Report By:

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

Report: PopUp Evaluation

Function: Test, Adjust, & Balance

Date: 03/19/2025

Completed By: National TAB

PROJECT

03-17-25 POPUP EVAL COLUMBUS NY, NY

388 COLUMBUS AVE

NEW YORK, NY

Client

C&T DESIGN

4025 PORT UNION RD.

FAIRFIELD, OH 45014

National TAB

Project: 03-17-25 POPUP EVAL COLUMBUS NY, NY

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Field Engineer: Ryan Smith
JOB: Pop up Bagels Evaluation
338 Columbus Ave, New York, NY 10023

FIELD ENGINEER REPORT

Facility & Daily Activity

Space is a small operational bagel facility with hard ceiling & exposed ductwork. It consists of a 1st floor area with a 10-ton indoor hanging Air Handler (HVAC) unit. The unit looks like they have exposed duct with diffusers. It also has an outside air inline supply fan that brings OA air into the unit via exterior louver. There is also an exhaust fan (EF1) that is hanging indoors in space. It has a charcoal filter system before it to help remove odor from the exhaust air before it exits the building via louver. The exhaust has a hood over the boiling pots and a grille over the ovens. The ovens also have upward exhausting cap hoods. Finally, there are two (2) small inline bathroom exhaust fans, one in each bathroom, that exhaust out a small louver.

Their cooking equipment consists of four (4) stacked electric ovens (in a 2X2 configuration) & three (3) electric induction burners that they set pots on top for boiling water. Their cooking process consists of setting frozen bagels out on racks to thaw and proof. The bagels are then boiled over the induction burners. The pots on the induction burners boil continuously throughout the day, creating steam. Once the boiling process is done, they top the bagels & then put them in the electric oven. The electric ovens radiate heat through their viewing windows, and release heat and steam when opened. The ovens also create some odors. The cooking process runs continuously throughout the day. The store is an order & take-out facility with zero (0) official seating for customers, just a few standing tables inside and outside the store.

The staff has complaints of high heat and condensation in the space. During the summer, the interior temperature of the store is frequently higher than the outdoor air temperature. Even on cold winter days, interior air temperature approaches 90 degrees Fahrenheit. In addition, condensation drips down from the AHU onto the boiler and oven area of the store in great enough quantities to require buckets and rags to be laid out.

Findings

<u>Pictures</u>
Photos have been attached below to capture the following information.

- Storefront appearance
- Layout of main cooking area
- Condition of AHU, exhaust fan, and OA fan
- Location of Thermostat

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- Condition of area above ovens & boil pots
- Location and condition of outdoor louvers
- Layout and specifications of circuit breaker panels

Employee Complaints

- Very hot in the summer. When it is 90-100F outdoors, they will leave the doors open to cool the store.
- Bakers request a consideration to blow conditioned air into the oven area.
- Significant ice buildup on refrigerant lines.
- Ductwork and AHU refrigerant line drip water depending on the humidity. On a good day it will just drip 2-3x an hour. On a bad day, they will drip continuously as if the roof was leaking during a rain shower. There is a drip tray underneath the AHU to catch water and need to lay towels on the floor and work surfaces in other locations.

Cooking Process

- Bagels are boiled before baking. Boiling pots run continuously all day long, generating constant steam. A significant portion of this steam escapes the hood.
- Ovens continuously radiate heat. Viewing window surface is more than 100F. When the oven doors open, a stream of steam exits in addition to exchanging hot air with the oven interior.
- Videos of cooking steam on Microsoft Teams

Temperature Readings

8:45AM

- Front of house 59.3F
- Back of house (by fridges) 74.5F
- Cellar 76.8F
- Next to ovens 82.5F
- Near boilers 80.3 F
- Outside temp 44.5 F
- Thermostat 87 F

11:45AM

- Front of house 67.5
- Back of house (by fridges) 77
- Cellar 79 F
- Next to ovens 86F
- Near boilers 85F
- Outside temp 50F

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- Thermostat 90 F

4:45AM (after close)
- Front of house 70.8
- Back of house (by fridges) 71
- Cellar 78.7 F
- Next to ovens 81F
- Near boilers 80F
- Outside temp 52F
- Thermostat 84 F

Building Pressure
-0.031”

Airflow & Unit Measurements
Exhaust
- Oven branch 10”X12” 699 cfm
- Trunkline 14”X16” 884 cfm
- Flow hood confirmed boiler hood is 174 cfm
- -1.03" fan suction
- 0.05" fan discharge

AHU
- Amps 2.86, 2.9, 2.97
- Volts 206.6, 207.9, 207.2
- Cabinet door is leaking at top
- MUA static pressure -0.02"
- OA + dining return 943 cfm
- Total supply 18”X24” (16”X22” internal) 2640 cfm
- Fan discharge pressure 0.062"

OA
- Traverse 14x10 300 cfm
- Fan suction -0.223"
- Fan discharge 0.28"
- Based on drilling observation, I think the duct is very dirty

Bathroom Exhausts
- 1st floor: 50 CFM
- Basement: 72 CFM

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Spatial Measurements

- Hard ceiling height is 152”
- AHU:
  - AHU bottom to floor is 114”
  - Bottom of OA duct to floor 123”
  - OA duct is 14”X10”
  - Bottom of supply duct to floor is 123”
  - Supply duct is 24”X18” exterior, internal insulation decreases interior to 22”X16”
- EXH:
  - Boiling pots hood is 48”X60”
  - Oven and hood branches to floor are 100”
  - Oven and hood branches are 12”X10”
  - Main trunkline to floor is 99” which increases to 109” which increases to 114” at outlet
  - Mina trunkline is 16”X14”
- Bathroom exhaust duct to floor is 142” above ovens. The duct then lowers to 114” to go through louver
- See picture below for more store dimensions

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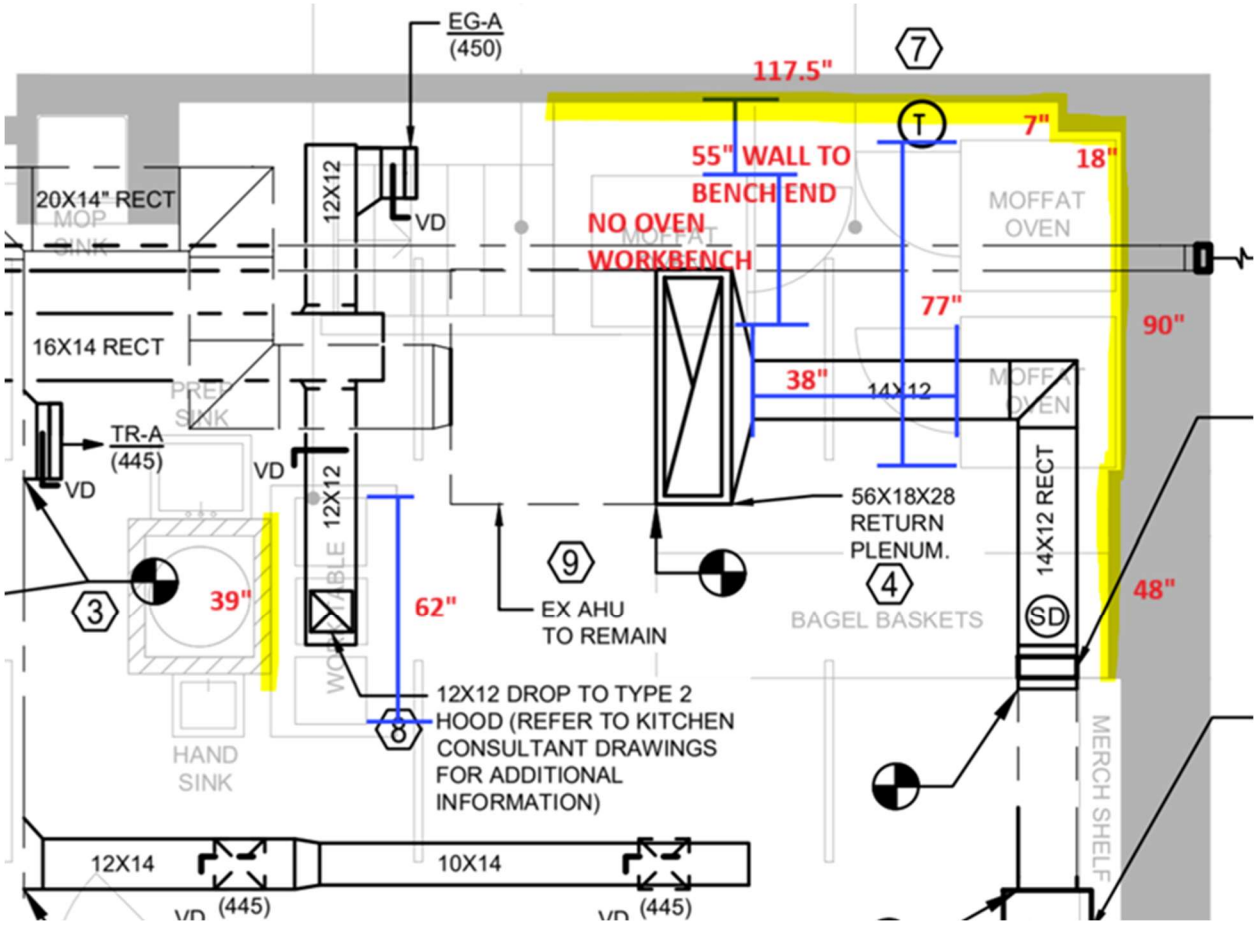

CheckList List

- Site Evaluation Pictures

03-17-25 POPUP EVAL COLUMBUS NY, NY

CheckList Information

Name :	Site Evaluation Pictures	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	03/13/2025 - Joe Hertenstein - National TAB		

CheckList Item Details

BELOW IS A VISUAL INSPECTION OF SPACE & ANY ASSETS IN SPACE

Picture of Front outside store front

Comment:

03/13/2025

03/13/2025

After entering, get a picture or two of the space. This provides a full view & understanding of the setup. So, zoom out to get as much as possible

Comment:

03/13/2025

03/13/2025

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picture of the oven area & boiling pot area

Comment:

03/13/2025

03/13/2025

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picture of the exterior louvers outside where each exhaust & outside air is provided

Comment:

03/13/2025

03/13/2025

03/13/2025

Go to electrical breaker panel(s) for the space & take picture of front of panel, then open door & take picture of breakers & then the inside cover of the door (tags)

Comment:

03/13/2025

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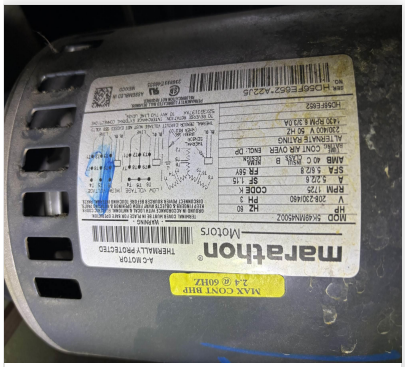
Pictures of AHU Unit

Comment:



03/21/2025

03/13/2025

03/13/2025

Picture of hood exhaust fan

Comment:

03/13/2025

03/13/2025

Pictore of Outside air Fan

Comment:

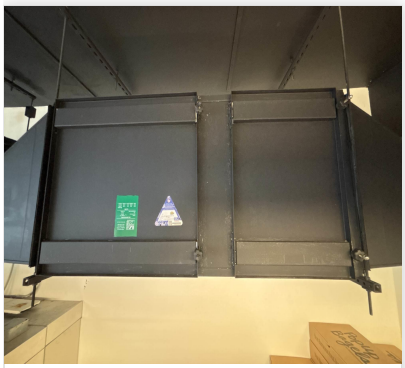
03/13/2025

03/13/2025

03/13/2025

Picture of Scrubber (Odor Control Unit) between hood & fan.

Comment:



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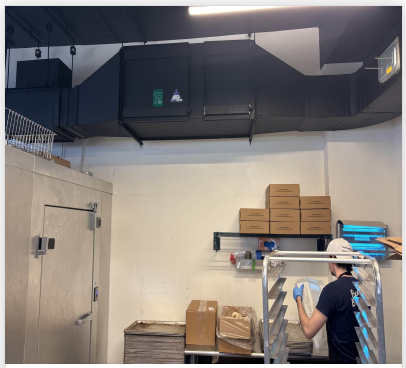

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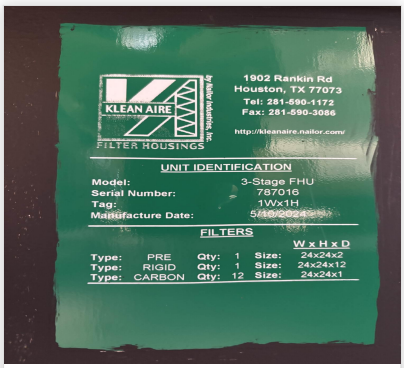

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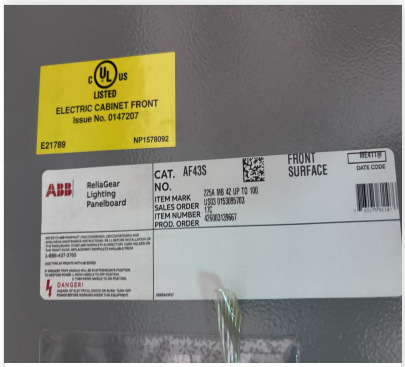
Additional Electrical pictures (labels on Panels)

Comment:



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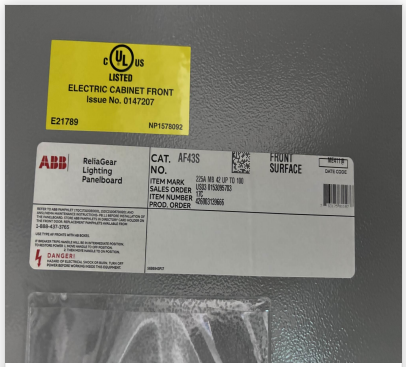

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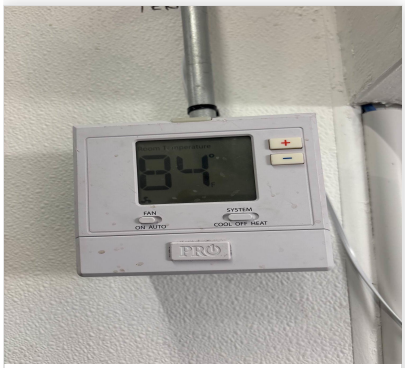
Additional pictures of AHU's, Thermostats

Comment:



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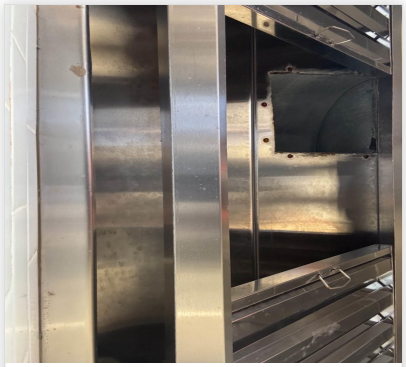
Add any pictures of any deficiencies or other visual items.

Comment:

03/13/2025



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Misc Pics (louver inlet)

Comment:

03/13/2025

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National TAB

Project: 03-17-25 POPUP EVAL COLUMBUS NY, NY

System/Unit: Heat Pump

Asset: HP1 AREA:COOKING/RETAIL

Unit Data		
	Design	**Actual**
Unit MFG	Existing	INTERNATIONAL COMFORT PRODUCTS
Model Num	Existing	FAS120MAAA0A0AA
Serial Num	-	U220900365
Type	-	HEAT PUMP
Configuration	INLINE-HORIZONTAL	INLINE-HORIZONTAL
Num Filters Size 1	-	NONE
Filter Size 1	-	NONE

Motor Data		
	Design	**Actual**
Horsepower	-	NL
Phase	-	3
Voltage	-	208
Amperage	-	5.2

Test Data		
	Design	**Actual**
SA CFM	3560	2640
RL Voltage	-	206.6/207.9/207.2
RL Amperage	-	2.86/2.9/2.97
RA CFM	2560	2340
OA CFM	1000	300

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.02"
Discharge ESP	-	0.062"
Total ESP	-	0.082"

Completed By: Ryan Smith on 03/20/2025

Notes:
Too tight to adjust motor pulley. Can swap fan pulley.

Currently, fan pulley is AK94X1 with an A41 belt. Centerline distance is 10.5" and motor pulley 4.5"

Written By: Ryan Smith on 03/20/2025

Motor Data - PHOTO LOG

03/20/2025

03/20/2025

03/20/2025

- Open IMG_0380_92864243.jpe..
- Open IMG_0380_1159234557.j..
- Open IMG_0381_203596765.jp..

National TAB

Project: 03-17-25 POPUP EVAL COLUMBUS NY, NY

System/Unit: FAN - Exhaust

Asset: EF1 AREA:COOKING EXHAUST

Unit Data		
	Design	**Actual**
MFG	Cook	Cook
Model Num	120SQN-B	120SQN-B
Serial Num	-	NA
Type	INLINE	INLINE
Configuration	HORIZONTAL	HORIZONTAL

Motor Data		
	Design	**Actual**
Horsepower	-	NA
Motor Rpm	1725	NA
Phase	1	NA
Voltage (rated)	208	NA
Amperage (rated)	-	NA

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

Test Data		
	Design	**Actual**
CFM	900	884
Fan RPM	-	NA
Fan Rotation	-	GOOD
RL Voltage	208	NA
RL Amperage	8.8	NA
Suction ESP	-	-1.03"
Discharge ESP	-	ATM
Design Total ESP	-	

Completed By: Ryan Smith on 03/14/2025

Notes:
Motor panel was cemented into duct joint. Unit, motor, and drive data not accessible.

Written By: Ryan Smith on 03/14/2025

National TAB

Project: 03-17-25 POPUP EVAL COLUMBUS NY, NY

System/Unit: FAN - Exhaust

Asset: EF2 AREA:BATHROOM

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

Test Data		
	Design	**Actual**
CFM	50	122

Motor Data		
	Design	**Actual**
Phase	-	NA
Voltage (rated)	120	NA
Amperage (rated)	-	NA

Completed By: Ryan Smith on 03/14/2025

Notes:
There are actually 2 bathrooms. One on the main floor and one in the basement office. Each has it's own in line fan that feeds into the same exhaust duct. I combined the totals from both bathrooms on the Actual Test Data.

The staff at this location informed me they are going to convert the main floor bathroom into a trash room.

Written By: Ryan Smith on 03/14/2025

National TAB

Project: 03-17-25 POPUP EVAL COLUMBUS NY, NY

System/Unit: FAN - Supply

Asset: SF1 AREA:OA FAN-AHU

Unit Data		
	Design	**Actual**
MFG	Greenheck	NA
Model Num	SQ-120-VG	NA
Serial Num	-	NA
Type	INLINE	INLINE
Configuration	HORIZONTAL	HORIZONTAL

Test Data		
	Design	**Actual**
CFM	1000	300
RL Voltage	115	120.1
RL Amperage	6.6	3.9
Total ESP	-	0.50"
Fan Discharge SP	-	0.28"

Motor Data		
	Design	**Actual**
Horsepower	-	1/3
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	4.0

Completed By: Ryan Smith on 03/20/2025

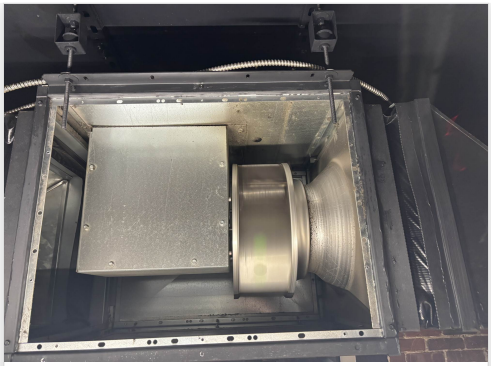
Notes:
Unit data not accessible. Possibly painted over.

After closing dining grilles OA increased to 764 CFM.

Written By: Ryan Smith on 03/20/2025

Motor Data - PHOTO LOG

03/20/2025



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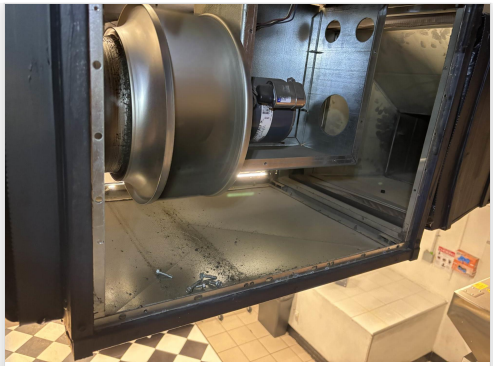

03/20/2025

National TAB

Project: 03-17-25 POPUP EVAL COLUMBUS NY, NY

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:

Unit Data		
	Design	**Actual**
MFG	HOODMART	HOODMART
Model Num	TypeII/Cond Series	TypeII/Cond Series
Job / Serial Num	-	176238
Type	Type 2 Exh Only	Type 2 Exh Only
Hood length	60	60"
Hood Width	48"	48"

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE
Filter Size 1	-	25 X 20
Filter Qty 1	-	3
Filter AK factor size 1	-	3.18
Filter Total AK Area	-	9.53
CFM	-	174

Cooking Equipment	
	Actual
Item 1	QTY (3) BOIL POTS

Completed By: Ryan Smith on 03/14/2025

Notes:
There is a gap behind the filter bottom rail, invalidating filter velocity measurements. So I removed all filters and pressed a flow hood directly onto the hood duct. Traverses of total exhaust and the oven branch validated my flow hood measurement.

Written By: Ryan Smith on 03/14/2025