Fan Sheave Size	DD
Fan Sheave Bore	DD
Belt CL Distance	DD
Num of Belts	DD
Belt Size	DD
Belt Alignment	DD

Test Data		
	Design	Actual
SF CFM	2900	2870 / 2279
SF RPM	-	1320
RA CFM	0	0
OA CFM	2900	2870 / 2279
RL Voltage	-	204 "VFD"
RL Amperage	-	6.4 "VFD"
SF Rotation	-	CCW
SF System SetPt	-	68 HZ / 54HZ
RA Damper Position	-	0 V
Min OA Damper Position	-	10 V
Min OA Damper Type	-	OBD

Performance Data		
	Design	Actual
Fan Discharge SP	-	0.33"
Total ESP	0.500"	0.33"

General	
	Actual
Fan Rotation Correct	Yes
Unit Filters Clean	Yes
Condensate Drain Installed	Yes

Completed By: David Annan on 07/15/2024

Notes:

Unit balanced to design, then reduced to 2279 cfm to compensate for over pressurization of the building

Written By: Dan Hertenstein on 09/12/2024

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Project:07-15-24 FREDDY'S - MANASSAS, VA

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	COUNTER	SD-2	12"	300	1	257	271	271	90.3
DOAS1-SGRD2	KITCHEN	SD-3	12"	300	1	235	279	279	93.0
DOAS1-SGRD3	COUNTER	SD-2	12"	300	1	189	295	295	98.3
DOAS1-SGRD4	KITCHEN	SD-3	12"	300	1	262	288	288	96.0
DOAS1-SGRD5	KITCHEN	SD-3	12"	300	1	234	272	272	90.7
DOAS1-SGRD6	KITCHEN	SD-3	12"	300	1	282	289	289	96.3
DOAS1-SGRD7	KITCHEN	SD-3	12"	300	1	163	274	274	91.3
DOAS1-SGRD8	KITCHEN	SD-3	12"	300	1	221	267	267	89.0
DOAS1-SGRD9	KITCHEN	SD-2	12"	246	1	170	224	224	91.1
DOAS1-SGRD10	KITCHEN	SD-3	12"	300	1	97	270	270	90.0
DOAS1-SGRD11	KITCHEN	SD-4	8"	154	1	46		141	91.6
Total				3100		2156	2729	2870	92.58%

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Project: 07-15-24 FREDDY'S - MANASSAS, VA

System/Unit: AHU/RTU



Asset: RTU1

AREA: KITCHEN

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	4923P78953
Model Num	48HCFE09	48FCDN14K3M5A6U3C0
Type	RTU	RTU
Configuration	VERTICAL	Vertical
Num OA Filters 1	-	1
OA Filter Size 1	-	35X19
Num Final Filter 1	-	4
Final Filter Size 1	-	20X20X2

Motor Data		
	Design	Actual
Motor MFG	-	N/L
Frame	-	N/L
Horsepower	3	N/L
Motor Rpm	-	N/L
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	12.6

Drive Data	
	Actual
Motor Sheave Size	DD
Motor Bore Size	DD
Motor Sheave SetPt	DD
Fan Sheave Size	DD
Fan Sheave Bore	DD
Belt CL Distance	DD
Num of Belts	DD
Belt Size	DD
Belt Alignment	DD

Test Data		
	Design	Actual
SF CFM	5000	4791
SF RPM	-	2085
RA CFM	4128	4007
OA CFM	872	784
RL Voltage	-	212/211/210
RL Amperage	-	10/9.7/9.9
SF Rotation	-	CCW
RA Damper Position	-	5.70 V
Min OA Damper Position	-	4.30V
Min OA Damper Type	-	OBD
OA Enthalpy Setpt	-	ES5

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.69"
Fan Suction SP	-	-1.23"
Fan Discharge SP	-	1.04"
Total ESP	1.25"	1.73"
Fan Total SP	-	2.27"

General	
	Actual
Fan Rotation Correct	Yes
Unit Filters Clean	Yes
Condensate Drain Installed	Yes

Completed By: David Annan on 07/29/2024

Notes:

Written By: Dan Hertenstein on 09/12/2024

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Project:07-15-24 FREDDY'S - MANASSAS, VA

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	SD-1	12"	550	1	119	561	561	102.0
RTU1-SGRD2	DINING	SD-1	12"	500	1	338	511	511	102.2
RTU1-SGRD3	DINING	SD-1	12"	500	1	367	498	498	99.6
RTU1-SGRD4	DINING	SD-1	12"	550	1	201	529	529	96.2
RTU1-SGRD5	DINING	SD-1	12"	500	1	314	462	462	92.4
RTU1-SGRD6	DINING	SD-1	12"	500	1	380	473	473	94.6
RTU1-SGRD7	DINING	SD-1	12"	500	1	255	488	488	97.6
RTU1-SGRD8	DINING	SD-1	12"	500	1	289	502	502	100.4
RTU1-SGRD9	DINING	SD-1	12"	500	1	326	512	512	102.4
RTU1-SGRD10	RR VESTIBULE	SD-6	8"	150	1	169	154	154	102.7
RTU1-SGRD11	RR	SD-5	6"	50	1	72	49	49	98.0
RTU1-SGRD12	RR	SD-5	6"	50	1	68	52	52	104.0
Total				4850		2898	4791	4791	98.78%

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Project: 07-15-24 FREDDY'S - MANASSAS, VA

System/Unit: FAN - Exhaust



Asset: EF1

AREA:Men's RR

Unit Data		
	Design	Actual
MFG	COOK	BROAN
Model Num	GC-166	AE80B-B
Serial Num	-	N/L
Type	CEILING	Ceiling
Configuration	VERTICAL	Vertical

Test Data		
	Design	Actual
CFM	170	72
Fan RPM	1100	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	High Speed
RL Voltage	-	121
RL Amperage	-	0.1

Motor Data		
	Design	Actual
Motor MFG	-	BROAN
Frame	-	N/L
Horsepower	-	N/L
Motor Rpm	-	N/L
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	0.3
Service Factor	-	N/L

Completed By: David Annan on 07/15/2024

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Project: 07-15-24 FREDDY'S - MANASSAS, VA

System/Unit: FAN - Exhaust



Asset: EF2

AREA:Women's RR

Unit Data		
	Design	Actual
MFG	COOK	BROAN
Model Num	GC-166	AE80B-B
Serial Num	-	N/L
Type	CEILING	Ceiling
Configuration	VERTICAL	Vertical

Motor Data		
	Design	Actual
Motor MFG	-	BROAN
Frame	-	N/L
Horsepower	-	N/L
Motor Rpm	-	N/L
Phase	1	1
Voltage (rated)	115	120
Amperage (rated)	-	0.3
Service Factor	-	N/L

Test Data		
	Design	Actual
CFM	170	70
Fan RPM	1100	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	High Speed
RL Voltage	-	122
RL Amperage	-	0.2

Completed By: David Annan on 07/15/2024

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Project: 07-15-24 FREDDY'S - MANASSAS, VA

System/Unit: FAN - Exhaust



Asset: KEF1

AREA:GRIDDLE

Unit Data		
	Design	Actual
MFG	COOK	CAPTIVEAIRE
Model Num	GC-166	CASRE18DD
Serial Num	-	5330815
Type	UPBLAST	Upblast
Configuration	VERTICAL	Vertical

Motor Data		
	Design	Actual
Motor MFG	-	Westinghouse
Frame	-	145T
Horsepower	1.000	1
Motor Rpm	-	1150
Phase	3	3
Voltage (rated)	208	208
Amperage (rated)	-	3.8
Service Factor	-	1.0

Test Data		
	Design	Actual
CFM	1700	1730
Fan RPM	1118	1252
Fan Rotation	-	CCW
Motor RPM	-	1252
System SetPt	-	65.3 HZ
RL Voltage	-	204/204/204
RL Amperage	-	3.5 "VFD"
Total ESP	1.400"	0.94"
Fan Inlet SP	-	-0.94"
Fan Discharge SP	-	ATM

Completed By: David Annan on 07/15/2024

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Project: 07-15-24 FREDDY'S - MANASSAS, VA

System/Unit: FAN - Exhaust



Asset: KEF2

AREA:FRYER

Unit Data		
	Design	Actual
MFG	COOK	CAPTIVEAIRE
Model Num	GC-166	DU50HFA
Serial Num	-	5330815
Type	UPBLAST	Upblast
Configuration	VERTICAL	Vertical

Motor Data		
	Design	Actual
Motor MFG	-	Telco
Frame	-	N/L
Horsepower	0.500	0.50
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	6.3
Service Factor	-	N/L

Test Data		
	Design	Actual
CFM	775	782
Fan RPM	1118	1170
Fan Rotation	-	CCW
Motor RPM	-	1170
System SetPt	-	65%
RL Voltage	-	118
RL Amperage	-	1.5
Total ESP	1.250"	0.76"
Fan Inlet SP	-	-0.76"
Fan Discharge SP	-	ATM

Completed By: David Annan on 07/15/2024

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Project: 07-15-24 FREDDY'S - MANASSAS, VA
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	-	5330815
Type	TYPE 1 CANOPY	Type I
Hood length	102"	102"
Hood Width	54"	54"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO	Captrate Solo
Filter Size 1	16X16	16X16
Filter Qty 1	6	6
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	9.72	9.72
Filter1 FPM	-	166
Filter2 FPM	-	160
Filter3 FPM	-	184
Filter4 FPM	-	194
Filter5 FPM	-	192
Filter6 FPM	-	169
Filter Ave FPM(corr)	-	178
CFM	1700	1730

Cooking Equipment	
	Actual
Item 1	Griddle
Item 2	Pressure Griddle

Completed By: David Annan on 07/15/2024

Notes:

Possible leak on the grease duct. Could not locate grease doors. There is some whistling above the hood.

Written By: David Annan on 07/15/2024

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Project: 07-15-24 FREDDY'S - MANASSAS, VA

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	-	5330815
Type	TYPE 1 CANOPY	Type I
Hood length	60"	60"
Hood Width	54"	54"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO	Captrate
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	-	169
Filter2 FPM	-	161
Filter3 FPM	-	153
Filter Ave FPM(corr)	-	161
CFM	775	782

Cooking Equipment	
	Actual
Item 1	Fryer
Item 2	Fryer

Completed By: David Annan on 07/15/2024

