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July 25, 2006

Signature on File

TO: Ms. Julie Gittelman, Principal
Plantation Park Elementary School

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

SUBJECT: Indoor Air Quality (IAQ) Assessment
FISH 107A, 112B, 752 and 754

On June 2, 2006 I conducted a complete walkthrough of Plantation Park Elementary as requested by the Project Manager and Principal to address the schools concerns of IAQ issues caused by numerous roof leaks. At the time of the assessment 59 separate areas of water intrusion were identified (see attached document). The Project Manager should perform a complete walkthrough of the facility as the issues identified pertain to leaks that are a result of an ongoing roofing project and are not an IAQ issue. The Project Manager should ensure that all water damaged areas are repaired by the roofing contractor to prevent the water intrusion from becoming an IAQ issue.

During the walkthrough IAQ issues not related to the roof leaks were identified in FISH 107A, 112B, 752 and 754 and an evaluation was performed on those rooms. 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.

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. Verda Farrow, Area Superintendent
Dr. Roberta Insel, Area Director
Jeffrey S. Moquin, Director, Risk Management
Angel Garcia, Project Manager, Facilities and Construction Management
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Rigo Zubizarreta, Project Manager, Facilities and Construction Management
Ralph Eckhardt, Broward Teachers Union
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division

RK/tc
Enc.

PLANTATION PARK ELEMENTARY
6/2/2006

- 101A 6 missing ceiling tiles
2 stained ceiling tiles
Water damaged duct insulation
Floor tile stained
- 101C Water stain exterior wall between window and folding wall
2 stained ceiling tiles over principal's desk
- 101K Stained ceiling tile east side of room.
- 101M 4 stained ceiling tiles
- COO4 4 missing ceiling tile – 3 stained ceiling tiles
East wall severely water stained both sides of north window
Floor tile severely water stained.
- 129 2 stained ceiling tiles east & 1 stained southwest corner.
- 128 3 stained ceiling tiles northeast corner. 1 missing ceiling tile.
- COO2 48' from east door 5 tiles missing north and west of light fixture
Duct insulation water damaged.
Wall water stained.
Roof drain above leaking from 18' across entire hall.
Staining on wall duct ins damaged.
Water damaged wall, stained ceiling tile west of corridor to 112. 8' from door of cafeteria across entire hall roof drain above 8x8 area.
3 stained tiles 14' from west door – corridor light.
- 130 East wall over clock, 2 stained ceiling tiles. Wall water stained. Roof drain above stained tile south wall 12' from east.
- 132 2 stained ceiling tiles.
- 133 2 stained ceiling tiles.
- 140 Stained ceiling tile – visible growth on tiles south of speaker 16' from north and 7' from east wall.
Stained ceiling tile SE corner & 18' from south 7' from east stained ceiling tile.
8' in from south exit doors (tile with wireless) stained tile southwest corner.
Stained ceiling tile around speaker 20 from north 7' from west.
- 140C Roof expansion over stains. 4 stained & 1 missing ceiling tile.
Exterior wall water stained.
- 140D 2 stained ceiling tiles & 1 missing ceiling tile, roof expansion above.
- 140A Stained wall and ceiling under roof expansion.

140B 2 stained ceiling tiles.

141 Water stains in light fixture @ 141A.

143 1 stained ceiling tile in southeast corner.

007 2 stained ceiling tiles at exterior wall and 1 stained ceiling tile at door to 002.

120B 2 spots water stained plaster ceiling.

120C 1 water stained plaster ceiling.

120G Plaster ceiling water stained.

122 2 stained ceiling tile & 1 stained light fixture.

123 2 stained ceiling tiles.

119 2 stained ceiling tiles.

112 21 stained ceiling tiles. Throw rug water stained/rolled up in corner of room.

112C 5 stained ceiling tiles southwest corner\wall water damaged.

112A 4 stained ceiling tiles, 3 missing ceiling tiles.

C001 3 missing ceiling tiles. 6 stained ceiling tiles. Wall water stained at 155.

C003 Stained ceiling tile and wall at center doors.

107 4 stained ceiling tiles & 1 stained light fixture.

107B 5 stained ceiling tiles.

C010 Entire east wall water stained. 7 stained ceiling tile and 6 missing ceiling tiles.

143A 2 stained ceiling tiles.

144 1 stained ceiling tile.

146 2 stained ceiling tiles.

149 5 stained ceiling tiles.

150B 2 stained ceiling tiles.

C012 1 stained ceiling tile.

154 3 stained ceiling tiles.

154A 2 stained ceiling tiles – carpet filthy.

153 2 stained ceiling tiles.

155A Filthy carpet.

155 2 stained ceiling tiles.

C013 8 stained ceiling tiles.

156 2 stained ceiling tiles.

520 2 stained ceiling tiles.

521B 1 stained ceiling tile.

519 1 stained ceiling tile. – Roof drains above.

517 2 stained ceiling tiles. – Roof drain above.

515 8 stained ceiling tiles around A/C drops.

513 Stained ceiling tile at folding wall.

514 1 stained ceiling tile at exhaust fan.

512B 1 stained ceiling tile at exhaust fan.

504 1 stained ceiling tile.

506 1 stained ceiling tile.

C016 3 stained ceiling tiles around north A/C drop.

501 2 missing ceiling tiles. Roof drain leaking – floor wet.

501A Missing ceiling tile under dryer vent pipe through roof.

IAQ Assessment

Location Number 1251
 Evaluation Requested June 1, 2006
 Evaluation Date June 2, 2006

Plantation Park Elementary School

Time of Day 9:00 am

Outdoor Conditions Temperature 87.9 Relative Humidity 61.8 Ambient CO2 433

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
107A		72 - 78		30% - 60%		Max 700 > Ambient	
Noticeable Odor	No		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	Drywall		No	Yes	See below		
Wall Type	Plaster		No	Yes	See below		
Flooring	12 x 12 Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Clean as appropriate
Walls	No	Yes	Yes	Clean as appropriate
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: Kiln Room

- Dust build up on ceiling and walls
- Visible microbial growth inside of door, on the wall and on the ceiling near the door

Recommendations:

Site Based Maintenance:

- Clean ceiling and walls to remove dust build up
- Wipe door, walls and ceiling with Wexcide disinfectant solution to remove microbial growth. Monitor location for future growth.
- 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:

- Evaluate cause of microbial growth
- Repair kiln exhaust damper and/or install ventilation to room

IAQ Assessment

Location Number 1251
 Evaluation Requested June 1, 2006
 Evaluation Date June 2, 2006

Plantation Park Elementary School

Time of Day 9:00 am

Outdoor Conditions Temperature 87.9 Relative Humidity 61.8 Ambient CO2 433

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
112B		72 - 78		30% - 60%		Max 700 > Ambient	
Noticeable Odor	No		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	2 x 4 Lay In		Yes	No	7 Ceiling Tiles		
Wall Type	Plaster		Yes	Yes	South Wall		
Flooring	12 x 12 Vinyl		Yes	No	Various		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Remove and replace ceiling tiles
Walls	No	Yes	Yes	Remove and replace wall material
Flooring	No	Yes	Yes	Clean and sanitize
HVAC Supply Grills	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills				
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- 7 stained ceiling tiles
- Dust and debris and staining on floor
- Dust build up on environmental surfaces
- South wall is severely water damaged with visible microbial growth (not related to roof project)

Recommendations:

Site Based Maintenance:

- Thoroughly clean and sanitize floor
- Thoroughly clean environmental surfaces throughout the room
- 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:

- Remove and replace damaged South wall

Project Manager - Facilities & Construction Management:

- Have roofing contractor do the following:
 - Replace all stained and water damaged ceiling tiles throughout buildings
 - Remove and replace all water damaged HVAC duct insulation
 - Clean and/or replace all water damaged walls and flooring

Note - New roof is being installed at facility. Roofing project is causing water damage to various areas of the school.

IAQ Assessment

Plantation Park Elementary School

Location Number
 Evaluation Requested
 Evaluation Date

Time of Day

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="752"/>	<input type="text"/>	<input type="text" value="72 - 78"/>	<input type="text"/>	<input type="text" value="30% - 60%"/>	<input type="text"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text"/>
Noticeable Odor	<input type="text" value="No"/>		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
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 Ceiling Tiles"/>		
Wall Type	<input type="text" value="Drywall"/>		<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="5 square feet"/>		
Flooring	<input type="text" value="12 x 12 Vinyl"/>		<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="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove and replace ceiling tiles"/>
Walls	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove and replace wall material"/>
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:

- 2 stained ceiling tiles (not related to roof project)
- South wall (right side and below clock) has visible microbial growth (not related to roof project)
- Moisture content in walls under windows
- North wall (above window) has visible microbial growth (not related to roof project)

Recommendations:

Site Based Maintenance:

- Wipe South and North wall with Wexcide disinfectant solution to remove microbial growth. Monitor location for future growth.
- 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:

- Evaluate cause of stained ceiling tiles and repair. Replace ceiling tiles as appropriate.
- Caulk/seal all windows
- Remove and replace damaged wall material under windows

IAQ Assessment

Location Number
 Evaluation Requested
 Evaluation Date

Plantation Park 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="754"/>	<input type="text"/>	<input type="text" value="72 - 78"/>	<input type="text"/>	<input type="text" value="30% - 60%"/>	<input type="text"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text"/>
Noticeable Odor	<input type="text" value="No"/>		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
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="1 Ceiling Tile"/>		
Wall Type	<input type="text" value="Drywall"/>		<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Under South Window"/>		
Flooring	<input type="text" value="12 x 12 Vinyl"/>		<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="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove and replace ceiling tile"/>
Walls	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove and replace wall material"/>
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:

- 1 stained ceiling tiles (not related to roof project)
- South wall under window has visible microbial growth (not related to roof project)
- Moisture content in walls under windows
- Exterior caulking failed around windows and reveals a band under the windows

Recommendations:

Site Based Maintenance:

- Wipe South wall with Wexcide disinfectant solution to remove microbial growth. Monitor location for future growth.
- 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:

- Evaluate cause of stained ceiling tile and repair. Replace ceiling tiles as appropriate.
- Caulk/seal all windows
- Remove and replace damaged wall material under windows