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November 21, 2005

Signature on File

TO: Ms. Gladys F. Donovan, Principal
Driftwood Elementary School

FROM: Robert J. Krickovich, Coordinator, LEA
Facilities and Construction Management, Environmental Division

SUBJECT: Indoor Air Quality (IAQ) Assessment
FISH 102, 104A, 204, 802 and 804

On November 10, 2005 the IAQ Assessment Team conducted an assessment of FISH 102, 104A, 204, 802 and 804 at **Driftwood Elementary School**. The evaluation consisted of a walkthrough of the identified areas to assess the current condition of the location with regard to indoor air quality. This assessment included observations of the carpet, floor tile, ceiling tile, interior walls, false ceiling plenum, and accessible ventilation equipment.

Attached are the findings of this assessment along with recommendations for further assessment, remediation, or corrective actions, if needed.

Generally, the IAQ Assessment did not identify any existing conditions significantly impacting IAQ and thereby presenting immediate health and safety concerns 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.

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: Sam Gregg, Area Superintendent
Margaret Underhill, Area Director
Jeffrey S. Moquin, Director, Risk Management
Bertram Lewars, Project Manager II, Facilities and Construction Management
Diane Watts, Broward Teachers Union
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division

RK/tc

IAQ Assessment

Location Number
 Evaluation Requested
 Evaluation Date

Driftwood Elementary School

Time of Day

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="102"/>	<input type="text" value="73.5"/>	<input type="text" value="72 - 78"/>	<input type="text" value="56.4"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="855"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="4"/>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<input type="text" value="No"/>		<input type="text" value="Yes"/>		<input type="text" value="No"/>		<input type="text" value="2 square feet"/>	
Ceiling Type	<input type="text" value="2 x 4 Lay In"/>		<input type="text" value="Yes"/>	<input type="text" value="No"/>		<input type="text" value="2 square feet"/>	
Wall Type	<input type="text" value="Paneling"/>		<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text" value="None"/>	
Flooring	<input type="text" value="Carpet"/>		<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text" value="None"/>	

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

Observations

Findings: (Principal's office)

- Possible roof leak as indicated by stained ceiling tiles
(Roof structure comes to a valley and the stained ceiling tiles are under the valley)
- Return air has no duct work, above drop ceiling is return air plenum

Recommendations:

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 Division:

- Evaluate for roof leak and repair as appropriate and replace stained ceiling tiles
(Roof structure comes to a valley and the stained ceiling tiles are under the valley)

Hurricane Related

IAQ Assessment

Location Number 0721
 Evaluation Requested November 10, 2005
 Evaluation Date November 10, 2005

Driftwood Elementary School

Time of Day 9:45 am

Outdoor Conditions Temperature 80.1 Relative Humidity 57.9 Ambient CO2 654

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
104A	72	72 - 78	56..4	30% - 60%	903	Max 700 > Ambient	2
Noticeable Odor	No		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	2 x 4 Lay In		Yes	Yes	2 square feet		
Wall Type	Drywall		No	No	None		
Flooring	Carpet		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	Yes	No	No	
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Possible roof leak as indicated by stained ceiling tiles
(Roof structure comes to a valley and the stained ceiling tiles are under the valley)
- Visible microbial growth on ceiling tiles and ceiling tiles are bowing
- Return air has no duct work, above drop ceiling is return air plenum

Recommendations:

Site Based Maintenance:

- Discard stained ceiling tiles
- 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 Division:

- Evaluate for roof leak and repair as appropriate and replace stained ceiling tiles
(Roof structure comes to a valley and the stained ceiling tiles are under the valley)

Hurricane Related

IAQ Assessment

Location Number 0721
 Evaluation Requested November 10, 2005
 Evaluation Date November 10, 2005

Driftwood Elementary School

Time of Day 10:15 am

Outdoor Conditions Temperature 80.1 Relative Humidity 57.9 Ambient CO2 654

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
204	72.8	72 - 78	53	30% - 60%	1605	Max 700 > Ambient	34
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		Yes		No		4 square feet	
Wall Type		Yes		No		2 square feet above drop ceiling	
Flooring		No		No		None	

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

Observations

Findings:

- Drywall under duct work is dry
- Ceiling tiles are dry but stained (Custodian states then when there is a driving rain the ceiling tiles become stained)
- Exhaust fan penetrates through exterior of wall (area under the duct work) - new shroud has been installed over exterior vent

Recommendations:

Site Based Maintenance:

- Replace stained ceiling tiles as necessary
- 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 Division:

- Evaluate caulking at exterior of building above the shroud and repair as appropriate to stop staining of ceiling tiles

Hurricane Related

IAQ Assessment

Location Number 0721
 Evaluation Requested November 10, 2005
 Evaluation Date November 10, 2005

Driftwood Elementary School

Time of Day 11:00 am

Outdoor Conditions Temperature 80.1 Relative Humidity 57.9 Ambient CO2 654

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
802	74.4	72 - 78	55.7	30% - 60%	845	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		Yes		No		2 square feet	
Wall Type		No		No		None	
Flooring		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	Yes	No	No	
Ceiling at Supply Grills	No	Yes	Yes	Clean as appropriate
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Possible roof leak as indicated by stained ceiling tiles above dry eraser board entering the hallway
- Dust and debris on ceiling at supply grills
- Minor dust and debris on elevated environmental surfaces and in corners

Recommendations:

Site Based Maintenance:

- Clean ceiling at supply grills as appropriate
- Clean elevated environmental surfaces and corners as appropriate
- 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 Division:

- Evaluate for roof leak (where the parapet meets the tile roof and roof flashing) and repair as appropriate and replace stained ceiling tiles above dry eraser board entering the hallway

Hurricane Related

IAQ Assessment

Location Number 0721
 Evaluation Requested November 10, 2005
 Evaluation Date November 10, 2005

Driftwood Elementary School

Time of Day 10:30 am

Outdoor Conditions Temperature 80.1 Relative Humidity 57.9 Ambient CO2 654

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
804	70.6	72 - 78	54.7	30% - 60%	1694	Max 700 > Ambient	24
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Yes		Yes		No		4 square feet	
Ceiling Type	2 x 4 Lay In		Yes	No	4 square feet		
Wall Type	Tackable		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	Yes	No	No	
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Possible roof leak as indicated by stained ceiling tiles above exterior door entering the hallway
- Minor dust and debris on elevated environmental surfaces

Recommendations:

Site Based Maintenance:

- Clean elevated environmental surfaces as appropriate
- 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 Division:

- Evaluate for roof leak (where the parapet meets the tile roof and roof flashing) and repair as appropriate and replace stained ceiling tiles above exterior door entering the hallway

Hurricane Related