Report By:

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

NATIONAL TAB

Comfort. Under control.

Report: REVIVE REPORT
Function: Test, Adjust, & Balance
Date: 01/11/2023

PROJECT

12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

10030 FAIRFAX BLVD

FAIRFAX, VA 22030

Client

JRI Hospitality Management
621 Westport Blvd

Salina, KS 67401

National TAB

Project: 12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

Table Of Contents

Summary
Purpose of the visit to the Freddy's in Fairfax, VA was to address complaints of poor hood capture.

Building pressure was initially found to be negative (-0.023" wc) and approximately -2600 CFM. The outside air intakes were found to be shut.

RTU-1 (Dining) airflow was found to be at 4857 CFM which is very low (240 CFM/ton). There is a high static pressure in the return duct (-1.01" wc). The outside air damper was found shut and opening up likely increased supply airflow however did not have time to re-test.

RTU-2 (Kitchen) airflow is also low. It is operating at 2720 CFM (272 CFM/ton). There appears to be room to increase the speed however there is a high static pressure in the supply duct. Did not want to increase and cause issue by further increasing the static pressure. Increasing would also cause return air to increase which can be detrimental to hood capture. Left as is but recommend investigating the restriction in the supply duct further.

KEF-1 (Griddle exhaust) was balanced to 2317 CFM. Hood 1-A served by this fan is not in use for cooking

KEF-2 (Fryer exhaust) was balance to 1431 CFM. This is excessive for this hood and can likely be reduced closer to approximately 900 CFM for better efficiency and overall building performance. A pulley change will likely be required to reduce airflow.

MUA airflow is low for the application. Appears to be due to clogged intake air filters. Recommend thoroughly cleaning or replacing the filters. There was also one leg of voltage and amperage that was measured to be low which could be affecting the motor speed.

After balancing was completed the building pressure improved to -0.01" wc. However the net airflow is still approximately -1000 CFM. Once KEF-2 is reduced and the MUA filters are cleaned, the building pressure should be neutral to positive. Live cooking was observed and hood capture was satisfactory for both hoods.

Recommendations:

1. KEF-1, KEF-2, and MUA belts need to be changed with permanent cogged V-belts.
2. MUA mesh intake filter is clogged. Recommend cleaning/replacement
3. RTU-1 outside air filter is not installed. Recommend installing to prevent debris and animals from entering the unit.
4. RTU-2 was found with grease inside the compartment from the smoke loss. Recommend cleaning and then monitoring to make sure it does not accumulate.
5. EF-2 disconnect is hanging from the unit and not properly secured. Recommend resolving.
6. MUA has one leg of electricity that was measured to have low voltage. This can mean that there is a loose electrical connection and can degrade the performance of the motor. The rated voltage is 208V but 184V was measured on one leg inside the MUA compartment. Recommend having an electrician inspect.
7. Men's restroom exhaust fan is not running. Recommend servicing or replacement.

8. After the items above are resolved, recommend monitoring hood capture. If issue persists, National TAB will need to return to retest the deficient items.

See pictures on following pages for more details.

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12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

Project Issue Information

Issue Name : EF-1 and EF-2 should use proper COG belts

Description : EF-1 and EF-2 are running with adjustable belts. Recommend having belts replaced with proper COG belts.

Created By : National TAB **Assigned To :** National TAB - David Annan

Status : Open

Originated Date : 01/03/2023 - David Annan - National TAB

Project Issue File Details

EF_adjustablebelt.jpe...

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12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

Project Issue Information

Issue Name : EF-2 electrical disconnect is not properly secured to the unit

Description : EF-2 electrical disconnect was found hanging by the unit. The disconnect should be secured properly have maintenance re screw the disconnect to the unit.

Created By : National TAB **Assigned To :** National TAB - David Annan

Status : Open

Originated Date : 01/03/2023 - David Annan - National TAB

Project Issue File Details

EF-2_disconnect.jpeg

Comfort. Under control.

12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

Project Issue Information

Issue Name : MUA OA intake filters are dirty

Description : MUA outside wire filters are dirty. This affects airflow getting into the unit. Recommend having the filters cleaned.

Created By : National TAB **Assigned To :** National TAB - David Annan

Status : Open

Originated Date : 01/03/2023 - David Annan - National TAB

Project Issue File Details

MUA_filter.jpeg

Comfort. Under control.

12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

Project Issue Information

Issue Name : RTU-1 OA filter is not properly secured on unit

Description : RTU-1 outside air filter was found on the ground and not properly secured to the unit.

Created By : National TAB **Assigned To :** National TAB - David Annan

Status : Open

Originated Date : 01/03/2023 - David Annan - National TAB

Project Issue File Details

RTU-1_Filter.jpeg

Comfort. Under control.

12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

Project Issue Information

Issue Name : RTU-2: Grease inside filter compartment

Description : RTU-2 was found to have grease in the clean out door.

Created By : National TAB **Assigned To :** National TAB - David Annan

Status : Open

Originated Date : 01/03/2023 - David Annan - National TAB

Project Issue File Details

RTU-2_grease.jpeg

Comfort. Under control.

12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

CheckList Information

Name :	TECH - SITE PICTURES	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

RTU-1

MicrosoftTeams_image_...

RTU-2

MicrosoftTeams_image_...

EF-1

MicrosoftTeams_image_...

EF-2

MicrosoftTeams_image_...

MUA-1

MicrosoftTeams_image_...

HOOD

MicrosoftTeams_image_...

Notes/Comments :

Comfort. Under control.

12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

CheckList Information

Name :	TECH - STEP 1: INITIAL READINGS	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

INITIAL BUILDING REVIEW:	
What is the initial building pressure before making any changes?	Front: -0.0181" Side: -0.0256" Rear: -0.0247"
Are thermostats programmed?	Yes
Are building pressure relief working properly?	Yes
INITIAL AIRFLOWS:	
SUPPLY RTU-1	4857
OA RTU-1	0
SUPPLY RTU-2	2,720
OA RTU-2	0
SUPPLY RTU-3	-
OA RTU-3	-
EF-1	KEF-1 :
EF-2	KEF-2:
EF-3	EF-1: 128 CFM
EF-4	EF-2 : 164 CFM
MAU-1	1197 CFM

Notes/Comments :

Comfort. Under control.

12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

CheckList Information

Name :	TECH - STEP 2: INITIAL WALKTHROUGH	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design?	NA
All hood filters installed and accounted for?	Yes
Hoods are wired and have power?	Yes
Hood is free of alarms?	Yes
Thermostats have power?	Yes
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	Yes

Notes/Comments :

Comfort. Under control.

12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

CheckList Information

Name :	TECH - STEP 3: UNIT DATA AND EVAL	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	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
DCV Max damper opening position is set to minimum?	Yes
Free cooling enthalpy set point set for lowest setting (Typically "D")	Yes
Motors are all operating below the FLA rating?	Yes
Are belts tight?	Yes
If direct drive unit is the speed controller working.	Yes
Is gas piping installed and valves turned on?	Yes
Unit free of noticeable noise and vibration	Yes
EF's	
Rotation is correct?	Yes
Belts are tight?	Yes
Grease cup installed on hood fan?	Yes
Hinge kit installed installed on hood fan?	Yes
Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	Yes

Flex conduit is long enough so that fan can be completely tilted back?	Yes
There is no major leakage around base of fan?	No major leakage.
Is the motor operating below the motor FLA rating?	Yes
For restroom fan(s) is the back draft damper installed and can it fully open?	Yes
Unit free of noticeable noise and vibration?	KEF-2 has noticeable vibration.
MUA	
Rotation is correct?	Yes
Gas piping is installed and valves are in on position?	Yes
Heater tested and is functional?	Yes
Internal motorized damper is fully opening?	Yes
Motor is operating below the FLA rating?	Yes
Unit free of noticeable noise and vibration?	Yes
HOODS	
Kitchen equipment installed in proper places?	Yes
Can kitchen equipment be turned on for final smoke test?	Yes
DOCUMENTATION	
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	Yes

Notes/Comments :

Comfort. Under control.

12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

CheckList Information

Name :	TECH - STEP 4: TEST, ADJUST AND BALANCE	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting?	Yes
Is space comfortable in all areas?	Yes
Is the space free of ventilation noise?	Yes
If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".	NA

Notes/Comments :

Comfort. Under control.

12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

CheckList Information

Name :	TECH - STEP 5: FINAL TESTS	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

FINAL TESTS	
HOOD CAPTURE TEST	
List equipment turned on for testing	Yes
List smoke candle type used	Live cooking smoke
Smoke test capture - Perimeter of hood	100%
Smoke test capture - Top of cooking surface	100%
WITNESS	
Date test was completed	12/28/2022
TAB tech name / Firm	David Annan
Site super name / Firm	NA
Owner representative name / Firm (if Applicable)	Freddy's Kitchen staff
Building pressure at front & back doors (All Systems On)	Front: -0.00645" Rear: -0.0139"
ADDITIONAL	
Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)	NA
Thermostats are programmed?	Yes

Notes/Comments :

National TAB

Project: 12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

System/Unit: AHU/RTU

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Asset: RTU1 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	NA	Trane
Serial Num	-	16291264JA
Model Num	NA	GAC240A3EMA
Type	-	RTU
Configuration	-	Vertical
Num OA Filters 1	-	1
OA Filter Size 1	-	66X17
Num Final Filter 1	-	8
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	Marathon
Frame	-	56HZ
Horsepower	-	5
Motor Rpm	-	3450
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	13.4

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	3 7/8"
Motor Bore Size	-	7/8"
Motor Sheave SetPt	-	3 Turns out
Fan Sheave Size	-	BK140
Fan Sheave Bore	-	1 7/16"
Belt CL Distance	-	14"
Num of Belts	-	1
Belt Size	-	BX55
Belt Alignment	-	Good

Test Data		
	Design	**Actual**
SF CFM	-	4857
SF RPM	-	977
RA CFM	-	3611
OA CFM	-	1246
RL Voltage	-	209/210/208
RL Amperage	-	9.6/8.9/9.4
SF Rotation	-	CW
RA Damper Position	-	NA
Min OA Damper Position	-	4'O clock position
Min OA Damper Type	-	SBD
OA Enthalpy Setpt	-	"E"

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-1.0130"
Fan Suction SP	-	-1.2108"
Fan Discharge SP	-	0.5724"
Total ESP	-	1.585"
Fan Total SP	-	1.783"

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

Completed By: David Annan

Notes:

National TAB

Project: 12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU2 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	NA	Trane
Serial Num	-	163412948L
Model Num	NA	YSC120F3RLA1V
Type	-	RTU
Configuration	-	Vertical
Num OA Filters 1	-	1
OA Filter Size 1	-	36X15
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	N/L
Frame	-	N/L
Horsepower	-	3.80
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	8.50

Drive Data		
	Design	**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	-	2720
RA CFM	-	2364
OA CFM	-	356
RL Voltage	-	208/208/209
RL Amperage	-	1.5/1.8/1.5
SF Rotation	-	CW
RA Damper Position	-	NA
Min OA Damper Position	-	2'o clock position
Min OA Damper Type	-	SBD
OA Enthalpy Setpt	-	"E"

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.1760"
Fan Suction SP	-	-0.2688"
Fan Discharge SP	-	0.8982"

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

Completed By: Brianna Biggs

Notes:

National TAB

Project: 12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF1 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	NA
Model Num	NA	NA

Motor Data		
	Design	**Actual**

Test Data		
	Design	**Actual**

Completed By: Brianna Biggs

Notes:

National TAB

Project: 12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF2 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	NA
Model Num	NA	NA

Motor Data		
	Design	**Actual**

Test Data		
	Design	**Actual**

Completed By: Brianna Biggs

Notes:

National TAB

Project: 12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: KEF1 AREA:

Unit Data		
	Design	**Actual**
MFG	BELT	Captiveaire
Model Num	NA	NCA14FA
Serial Num	-	2931023
Type	-	Exhaust Fan
Configuration	-	Upblast

Motor Data		
	Design	**Actual**
Motor MFG	-	Weg
Frame	-	56H
Horsepower	-	1.0
Motor Rpm	-	1760
Phase	-	3
Voltage (rated)	-	208
Amperage (rated)	-	3.47
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	3 5/8"
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	2 Turns out
Fan Sheave Size	-	4 1/2"
Fan Sheave Bore	-	3/4"
Belt CL Distance	-	7 3/4"
Num of Belts	-	1
Belt Size	-	NA

Test Data		
	Design	**Actual**
CFM	-	2317
Fan RPM	-	1386
Fan Rotation	-	CCW
Motor RPM	-	1770
RL Voltage	-	208/209/208
RL Amperage	-	2.2/2.1/2.3
Suction ESP	-	-1.324"
Discharge ESP	-	ATM
Total ESP	-	1.324"

Completed By: David Annan

Notes:

National TAB

Project: 12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: KEF2 AREA:

Unit Data		
	Design	**Actual**
MFG	DIRECT	Captiveaire
Model Num	NA	NCA8FA
Serial Num	-	1512600
Type	-	Exhaust Fan
Configuration	-	Upblast

Motor Data		
	Design	**Actual**
Motor MFG	-	HSSA
Frame	-	56
Horsepower	-	3/4
Motor Rpm	-	1750
Phase	-	3
Voltage (rated)	-	115
Amperage (rated)	-	6.0
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	-	1431
Fan Rotation	-	CCW
Motor RPM	-	1786
System SetPt	-	Belt Driven
RL Voltage	-	119.1
RL Amperage	-	3.6
Total ESP	-	0.7423"
Fan Inlet SP	-	-0.7423"
Fan Discharge SP	-	ATM

Completed By: David Annan

Notes:

National TAB

Project: 12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

System/Unit: FAN - Supply

Comfort. Under control.

Asset: MUA1 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	Captiveaire
Model Num	NA	NA
Serial Num	-	NA
Type	-	MAU
Configuration	-	Vertical

Motor Data		
	Design	**Actual**
Horsepower	-	1.50
Motor Rpm	-	1720
Phase	-	3
Voltage (rated)	-	208
Amperage (rated)	-	4.70

Gas Heat		
	Design	**Actual**
Heater Operates (y/n)	-	Yes
Flame Status (pass/fail)	-	Pass
Inlet Air Temp SetPt	-	55
Discharge Air Temp SetPt	-	60

Test Data		
	Design	**Actual**
CFM	-	1197
RL Voltage	-	209/208/184.1
RL Amperage	-	3.0/2.9/

Completed By: David Annan

Notes:

National TAB

Project: 12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: HD2 AREA:

Unit Data		
	Design	**Actual**
MFG	PSP	Captiveaire
Model Num	NA	NA
Job / Serial Num	-	NA
Type	-	ACPSP
Hood length	-	52"
Hood Width	-	54"
Supply Plenum Type	-	ACPSP
Supply Plenum Width	-	12"
Supply Plenum Length	-	52"

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	Baffle
Filter Size 1	-	20X20
Filter Qty 1	-	3
Filter AK factor size 1	-	2.68
Filter Total AK Area	-	8.04
Filter1 FPM	-	161.5
Filter2 FPM	-	194.9
Filter3 FPM	-	177.7
Filter Ave FPM(corr)	-	178.03
CFM	-	1431

Cooking Equipment		
	Design	**Actual**
Item 1	-	Fryer
Item 2	-	Fryer

Test Data Supply		
	Design	**Actual**
Total AK Area	-	4.333
Kv factor (Vel)	-	0.87

Completed By: David Annan

Notes:

National TAB

Project: 12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: HD-A1 AREA:

Unit Data		
	Design	**Actual**
MFG	PSP	Captiveaire
Model Num	NA	NA
Job / Serial Num	-	NA
Type	-	ACPSP
Hood length	-	74"
Hood Width	-	42"
Supply Plenum Type	-	ACPSP
Supply Plenum Width	-	14"
Supply Plenum Length	-	74"

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	Baffle
Filter Size 1	-	20X16
Filter Size 2	-	16X16
Filter Qty 1	-	2
Filter Qty 2	-	2
Filter AK factor size 1	-	2.08
Filters AK factor size 2	-	1.62
Filter Total AK Area	-	7.4
Filter1 FPM	-	118.3
Filter2 FPM	-	166.2
Filter3 FPM	-	167.2
Filter4 FPM	-	167.7
Filter Ave FPM(corr)	-	154.85
CFM	-	1146

Cooking Equipment		
	Design	**Actual**
Item 1	-	Grill

Test Data Supply		
	Design	**Actual**
Total AK Area	-	7.194
Kv factor (Vel)	-	0.90

Completed By: David Annan

Notes: This hood is not in use for cooking. MAU reading was taken at the roof.

National TAB

Project: 12-26 FREDDY'S - FAIRFAX, VA (REVIVE)

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: HD-B1 AREA:

Unit Data		
	Design	**Actual**
MFG	PSP	Captivaire
Model Num	NA	NA
Type	-	ACPSP
Hood length	-	74"
Hood Width	-	42"
Supply Plenum Type	-	PSP
Supply Plenum Width	-	14"
Supply Plenum Length	-	74"

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	Baffle
Filter Size 1	-	16X16
Filter Size 2	-	16X20
Filter Qty 1	-	2
Filter Qty 2	-	2
Filter AK factor size 1	-	1.62
Filters AK factor size 2	-	2.08
Filter Total AK Area	-	7.4
Filter1 FPM	-	150.4
Filter2 FPM	-	166.2
Filter3 FPM	-	177.3
Filter4 FPM	-	139.1
Filter Ave FPM(corr)	-	158.25
CFM	-	1171

Cooking Equipment		
	Design	**Actual**
Item 1	-	Grill

Test Data Supply		
	Design	**Actual**
Total AK Area	-	7.194
Kv factor (Vel)	-	0.90
Num of Readings	-	NA

Completed By: David Annan

Notes: