

Aston A. Henry, Supervisor
Risk Management Department

Telephone: 754 321-1900
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September 14, 2012

Signature on File

TO: David Levine, Principal
Liberty Elementary School

FROM: Robert Krickovich, Coordinator I, LEA
Facilities Design and Construction

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

On September 10, 2012, I conducted an assessment at **Liberty 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 754-321-1907.

cc: Directors, School Performance & Accountability
Shelley Meloni, Executive Director, Facilities Design and Construction
Mark Dorsett, Manager, Zone 1, Physical Plant Operations Division
Roy Norton, Manager, Custodial/Grounds, Physical Plant Operations Division
Aston Henry, Supervisor, Risk Management
Sonja Coley, Senior Project Manager, Facilities Design and Construction
Broward Teachers Union
Federation of Public Employees

RK/tc
Enc.

IAQ Assessment

Liberty Elementary

Evaluation Date September 10, 2012

Time of Day 2:00

Outdoor Conditions Temperature 88.7 Relative Humidity 74.2 Ambient CO2 578

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
151	76.6	72 - 78	53.1	30% - 60%	803	MAX 700 > Ambient	19
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling		Walls		Floor			
No		Yes		No		1 tile @ EM exit door	
2' X 4' Lay in		Yes		No		Both sides of EM door	
Drywall		Yes		No		30 Sq Ft @ Base of EM door	
12" x 12" Vinyl		Yes		No			
Ceiling Clean		Walls Clean		Flooring Clean		Room Surfaces Clean	
Yes		Yes		Yes		Yes	
		HVAC Supply Grills Clean		HVAC Return Grills Clean			
		Yes		Yes			
		Inside of Supply Duct Clean		Inside of Return Duct Clean			
		Yes		Yes			
		Ceiling at Supply Grills Clean					
		Yes					
Trash Removed		Exhaust Fans Working		Unapproved Chemicals / Cleaners in Room			
Yes		N/A		No			
Signs of Pests		Drain Traps Wet		Air Fresheners in Room			
No		Yes		No			
Room Cluttered		Food if Stored in Room is in Sealed Containers					
No		Yes					
Mechanical Equipment Location		Filters Installed Properly		Filters Clean		Mechanical Room Clean	
		Condensate Pan Clean		Cooling Coil Clean		Inside of HVAC Unit Clean	
Fresh Air Intake Location		Pollutant Sources Near Air Intake		Fresh Air Intake Free of Obstruction			

Observations

PPO was working on site to add aluminum angle at damaged walls by exterior doors - Cause of water damage must be corrected first (crack at caulk joint exterior of building, boxes lights, etc.), windows on second floor. - Remove and replace all damaged wall material - replace damaged floor tile.

Corrective Actions to be Completed by Site Based Staff

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Corrective Actions to be Completed by PPO

Evaluate and correct cause of water intrusion	▼
Remove and replace wall material as necessary	▼
Replace damaged floor tile	▼
Evaluate and repair cause of stained ceiling tiles	▼
Remove and replace ceiling tiles	▼
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IAQ Assessment

Liberty Elementary

Evaluation Date September 10, 2012

Time of Day 2:00

Outdoor Conditions Temperature 88.7

Relative Humidity 74.2

Ambient CO2 578

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
152	75.5	72 - 78	57.4	30% - 60%	792	MAX 700 > Ambient	18
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling		Walls		Floor			
No		2' X 4' Lay in		Drywall		12" x 12" Vinyl	
No		No		Yes		No	
No		Yes		Yes		No	
No		No		No		No	
No		Yes		Yes		No	
No		Yes		Yes		No	
No		Yes		Yes		No	
No		Yes		Yes		No	
No		Yes		Yes		No	
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No		Yes		Yes		No	
No		Yes		Yes		No	
No							

IAQ Assessment

Liberty Elementary

Evaluation Date September 10, 2012

Time of Day 2:00

Outdoor Conditions Temperature 88.7

Relative Humidity 74.2

Ambient CO2 578

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
155	75.5	72 - 78	65.0	30% - 60%	1047	MAX 700 > Ambient	20
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling		Walls		Floor			
No		2' X 4' Lay in		Drywall		12" x 12" Vinyl	
No		No		Yes		Yes	
No		Yes		No		See Below	
No		Yes		No		30 Sq Ft @ Base of EM door	
Ceiling Clean		Walls Clean		Flooring Clean		Room Surfaces Clean	
Yes		Yes		Yes		Yes	
		HVAC Supply Grills Clean		Inside of Supply Duct Clean		Ceiling at Supply Grills Clean	
		Yes		Yes		Yes	
		HVAC Return Grills Clean		Inside of Return Duct Clean			
		Yes		Yes			
Trash Removed		Signs of Pests		Room Cluttered		Exhaust Fans Working	
Yes		No		No		N/A	
						Drain Traps Wet	
						Yes	
						Food if Stored in Room is in Sealed Containers	
						Yes	
						Unapproved Chemicals / Cleaners in Room	
						No	
						Air Fresheners in Room	
						No	
Mechanical Equipment Location		Filters Installed Properly		Condensate Pan Clean		Mechanical Room Clean	
		Filters Clean		Cooling Coil Clean		Inside of HVAC Unit Clean	
Fresh Air Intake Location		Pollutant Sources Near Air Intake				Fresh Air Intake Free of Obstruction	

Observations

PPO was working on site to add aluminum angle at damaged walls by exterior doors - Cause of water damage must be corrected first (crack at caulk joint exterior of building, boxes lights, etc.), windows on second floor. - Remove and replace all damaged wall material - replace damaged floor tile. - Visible microbial growth on wall where hood fan over stove was removed, vent was not sealed properly allowing air to flow down vent into room causing microbial growth on wall.

Corrective Actions to be Completed by Site Based Staff

Clean microbial growth from wall over stove	▼
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Corrective Actions to be Completed by PPO

Evaluate and correct cause of water intrusion	▼
Remove and replace wall material as necessary	▼
Replace damaged floor tile	▼
Seal old hood vent properly or remove vent	▼
Repair damaged wall over stove	▼
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IAQ Assessment

Liberty Elementary

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Time of Day 2:00

Outdoor Conditions Temperature 88.7

Relative Humidity 74.2

Ambient CO2 578

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
156	76.2	72 - 78	59.5	30% - 60%	853	MAX 700 > Ambient	21
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		No		No			
Ceiling	2' X 4' Lay in		No	No			
Walls	Drywall		Yes	Yes	See Below		
Floor	12" x 12" Vinyl		Yes	No	30 Sq Ft @ Base of EM door		

Ceiling Clean	<input checked="" type="checkbox"/>	HVAC Supply Grills Clean	<input checked="" type="checkbox"/>	HVAC Return Grills Clean	<input checked="" 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 checked="" type="checkbox"/>		
Room Surfaces Clean	<input checked="" type="checkbox"/>				

Trash Removed	<input checked="" type="checkbox"/>	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 checked="" 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 checked="" type="checkbox"/> Yes		

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

Fresh Air Intake Location	 ▼	Fresh Air Intake Free of Obstruction	<input type="checkbox"/>
Pollutant Sources Near Air Intake	 ▼		

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PPO was working on site to add aluminum angle at damaged walls by exterior doors - Cause of water damage must be corrected first (crack at caulk joint exterior of building, boxes lights, etc.), windows on second floor. - Remove and replace all damaged wall material - replace damaged floor tile. - Visible microbial growth on wall where hood fan over stove was removed, vent was not sealed properly allowing air to flow down vent into room causing microbial growth on wall.

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Relative Humidity 74.2

Ambient CO2 578

Fish	Temperature	Range	Relative Humidity	Range	CO ²	Range	# Occupants
159	75.9	72 - 78	62.3	30% - 60%	835	MAX 700 > Ambient	20
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling		Walls		Floor			
No		2' X 4' Lay in		Drywall		12" x 12" Vinyl	
No		No		Yes		No	
See Below		30 Sq Ft @ Base of EM door					
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	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	Yes	Air Fresheners in Room	No		
Room Cluttered	No	Food if Stored in Room is in Sealed Containers	Yes				
Mechanical Equipment Location						Mechanical Room Clean	
Filters Installed Properly		Filters Clean		Inside of HVAC Unit Clean			
Condensate Pan Clean		Cooling Coil Clean					
Fresh Air Intake Location						Fresh Air Intake Free of Obstruction	
Pollutant Sources Near Air Intake							

Observations

PPO was working on site to add aluminum angle at damaged walls by exterior doors - Cause of water damage must be corrected first (crack at caulk joint exterior of building, boxes lights, etc.), windows on second floor. - Remove and replace all damaged wall material - replace damaged floor tile. - Visible microbial growth on wall where hood fan over stove was removed, vent was not sealed properly allowing air to flow down vent into room causing microbial growth on wall.

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Clean microbial growth from wall over stove	▼
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Corrective Actions to be Completed by PPO

Evaluate and correct cause of water intrusion	▼
Remove and replace wall material as necessary	▼
Replace damaged floor tile	▼
Seal old hood vent properly or remove vent	▼
Repair damaged wall over stove	▼
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