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Risk Management Department

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November 10, 2009

Signature on File

TO: Mr. Erik Anderson, Principal
Tropical Elementary School

FROM: Robert Krickovich, Coordinator, LEA
Facilities and Construction Management

SUBJECT: Indoor Air Quality (IAQ) Assessment
FISH 154A, 154B, 154C, 155, 155A and 157

For Custodial Supervisor Use Only	
<input type="checkbox"/>	Custodial Issues Addressed
<input type="checkbox"/>	Custodial Issues Not Addressed

On October 20, 2009 I conducted an assessment of FISH 154A, 154B, 154C, 155, 155A and 157 at **Tropical Elementary School**. This evaluation included observations of the flooring system, ceiling tiles, false ceiling plenum, environmental surfaces, interior and exterior walls, and the accessible ventilation equipment. Additionally, environmental parameter measurements were taken to include temperature, relative humidity, and carbon dioxide. The detailed findings, along with the recommended corrective action can be found on the attached IAQ Assessment Worksheets.

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 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 me at 754-321-1638.

cc: Dr. Leontine Butler, Area Superintendent
Jan Beal, Area Director
Jeffrey S. Moquin, Executive Director, Support Operations
Aston Henry, Supervisor, Risk Management
Frank Alfieri, Project Manager, Facilities and Construction Management
Diane Watts, Broward Teachers Union
Roy Jarrett, Federation of Public Employees
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division

RK/tc
Enc.

IAQ Assessment

Location Number 0731

Tropical Elementary School

Evaluation Requested October 8, 2009

Time of Day 9:30 am

Evaluation Date October 20, 2009

Outdoor Conditions Temperature 71.5 Relative Humidity 72.4 Ambient CO2 203

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
154A	73.7	72 - 78	62.9	30% - 60%	230	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Yes		No		No		None	
Ceiling Type	Plaster		No	No	None		
Wall Type	Concrete Block		No	No	None		
Flooring	Concrete		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	visible repairs noted
Walls	Yes	No	No	
Flooring	Yes	No	No	
HVAC Supply Grills				N/A
HVAC Return Grills				N/A
Ceiling at Supply Grills				N/A
Surfaces in Room	Yes	No	No	

Observations

Findings: (exterior storage area)

- Odor in room is from the off gassing of the rubber balls and playground equipment stored in room
- 4" air vent penetrates the roof and enters the storage room. Roofing project is in progress.
- No HVAC system servicing this room and exterior door is not louvered
- **Visible repair work on plaster ceiling**

Site Based Maintenance:

- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations and Facilities and Construction Management:

- PPO evaluate exhaust pipe in room and determine whether to add fresh air damper/HVAC or exhaust fan or remove exhaust pipe. Coordinate efforts with FCM Project Manager and verify scope of upcoming renovation project in the area.

IAQ Assessment

Location Number 0731
 Evaluation Requested October 8, 2009
 Evaluation Date October 20, 2009

Tropical Elementary School

Time of Day 9:30 am

Outdoor Conditions Temperature 71.5 Relative Humidity 72.4 Ambient CO2 203

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
154B	73.4	72 - 78	71.4	30% - 60%	256	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		No		No		None	
Ceiling Type	Plaster		No	No	None		
Wall Type	Concrete Block		No	No	None		
Flooring	Concrete		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	visible repairs noted
Walls	Yes	No	No	
Flooring	Yes	No	No	
HVAC Supply Grills				N/A
HVAC Return Grills				N/A
Ceiling at Supply Grills				N/A
Surfaces in Room	Yes	No	No	

Observations

Findings: (exterior storage area)

- 4" air vent penetrates the roof and enters the storage room. Roofing project is in progress.
- No HVAC system servicing this room and exterior door is not louvered
- **Visible repair work on plaster ceiling**

Site Based Maintenance:

- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations and Facilities and Construction Management:

- PPO evaluate exhaust pipe in room and determine whether to add fresh air damper/HVAC or exhaust fan or remove exhaust pipe. Coordinate efforts with FCM Project Manager and verify scope of upcoming renovation project in the area.

IAQ Assessment

Location Number 0731

Tropical Elementary School

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Evaluation Date October 20, 2009

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
154C	73.7	72 - 78	60.6	30% - 60%	551	Max 700 > Ambient	2
Noticeable Odor		Yes	Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	Drywall		Yes	No	10 square feet		
Wall Type	Concrete Block		No	No	None		
Flooring	12 x 12 Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Wipe down with Wexcide disinfectant
Walls	No	Yes	Yes	Clean as appropriate
Flooring	No	Yes	Yes	Clean as appropriate
HVAC Supply Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A
HVAC Return Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A
Ceiling at Supply Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A
Surfaces in Room	Yes	No	No	

Observations

Findings: (interior storage area)

- 4" air vent penetrates the roof and enters the storage room. Roofing project is in progress.
- No HVAC system servicing this room and door to hallway is not louvered
- **Visible microbial growth on ceiling. Apparent roof leak at roof transition which will be repaired with roofing project.**
- **Dust and debris on floor**

Site Based Maintenance:

- Wipe down walls and ceiling with Wexcide disinfectant solution. Generate a work order through COMPASS to have room repainted after wipe down.
- Clean and sanitize floor
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations and Facilities and Construction Management:

- PPO evaluate exhaust pipe in room and determine whether to add fresh air damper/HVAC or exhaust fan or remove exhaust pipe. Coordinate efforts with FCM Project Manager and verify scope of upcoming renovation project in the area.

IAQ Assessment

Location Number 0731

Tropical Elementary School

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Outdoor Conditions Temperature 71.5 Relative Humidity 72.4 Ambient CO2 203

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
155	73.5	72 - 78	57.8	30% - 60%	470	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Wall Type		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Flooring		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	
Walls	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	
Flooring	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	
HVAC Supply Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A
HVAC Return Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A
Ceiling at Supply Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A
Surfaces in Room	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	

Observations

Findings: (interior storage area)

- Roofing project is in progress.
- No HVAC system servicing this room and door to hallway is not louvered
- One exhaust fan is operational and there is one door grill entering FISH 155A

Site Based Maintenance:

- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations and Facilities and Construction Management:

- PPO evaluate and determine whether to add fresh air damper/HVAC or exhaust fan. Coordinate efforts with FCM Project Manager and verify scope of upcoming renovation project in the area.

IAQ Assessment

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
155A	73.8	72 - 78	59.4	30% - 60%	478	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		No		No		None	
Ceiling Type	2 x 4 Lay In		No	No	None		
Wall Type	Drywall		No	No	None		
Flooring	12 x 12 Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	Yes	No	No	
Flooring	Yes	No	No	
HVAC Supply Grills	Yes	No	No	
HVAC Return Grills				N/A
Ceiling at Supply Grills				N/A
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Roofing project is in progress.
- No return grill in room and one supply grill. The door grill entering FISH 155 does not appear to be a return.

Site Based Maintenance:

- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations and Facilities and Construction Management:

- PPO to evaluate HVAC system for proper operation and repair as appropriate. Coordinate efforts with FCM Project Manager and verify scope of upcoming renovation project in the area.

IAQ Assessment

Location Number 0731

Tropical Elementary School

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Time of Day 9:30 am

Evaluation Date October 20, 2009

Outdoor Conditions Temperature 71.5 Relative Humidity 72.4 Ambient CO2 203

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
157	73.6	72 - 78	58.3	30% - 60%	474	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		No		No		None	
Ceiling Type	2 x 4 Lay In		No	No	None		
Wall Type	Drywall		No	No	None		
Flooring	12 x 12 Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	Yes	No	No	
Flooring	Yes	No	No	
HVAC Supply Grills	Yes	No	No	Exhaust fan grill in place of supply grill
HVAC Return Grills				N/A
Ceiling at Supply Grills				N/A
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Roofing project is in progress.
- No return grill in room and one make shift supply grill.

Site Based Maintenance:

- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations and Facilities and Construction Management:

- PPO to evaluate HVAC system for proper operation and repair as appropriate. Coordinate efforts with FCM Project Manager and verify scope of upcoming renovation project in the area.