

THE SCHOOL BOARD OF BROWARD COUNTY, FLORIDA

ENVIRONMENTAL HEALTH & SAFETY DEPARTMENT

TELEPHONE (754) 321-4200

FACSIMILE: (754) 321-4285

December 8, 2016

Signature on File

TO: Heather DeVaughn, Principal
Manatee Bay Elementary

FROM: Robert Krickovich, Coordinator, LEA
Environmental Health & Safety Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

<u>For Custodial Supervisor Use Only</u>	
<input type="checkbox"/>	Custodial Issues Addressed
<input type="checkbox"/>	Custodial Issues Not Addressed
<hr/>	
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On December 7, 2016, I conducted an assessment at **Manatee Bay 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.

RK: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

Manatee Bay Elementary

Evaluation Date December 7, 2016

Time of Day 11:00 AM

Outdoor Conditions Temperature 75.4

Relative Humidity 98.8

Ambient CO2 592

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
133	72.4	72 - 78	72.8	30% - 60%	756	MAX 700 > Ambient	16
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> No		<input style="width: 100%;" type="text"/>	
Ceiling	<input style="width: 100%;" type="text" value="2' X 4' Lay in"/>		<input type="checkbox"/> No	<input type="checkbox"/> No	<input style="width: 100%;" type="text"/>		
Walls	<input style="width: 100%;" type="text" value="Drywall"/>		<input type="checkbox"/> No	<input type="checkbox"/> No	<input style="width: 100%;" type="text"/>		
Floor	<input 12"="" style="width: 100%;" type="text" value="12" vinyl"="" x=""/>		<input type="checkbox"/> No	<input type="checkbox"/> No	<input style="width: 100%;" type="text"/>		

Ceiling Clean	<input type="checkbox"/> Yes	HVAC Supply Grills Clean	<input type="checkbox"/> No	HVAC Return Grills Clean	<input type="checkbox"/> Yes
Walls Clean	<input type="checkbox"/> No	Inside of Supply Duct Clean	<input type="checkbox"/> Yes	Inside of Return Duct Clean	<input type="checkbox"/> No
Flooring Clean	<input type="checkbox"/> No	Ceiling at Supply Grills Clean	<input type="checkbox"/> Yes		
Room Surfaces Clean	<input type="checkbox"/> No				

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

Mechanical Equipment Location	<input style="width: 95%;" type="text" value="FISH 141"/>	Mechanical Room Clean	<input type="checkbox"/> Yes
Filters Installed Properly	<input type="checkbox"/> Yes	Filters Clean	<input type="checkbox"/> Yes
Condensate Pan Clean	<input type="checkbox"/> No	Cooling Coil Clean	<input type="checkbox"/> No
		Inside of HVAC Unit Clean	<input type="checkbox"/> No

Fresh Air Intake Location	<input style="width: 95%;" type="text" value="Roof top"/>	Fresh Air Intake Free of Obstruction	<input type="checkbox"/> Yes
Pollutant Sources Near Air Intake	<input style="width: 95%;" type="text" value="None"/>		

Observations

Musty Odor in room - Dust on surfaces, heavy on elevated surfaces - Dirt / stains on walls on and above vinyl base - Flooring dirt - Cob webs / dust on wall surfaces - Shelving dirty - HVAC supply grills dirty - Humidity elevated.

Damper rod disconnected inside of AHU #5 in room 141 - Humidity in corridors 65%

Corrective Actions to be Completed by Site Based Staff

Thoroughly clean ALL surfaces	▼
Thoroughly clean and sanitize flooring	▼
Clean dust and debris from wall surfaces	▼
Clean Supply Grills with Wexcide	▼
	▼
	▼
	▼
	▼

Corrective Actions to be Completed by PPO

Evaluate and repair HVAC system as needed	▼
Check all controls / dampers etc	▼
Repair HVAC to Reduce Humidity Levels	▼
Clean entire HVAC system - unit and drops	▼
Connect all controls in ALL HVAC equipment	▼
Repair ALL HVAC equipment entire school	▼
Humidity elevated entire school	▼
Humidity in corridors 65%	▼

IAQ Assessment

Manatee Bay Elementary

Evaluation Date December 7, 2016

Time of Day 11:00 AM

Outdoor Conditions Temperature 75.4

Relative Humidity 98.8

Ambient CO2 592

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
135	72.0	72 - 78	70.5	30% - 60%	826	MAX 700 > Ambient	18
Noticeable Odor		Yes	Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling	2' X 4' Lay in		No		Yes		4 sq ft
Walls	Drywall		No		No		
Floor	12" x 12" Vinyl		No		No		

Ceiling Clean	Yes	HVAC Supply Grills Clean	No	HVAC Return Grills Clean	Yes
Walls Clean	No	Inside of Supply Duct Clean	Yes	Inside of Return Duct Clean	No
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	No	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 141			Mechanical Room Clean	Yes
Filters Installed Properly	Yes	Filters Clean	Yes	Inside of HVAC Unit Clean	No
Condensate Pan Clean	No	Cooling Coil Clean	No		

Fresh Air Intake Location	Roof top ▼	Fresh Air Intake Free of Obstruction	Yes
Pollutant Sources Near Air Intake	None ▼		

Observations

Musty Odor in room - Dust on surfaces, heavy on elevated surfaces - Dirt / stains on walls on and above vinyl base - Flooring dirt - Cob webs / dust on wall surfaces - Shelving dirty - HVAC supply grills dirty - Ceilings at supply grills dirty, one with spotty microbial growth - Spotty microbial growth on ceiling tile at HVAC Return grill - Humidity elevated.

- Corrective Actions to be Completed by Site Based Staff**
- | | |
|---|---|
| Thoroughly clean ALL surfaces | ▼ |
| Thoroughly clean and sanitize flooring | ▼ |
| Clean dust / debris from wall surfaces | ▼ |
| Clean Supply Grills with Wexcide | ▼ |
| Clean ceilings around HVAC supply grills | ▼ |
| Replace ceiling tiles with microbial growth | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |

- Corrective Actions to be Completed by PPO**
- | | |
|---|---|
| Evaluate and repair HVAC system as needed | ▼ |
| Check all controls / dampers etc | ▼ |
| Repair HVAC to Reduce Humidity Levels | ▼ |
| Clean entire HVAC system - unit and drops | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |

IAQ Assessment

Manatee Bay Elementary

Evaluation Date December 7, 2016

Time of Day 11:00 AM

Outdoor Conditions Temperature 75.4

Relative Humidity 98.8

Ambient CO2 592

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
853	70.9	72 - 78	74.5	30% - 60%	688	MAX 700 > Ambient	3
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling		Walls		Floor			
No		No		No			
2' X 4' Lay in		No		No			
Drywall		No		No			
12" x 12" Vinyl		No		No			

Ceiling Clean	<input type="checkbox"/> Yes	HVAC Supply Grills Clean	<input type="checkbox"/> No	HVAC Return Grills Clean	<input type="checkbox"/> Yes
Walls Clean	<input type="checkbox"/> No	Inside of Supply Duct Clean	<input type="checkbox"/> Yes	Inside of Return Duct Clean	<input type="checkbox"/> No
Flooring Clean	<input type="checkbox"/> No	Ceiling at Supply Grills Clean	<input type="checkbox"/> Yes		
Room Surfaces Clean	<input type="checkbox"/> No				

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

Mechanical Equipment Location	FISH 864	Mechanical Room Clean	<input type="checkbox"/> Yes
Filters Installed Properly	<input type="checkbox"/> Yes	Filters Clean	<input type="checkbox"/> Yes
Condensate Pan Clean	<input type="checkbox"/> No	Cooling Coil Clean	<input type="checkbox"/> No
		Inside of HVAC Unit Clean	<input type="checkbox"/> No

Fresh Air Intake Location	Outside of Room	Fresh Air Intake Free of Obstruction	<input type="checkbox"/> Yes
Pollutant Sources Near Air Intake	None		

Observations

Dust on surfaces, heavy on elevated surfaces - Dirt / stains on walls on and above vinyl base - Flooring dirt - Cob webs / dust on wall surfaces - Shelving dirty - HVAC supply grills dirty - Humidity elevated.

Humidity in corridors 72%

Corrective Actions to be Completed by Site Based Staff

Thoroughly clean ALL surfaces	▼
Thoroughly clean and sanitize flooring	▼
Clean dust / debris from wall surfaces	▼
Clean Supply Grills with Wexcide	▼
Encourage occupant to reduce clutter	▼
Room to cluttered to clean properly	▼
	▼
	▼

Corrective Actions to be Completed by PPO

Evaluate and repair HVAC system as needed	▼
Repair HVAC to Reduce Humidity Levels	▼
Check all controls / dampers etc	▼
Clean entire HVAC system - unit and drops	▼
	▼
Repair ALL HVAC equipment entire school	▼
Humidity elevated entire school	▼
Humidity in corridors 72%	▼

IAQ Assessment

Manatee Bay Elementary

Evaluation Date December 7, 2016

Time of Day 11:00 AM

Outdoor Conditions Temperature 75.4

Relative Humidity 98.8

Ambient CO2 592

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
855	69.2	72 - 78	82.2	30% - 60%	663	MAX 700 > Ambient	2
Noticeable Odor		No	Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling	2' X 4' Lay in		No		No		
Walls	Drywall		No		No		
Floor	12" x 12" Vinyl		No		No		

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

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

Mechanical Equipment Location	FISH 864	Mechanical Room Clean	Yes
Filters Installed Properly	Yes	Filters Clean	Yes
Condensate Pan Clean	No	Cooling Coil Clean	No
		Inside of HVAC Unit Clean	No

Fresh Air Intake Location	Outside of Room ▼	Fresh Air Intake Free of Obstruction	Yes
Pollutant Sources Near Air Intake	None ▼		

Observations

Dust on surfaces, heavy on elevated surfaces - Dirt / stains on walls on and above vinyl base - Flooring dirt - Throw rug Dirty - Cob webs / dust on wall surfaces - Shelving dirty - HVAC supply grills dirty - HVAC return grill dirty - Exhaust fan in 855A not working - Humidity elevated.

- Corrective Actions to be Completed by Site Based Staff**
- | | |
|--|---|
| Thoroughly clean ALL surfaces | ▼ |
| Thoroughly clean and sanitize flooring | ▼ |
| Clean dust / debris from wall surfaces | ▼ |
| Clean Supply Grills with Wexcide | ▼ |
| Clean HVAC Return Grill with Wexcide | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |

- Corrective Actions to be Completed by PPO**
- | | |
|---|---|
| Evaluate and repair HVAC system as needed | ▼ |
| Repair HVAC to Reduce Humidity Levels | ▼ |
| Check all controls / dampers etc | ▼ |
| Clean entire HVAC system - unit and drops | ▼ |
| Repair exhaust fan in 855A (not working) | ▼ |
| Repair ALL HVAC equipment entire school | ▼ |
| Humidity elevated entire school | ▼ |
| | ▼ |

IAQ Assessment

Manatee Bay Elementary

Evaluation Date

Time of Day

Outdoor Conditions Temperature

Relative Humidity

Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
<input type="text" value="857"/>	<input type="text" value="69.8"/>	<input type="text" value="72 - 78"/>	<input type="text" value="92.8"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="635"/>	<input type="text" value="MAX 700 > Ambient"/>	<input type="text" value="2"/>
Noticeable Odor		<input type="text" value="No"/>	Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling	<input type="text" value="2' X 4' Lay in"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text"/>
Walls	<input type="text" value="Drywall"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text"/>
Floor	<input 12"="" type="text" value="12" vinyl"="" x=""/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text"/>

Ceiling Clean	<input type="text" value="Yes"/>	HVAC Supply Grills Clean	<input type="text" value="No"/>	HVAC Return Grills Clean	<input type="text" value="No"/>
Walls Clean	<input type="text" value="No"/>	Inside of Supply Duct Clean	<input type="text" value="Yes"/>	Inside of Return Duct Clean	<input type="text" value="No"/>
Flooring Clean	<input type="text" value="No"/>	Ceiling at Supply Grills Clean	<input type="text" value="No"/>		
Room Surfaces Clean	<input type="text" value="No"/>				

Trash Removed	<input type="text" value="Yes"/>	Exhaust Fans Working	<input type="text" value="Yes"/>	Unapproved Chemicals / Cleaners in Room	<input type="text" value="No"/>
Signs of Pests	<input type="text" value="No"/>	Drain Traps Wet	<input type="text" value="Yes"/>	Air Fresheners in Room	<input type="text" value="No"/>
Room Cluttered	<input type="text" value="Yes"/>	Food if Stored in Room is in Sealed Containers	<input type="text" value="N/A"/>		

Mechanical Equipment Location	<input type="text" value="FISH 864"/>		Mechanical Room Clean	<input type="text" value="Yes"/>	
Filters Installed Properly	<input type="text" value="Yes"/>	Filters Clean	<input type="text" value="Yes"/>	Inside of HVAC Unit Clean	<input type="text" value="No"/>
Condensate Pan Clean	<input type="text" value="No"/>	Cooling Coil Clean	<input type="text" value="No"/>		

Fresh Air Intake Location	<input type="text" value="Outside of Room"/>	Fresh Air Intake Free of Obstruction	<input type="text" value="Yes"/>
Pollutant Sources Near Air Intake	<input type="text" value="None"/>		

Observations

Dust on surfaces, heavy on elevated surfaces - Dirt / stains on walls on and above vinyl base - Flooring dirt - Throw rug Dirty - Cob webs / dust on wall surfaces - Shelving dirty - HVAC supply grills dirty - HVAC return grill dirty - Ceilings at supply grills dirty - Humidity elevated.

Corrective Actions to be Completed by Site Based Staff

Thoroughly clean ALL surfaces	▼
Thoroughly clean and sanitize flooring	▼
Clean dust / debris from wall surfaces	▼
Clean Supply Grills with Wexcide	▼
Clean ceilings around HVAC supply grills	▼
Clean HVAC Return Grill with Wexcide	▼
Encourage occupant to reduce clutter	▼
Room to cluttered to clean properly	▼

Corrective Actions to be Completed by PPO

Evaluate and repair HVAC system as needed	▼
Repair HVAC to Reduce Humidity Levels	▼
Check all controls / dampers etc	▼
Clean entire HVAC system - unit and drops	▼
	▼
Repair ALL HVAC equipment entire school	▼
Humidity elevated entire school	▼
	▼