THE SCHOOL BOARD OF BROWARD COUNTY, FLORIDA

ENVIRONMENTAL HEALTH & SAFETY DEPARTMENT

TELEPHONE (754) 321-4200 **FACSIMILE: (754) 321-4285**

March 20, 2017 Signature on File

For Custodial Supervisor Use Only

☐ Custodial Issues Addressed

☐ Custodial Issues Not Addressed

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TO: Janice Crosby, Principal
Flamingo Elementary

FROM: Alison Witoshynsky, Project Manager
Environmental Health & Safety Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

On March 14, 2017, I conducted an assessment at **Flamingo Elementary School.** Attached are findings and recommendations for further assessment, remediation, or corrective actions needed.

The IAQ assessment did identify one or more existing conditions impacting IAQ and has generated appropriate work orders to correct deficiencies in systems and maintenance that could contribute to decreased indoor air quality. At the time of the assessment, these concerns were not an immediate health or safety concern to building occupants. However, due to individual sensitivities and predisposing health factors, it is possible that some building occupants may elicit a health response to agents and / or conditions identified during the evaluation. Therefore, to further improve IAQ, prevent development of future IAQ-related problems, and to reduce the potential for IAQ-related complaints by building occupants, the IAQ Assessment Team recommends appropriate follow up of each item identified and listed in the attached evaluation.

Please ensure that your Head Facilities Serviceperson receives a copy of this correspondence so that the recommendations requiring their attention can be addressed. In an attempt to separate IAQ issues from general maintenance items, the attached assessment may contain direction for site based staff to generate a work order through COMPASS. Within two weeks a representative from the Custodial/Grounds Department will conduct a follow-up visit to ensure that all site based custodial issues have been appropriately addressed.

Should any questions arise, or if the current concerns continue after the attached recommendations have been addressed, please feel free to contact us at 754-321-4200.

AW:smn
Enc.

cc: Shelley Meloni, Director, Pre-Construction
Mark Dorsett, Manager, Zone 1, Physical Plant Operations Division
Broward Teachers Union
Federation of Public Employees
Gerald Devio, Supervisor II Custodial
Benjamin Osborne, Supervisor II Custodial
Mark Murray, Supervisor II Custodial
Sam Bays, Director, Maintenance Operations
Kurt Wirz, Area Manager Trades

IAQ Assessment

Flamingo Elementary | Evaluation Date: March 14, 2017 | Time of Day: 12:30

Outdoor Conditions Temperature: 75.4 | Relative Humidity: 60.3 | Ambient CO2: 447

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
100	74.8	72 - 78	43.6	30% - 60%	1019	MAX 700 > Ambient	5

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Noticeable Odor	No			
Ceiling	2' X 4' Lay in	No	No	
Walls	Drywall	No	No	
Floor	Carpet / VCT	Yes	No	carpet stained in pathways

Ceiling Clean	No	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	Yes	Inside of Supply Duct Clean	Yes	Inside of Return Duct Clean	Yes
Flooring Clean	Yes	Ceiling at Supply Grills Clean	Yes		
Room Surfaces Clean	No				

Trash Removed	Yes	Exhaust Fans Working	N/A	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	N/A	Air Fresheners in Room	No
Room Cluttered	No	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 109			Mechanical Room Clean	Yes
Filters Installed Properly	No	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	No	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Roof top	Fresh Air Intake Free of Obstruction	N/A
Pollutant Sources Near Air Intake	Not readily accessible		

Observations

School AP reports air quality concerns from staff following the delay of roof replacement.
Main office: Dust layer on upper cabinets, elevated surfaces, inside of can lights.
HVAC: Return into plenum space above ceiling tiles. Filters were recently changed, however they are not fit correctly (too long or short).

Corrective Actions to be Completed by Site Based Staff	Corrective Actions to be Completed by PPO
Clean dust from ceilings at lights & grid	Evaluate carpet for replacement
Thoroughly clean elevated surfaces	
Install proper size A/C filters	

IAQ Assessment

Flamingo Elementary | Evaluation Date: March 14, 2017 | Time of Day: 12:30

Outdoor Conditions Temperature: 75.4 | Relative Humidity: 60.3 | Ambient CO2: 447

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
116	71.2	72 - 78	48.7	30% - 60%	1060	MAX 700 > Ambient	10

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Noticeable Odor	No			
Ceiling	2' X 4' Lay in	Yes	No	1 Ceiling Panel, near return
Walls	Drywall	No	No	
Floor	Carpet	Yes	No	carpet stained at N Entrance

Ceiling Clean	No	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	Yes	Inside of Supply Duct Clean	Yes	Inside of Return Duct Clean	Yes
Flooring Clean	No	Ceiling at Supply Grills Clean	Yes		
Room Surfaces Clean	No				

Trash Removed	Yes	Exhaust Fans Working	N/A	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	N/A	Air Fresheners in Room	No
Room Cluttered	Yes	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 153			Mechanical Room Clean	Yes
Filters Installed Properly	No	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	No	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Roof top	Fresh Air Intake Free of Obstruction	N/A
Pollutant Sources Near Air Intake	Not readily accessible		

Observations

School AP reports air quality concerns from staff following the delay of roof replacement.

Media Center: Dust layer on tops of books, stained carpet. Dust on ceiling grid around lights. HVAC: Supply duct has fiberglass interior lining. Return (1) into plenum space above ceiling tiles. Filters were recently changed, however they are not fit correctly (too long or short).

Corrective Actions to be Completed by Site Based Staff

- Clean dust from ceilings at lights and grid
- Remove and replace stained ceiling tile
- If stains return, contact COMPASS for work order
- Thoroughly clean horizontal surfaces & books

Corrective Actions to be Completed by PPO

- Evaluate carpet for replacement
- Set Temperature to 72 - 78 degrees

IAQ Assessment

Flamingo Elementary | Evaluation Date: March 14, 2017 | Time of Day: 12:30

Outdoor Conditions Temperature: 75.4 | Relative Humidity: 60.3 | Ambient CO2: 447

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
122	73.3	72 - 78	43.5	30% - 60%	1031	MAX 700 > Ambient	0

Noticeable Odor: No

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Ceiling	2' X 4' Lay in	Yes	No	1 ceiling panel near ext. wall
Walls	Tack Board	No	No	
Floor	12" x 12" Vinyl	No	No	

Ceiling Clean	Yes	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	Yes	Inside of Supply Duct Clean	No	Inside of Return Duct Clean	Yes
Flooring Clean	No	Ceiling at Supply Grills Clean	No		
Room Surfaces Clean	No				

Trash Removed	Yes	Exhaust Fans Working	N/A	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	Yes	Air Fresheners in Room	No
Room Cluttered	Yes	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 109			Mechanical Room Clean	Yes
Filters Installed Properly	No	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	No	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Roof top	Fresh Air Intake Free of Obstruction	N/A
Pollutant Sources Near Air Intake	Not readily accessible		

Observations

School AP reports air quality concerns from staff following the delay of roof replacement.
Classroom: Dust layer throughout on book shelves and elevated surfaces of cabinets. HVAC: Supply ducts have fiberglass interior lining. Some of the drops have a light dust layer. Return into plenum space above ceiling tiles. Filters were recently changed, however they are not fit correctly (too long or short).

Corrective Actions to be Completed by Site Based Staff

- Clean dust from ceiling tiles or replace
- Remove and replace stained ceiling tile
- If stains return, contact COMPASS for work order
- Floor needs sweep/vacuum in tight spots
- Encourage occupant to reduce clutter to allow
- for easier cleaning by staff
- Thoroughly clean ALL surfaces
- Install proper size A/C filters

Corrective Actions to be Completed by PPO

- Evaluate/Repair HVAC & Fresh Air Intake dampers
- Ceiling tile cuts may be needed at supply vents
- Clean/Vacuum HVAC supply drops

IAQ Assessment

Flamingo Elementary | Evaluation Date: March 14, 2017 | Time of Day: 12:30

Outdoor Conditions Temperature: 75.4 | Relative Humidity: 60.3 | Ambient CO2: 447

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
127	73.5	72 - 78	46.8	30% - 60%	1071	MAX 700 > Ambient	0

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Noticeable Odor	No			
Ceiling	2' X 4' Lay in	No	No	
Walls	Tack Board	No	No	
Floor	Carpet / VCT	Yes	No	Stained area rug/carpet

Ceiling Clean	No	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	No	Inside of Supply Duct Clean	No	Inside of Return Duct Clean	N/A
Flooring Clean	Yes	Ceiling at Supply Grills Clean	No		
Room Surfaces Clean	No				

Trash Removed	No	Exhaust Fans Working	N/A	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	Yes	Air Fresheners in Room	No
Room Cluttered	Yes	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 153			Mechanical Room Clean	Yes
Filters Installed Properly	No	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	No	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Roof top	Fresh Air Intake Free of Obstruction	N/A
Pollutant Sources Near Air Intake	Not readily accessible		

Observations

School AP reports air quality concerns from staff following the delay of roof replacement. Classroom. Dust layer throughout on book shelves and elevated surfaces of cabinets. Dust layer on wood above baseboard, below tackboard wall. Bowed ceiling tiles, likely historical humidity issue. HVAC: Supply ducts have fiberglass interior lining. Some of the drops have a light dust layer. Return into plenum space above ceiling tiles. Filters were recently changed, however they are not fit correctly (too long or short).

Corrective Actions to be Completed by Site Based Staff	Corrective Actions to be Completed by PPO
Clean dust from grid & ceiling tiles or replace	Evaluate/Repair HVAC & Fresh Air Intake dampers
Floor needs sweep/vacuum in tight spots	Ceiling tile cuts may be needed at supply vents
Encourage occupant to reduce clutter to allow	Clean/Vacuum HVAC supply drops
for easier cleaning by staff	
Store items in plastic containers with lids	
Thoroughly clean ALL surfaces	
Install proper size A/C filters	
Remove and replace bowed ceiling tile	

IAQ Assessment

Flamingo Elementary | Evaluation Date: March 14, 2017 | Time of Day: 12:30

Outdoor Conditions Temperature: 75.4 | Relative Humidity: 60.3 | Ambient CO2: 447

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
129	72.4	72 - 78	46.4	30% - 60%	1032	MAX 700 > Ambient	0

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Noticeable Odor	No			
Ceiling	2' X 4' Lay in	No	No	
Walls	Tack Board	No	No	
Floor	Carpet / VCT	Yes	No	Area rug/carpet very stained

Ceiling Clean	No	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	No	Inside of Supply Duct Clean	No	Inside of Return Duct Clean	Yes
Flooring Clean	Yes	Ceiling at Supply Grills Clean	No		
Room Surfaces Clean	No				

Trash Removed	Yes	Exhaust Fans Working	N/A	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	Yes	Air Fresheners in Room	No
Room Cluttered	Yes	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 153			Mechanical Room Clean	Yes
Filters Installed Properly	No	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	No	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Roof top	Fresh Air Intake Free of Obstruction	N/A
Pollutant Sources Near Air Intake	Not readily accessible		

Observations

School AP reports air quality concerns from staff following the delay of roof replacement. Classroom. Dust layer throughout on book shelves and elevated surfaces of cabinets. Dust layer on wood above baseboard, below tackboard wall. HVAC: Supply ducts have fiberglass interior lining. Some of the drops have a dust layer. Return into plenum space above ceiling tiles. Dust on conduit in pleunum. Filters were recently changed, however they are not fit correctly (too long or short).

Corrective Actions to be Completed by Site Based Staff

- Clean dust from grid & ceiling tiles or replace
- Encourage occupant to reduce clutter to allow
- for easier cleaning by staff
- Thoroughly clean ALL surfaces
- Install proper size A/C filters
- Remove return grill and vacuum

Corrective Actions to be Completed by PPO

- Evaluate/Repair HVAC & Fresh Air Intake dampers
- Ceiling tile cuts may be needed at supply vents
- Clean/Vacuum HVAC supply drops

IAQ Assessment

Flamingo Elementary | Evaluation Date: March 14, 2017 | Time of Day: 12:30

Outdoor Conditions Temperature: 75.4 | Relative Humidity: 60.3 | Ambient CO2: 447

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
136	71.9	72 - 78	47.4	30% - 60%	942	MAX 700 > Ambient	6

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Noticeable Odor	No			
Ceiling	2' X 4' Lay in	No	No	
Walls	Plaster / Drywall	No	No	
Floor	12" x 12" Vinyl	No	No	

Ceiling Clean	Yes	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	Yes	Inside of Supply Duct Clean	Yes	Inside of Return Duct Clean	Yes
Flooring Clean	No	Ceiling at Supply Grills Clean	No		
Room Surfaces Clean	No				

Trash Removed	Yes	Exhaust Fans Working	Yes	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	Yes	Air Fresheners in Room	No
Room Cluttered	Yes	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 109			Mechanical Room Clean	Yes
Filters Installed Properly	No	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	No	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Roof top	Fresh Air Intake Free of Obstruction	N/A
Pollutant Sources Near Air Intake	Not readily accessible		

Observations

School AP reports air quality concerns from staff following the delay of roof replacement.
Art Room. Dust layer throughout on book shelves and elevated surfaces of cabinets. HVAC: Supply ducts have fiberglass interior lining. Filters were recently changed, however they are not fit correctly (too long or short).

Corrective Actions to be Completed by Site Based Staff

- Clean dust from ceiling tiles or replace
- Floor needs sweep/vacuum in tight spots
- Encourage occupant to reduce clutter to allow
- for easier cleaning by staff
- Thoroughly clean ALL surfaces
- Install proper size A/C filters

Corrective Actions to be Completed by PPO

- Evaluate/Repair HVAC & Fresh Air Intake dampers
- Set Temperature to 72 - 78 degrees
- Ceiling tile cuts may be needed at supply vents

IAQ Assessment

Flamingo Elementary | Evaluation Date: March 14, 2017 | Time of Day: 12:30

Outdoor Conditions Temperature: 75.4 | Relative Humidity: 60.3 | Ambient CO2: 447

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
140	70.6	72 - 78	50.1	30% - 60%	1063	MAX 700 > Ambient	0

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Noticeable Odor	No			
Ceiling	2' X 4' Lay in	No	No	
Walls	Tack Board	No	No	
Floor	Carpet / VCT	No	No	

Ceiling Clean	Yes	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	Yes	Inside of Supply Duct Clean	No	Inside of Return Duct Clean	Yes
Flooring Clean	No	Ceiling at Supply Grills Clean	No		
Room Surfaces Clean	No				

Trash Removed	Yes	Exhaust Fans Working	Yes	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	Yes	Air Fresheners in Room	No
Room Cluttered	Yes	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 153			Mechanical Room Clean	Yes
Filters Installed Properly	No	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	No	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Roof top	Fresh Air Intake Free of Obstruction	N/A
Pollutant Sources Near Air Intake	Not readily accessible		

Observations

School AP reports air quality concerns from staff following the delay of roof replacement.
Classroom: Dust layer throughout on book shelves and elevated surfaces of cabinets. Ceiling tiles bowed around supply grills, likely historical humidity issue. HVAC: Supply ducts have fiberglass interior lining. Some of the drops have a dust layer. Filters were recently changed, however they are not fit correctly (too long or short).

Corrective Actions to be Completed by Site Based Staff

- Clean dust from ceiling tiles or replace
- Remove and replace bowed ceiling tile
- Floor needs sweep/vacuum in tight spots
- Encourage occupant to reduce clutter to allow
- for easier cleaning by staff
- Thoroughly clean ALL surfaces
- Install proper size A/C filters

Corrective Actions to be Completed by PPO

- Evaluate/Repair HVAC & Fresh Air Intake dampers
- Set Temperature to 72 - 78 degrees
- Ceiling tile cuts may be needed at supply vents
- Clean/Vacuum HVAC supply drops

IAQ Assessment

Flamingo Elementary | Evaluation Date: March 14, 2017 | Time of Day: 12:30

Outdoor Conditions Temperature: 75.4 | Relative Humidity: 60.3 | Ambient CO2: 447

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
143	72.7	72 - 78	49.2	30% - 60%	1254	MAX 700 > Ambient	22

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Noticeable Odor	No			
Ceiling	2' X 4' Lay in	Yes	No	
Walls	Tack Board	No	No	
Floor	Carpet / VCT	No	No	

Ceiling Clean	No	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	Yes	Inside of Supply Duct Clean	No	Inside of Return Duct Clean	Yes
Flooring Clean	Yes	Ceiling at Supply Grills Clean	No		
Room Surfaces Clean	No				

Trash Removed	No	Exhaust Fans Working	Yes	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	Yes	Air Fresheners in Room	No
Room Cluttered	Yes	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 153			Mechanical Room Clean	Yes
Filters Installed Properly	No	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	No	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Roof top	Fresh Air Intake Free of Obstruction	N/A
Pollutant Sources Near Air Intake	Not readily accessible		

Observations

School AP reports air quality concerns from staff following the delay of roof replacement.
Classroom: Dust layer throughout on book shelves and elevated surfaces of cabinets. Very cluttered with personal items and other materials. HVAC: Supply ducts have fiberglass interior lining. Some of the drops have a dust layer. Filters were recently changed, however they are not fit correctly (too long or short).

Corrective Actions to be Completed by Site Based Staff

- Clean dust from grid & ceiling tiles or replace
- Floor needs sweep/vacuum in tight spots
- Encourage occupant to reduce clutter to allow
- for easier cleaning by staff
- Thoroughly clean ALL surfaces
- Install proper size A/C filters

Corrective Actions to be Completed by PPO

- Evaluate/Repair HVAC & Fresh Air Intake dampers
- Ceiling tile cuts may be needed at supply vents
- Clean/Vacuum HVAC supply drops