

THE SCHOOL BOARD OF BROWARD COUNTY, FLORIDA

ENVIRONMENTAL HEALTH & SAFETY DEPARTMENT

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November 8, 2016

Signature on File

TO: Erica Levine, Intern Principal
Markham Elementary

FROM: Daniel Meyer, Project Manger
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
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On November 4, 2016, I conducted an assessment at **Markham 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.

DM: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
Rich Volpi, Supervisor II Custodial
Mark Murray, Supervisor II Custodial
Sam Bays, Director, Maintenance Operations
Kurt Wirz, Area Manager Trades

IAQ Assessment

Markham, Robert C. Elementary

Evaluation Date November 4, 2016

Time of Day 10:00 AM

Outdoor Conditions Temperature 76.8

Relative Humidity 90.2

Ambient CO2 435

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
101F	72.5	72 - 78	66.9	30% - 60%	899	MAX 700 > Ambient	2
Noticeable Odor		No	Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling	2' X 2' Lay in		Yes		No		2 tiles
Walls	Plaster		Yes		No		
Floor	Carpet		No		No		
Ceiling Clean		Yes	HVAC Supply Grills Clean		No		HVAC Return Grills Clean No
Walls Clean		Yes	Inside of Supply Duct Clean		Yes		Inside of Return Duct Clean No
Flooring Clean		Yes	Ceiling at Supply Grills Clean		Yes		
Room Surfaces Clean		Yes					
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 Yes
Room Cluttered		No	Food if Stored in Room is in Sealed Containers		N/A		
Mechanical Equipment Location			FISH #103			Mechanical Room Clean Yes	
Filters Installed Properly		Yes	Filters Clean		Yes		Inside of HVAC Unit Clean No
Condensate Pan Clean		No	Cooling Coil Clean		Yes		
Fresh Air Intake Location			Ducted to roof-top ▼			Fresh Air Intake Free of Obstruction Yes	
Pollutant Sources Near Air Intake			No ▼				

Observations

Both Supply and return grills need to be cleaned. 2 water stained tiles need to be replaced. Water / Rust stain on wall (tested dry on Protimeter). Candle on hot plate needs to be removed.

Corrective Actions to be Completed by Site Based Staff

Replace stained ceiling tiles after roofing repairs	▼
Clean Supply Grills with Wexcide	▼
Remove return grill and vacuum	▼
	▼
	▼
	▼
	▼
	▼

Corrective Actions to be Completed by PPO

Repair Cause of Stained Ceiling Tiles	▼
Clean microbial growth from inside unit	▼
Repair HVAC to Reduce Humidity Levels	▼
Clean return air ductwork	▼
	▼
	▼
	▼
	▼

IAQ Assessment

Markham, Robert C. Elementary

 Evaluation Date November 4, 2016

 Time of Day 10:00 AM

 Outdoor Conditions Temperature 76.8

 Relative Humidity 90.2

 Ambient CO2 435

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
101K	71.9	72 - 78	62.7	30% - 60%	901	MAX 700 > Ambient	4
Noticeable Odor		No	Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling	2' X 2' Lay in		Yes		No		2 tiles
Walls	Plaster		No		No		
Floor	12" x 12" Vinyl		No		No		
Ceiling Clean		Yes	HVAC Supply Grills Clean		No		HVAC Return Grills Clean No
Walls Clean		Yes	Inside of Supply Duct Clean		Yes		Inside of Return Duct Clean No
Flooring Clean		Yes	Ceiling at Supply Grills Clean		Yes		
Room Surfaces Clean		Yes					
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 #103			Mechanical Room Clean Yes	
Filters Installed Properly		Yes	Filters Clean		Yes		Inside of HVAC Unit Clean No
Condensate Pan Clean		No	Cooling Coil Clean		Yes		
Fresh Air Intake Location			Ducted to roof-top ▼			Fresh Air Intake Free of Obstruction Yes	
Pollutant Sources Near Air Intake			No ▼				

Observations

Both Supply and return grills need to be cleaned. 2 water stained tiles need to be replaced. Move file cabinets and clean area.

Corrective Actions to be Completed by Site Based Staff

Replace stained ceiling tiles after roofing repairs	▼
Clean Supply Grills with Wexcide	▼
Remove return grill and vacuum	▼
Clean behind file cabinets	▼
	▼
	▼
	▼
	▼

Corrective Actions to be Completed by PPO

Repair Cause of Stained Ceiling Tiles	▼
Clean microbial growth from inside unit	▼
Repair HVAC to Reduce Humidity Levels	▼
Clean return air ductwork	▼
	▼
	▼
	▼
	▼

IAQ Assessment

Markham, Robert C. 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="104D"/>	<input type="text" value="71.6"/>	<input type="text" value="72 - 78"/>	<input type="text" value="68.6"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="901"/>	<input type="text" value="MAX 700 > Ambient"/>	<input type="text" value="3"/>
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 2' Lay in"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text"/>
Walls	<input type="text" value="Plaster"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text"/>
Floor	<input type="text" value="Carpet"/>		<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="Yes"/>	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="N/A"/>	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="N/A"/>	Air Fresheners in Room	<input type="text" value="No"/>
Room Cluttered	<input type="text" value="No"/>	Food if Stored in Room is in Sealed Containers	<input type="text" value="N/A"/>		

Mechanical Equipment Location	<input type="text" value="FISH #103"/>		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="Yes"/>		

Fresh Air Intake Location	<input type="text" value="Ducted to roof-top"/>		Fresh Air Intake Free of Obstruction	<input type="text" value="Yes"/>
Pollutant Sources Near Air Intake	<input type="text" value="No"/>			

Observations

Both Supply and return grills need to be cleaned. Dust around supply grills. Carpet needs to be vacuumed and surfaces need to be wiped clean.

- Corrective Actions to be Completed by Site Based Staff**
- | | |
|--|---|
| Clean ceilings around HVAC supply grills | ▼ |
| Clean Supply Grills with Wexcide | ▼ |
| Remove return grill and vacuum | ▼ |
| Thoroughly Clean Classroom | ▼ |
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- Corrective Actions to be Completed by PPO**
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|---|---|
| Clean microbial growth from inside unit | ▼ |
| Repair HVAC to Reduce Humidity Levels | ▼ |
| Clean return air ductwork | ▼ |
| | ▼ |
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| | ▼ |

IAQ Assessment

Markham, Robert C. Elementary

Evaluation Date November 4, 2016

Time of Day 10:00 AM

Outdoor Conditions Temperature 76.8

Relative Humidity 90.2

Ambient CO2 435

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
206	74.2	72 - 78	66.1	30% - 60%	1051	MAX 700 > Ambient	20
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling		Walls		Floor			
No		Yes		Yes		5 tiles	
2' X 2' Lay in		No		No			
Plaster		No		No			
12" x 12" Vinyl		No		No			

Ceiling Clean	<input checked="" type="checkbox"/>	HVAC Supply Grills Clean	<input type="checkbox"/>	HVAC Return Grills Clean	<input type="checkbox"/>
Walls Clean	<input checked="" type="checkbox"/>	Inside of Supply Duct Clean	<input checked="" type="checkbox"/>	Inside of Return Duct Clean	<input checked="" type="checkbox"/>
Flooring Clean	<input checked="" type="checkbox"/>	Ceiling at Supply Grills Clean	<input type="checkbox"/>		
Room Surfaces Clean	<input checked="" type="checkbox"/>				

Trash Removed	<input checked="" type="checkbox"/>	Exhaust Fans Working	<input type="checkbox"/>	Unapproved Chemicals / Cleaners in Room	<input type="checkbox"/>
Signs of Pests	<input type="checkbox"/>	Drain Traps Wet	<input checked="" type="checkbox"/>	Air Fresheners in Room	<input type="checkbox"/>
Room Cluttered	<input type="checkbox"/>	Food if Stored in Room is in Sealed Containers	<input type="checkbox"/>		

Mechanical Equipment Location	FISH #206C	Mechanical Room Clean	<input checked="" type="checkbox"/>
Filters Installed Properly	<input checked="" type="checkbox"/>	Filters Clean	<input checked="" type="checkbox"/>
Condensate Pan Clean	<input checked="" type="checkbox"/>	Cooling Coil Clean	<input checked="" type="checkbox"/>
		Inside of HVAC Unit Clean	<input checked="" type="checkbox"/>

Fresh Air Intake Location	Ducted to roof-top	Fresh Air Intake Free of Obstruction	<input checked="" type="checkbox"/>
Pollutant Sources Near Air Intake	No		

Observations

Replace supply grill. Tiles need to be replaced by the supply grill. Tiles have microbial growth. Return ductwork dirty.

- Corrective Actions to be Completed by Site Based Staff**
- | | |
|--|---|
| Replace stained ceiling tile | ▼ |
| Clean ceilings around HVAC supply grills | ▼ |
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- Corrective Actions to be Completed by PPO**
- | | |
|---|---|
| Replace Supply grill | ▼ |
| Repair HVAC to Reduce Humidity Levels | ▼ |
| Install new ceiling tile upon repair, cuts needed | ▼ |
| Clean return air ductwork | ▼ |
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