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August 15, 2006

Signature on File

TO: Ms. Maria Bach, Principal
Challenger Elementary School

FROM: Kenneth I. Partee, Project Manager, Occupational Health and Environmental
Control
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment
FISH 154, 155, 157, 159, 161 and 163

On August 11, 2006 the IAQ Assessment Team conducted an assessment of FISH 154, 155, 157, 159, 161 and 163 at **Challenger 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.

Should any questions arise, or if the current concerns continue after the attached recommendations have been addressed, please feel free to contact me at 754-321-3200.

cc: Dr. Harry LaCava, Area Superintendent
Willie Dudley, Area Director
Jeffrey S. Moquin, Director, Risk Management
Charles Ricks, Project Manager, Facilities and Construction Management
Gary Itzkowitz, Broward Teachers Union
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division
Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

KP/tc
Enc.

IAQ Assessment

Location Number
 Evaluation Requested
 Evaluation Date

Challenger 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="154"/>	<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		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<input type="text"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>	
Ceiling Type		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>	
Wall Type		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>	
Flooring		<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: Air Handler Room
 - Visible microbial growth on insulation for chilled water lines

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:
 - Evaluate cause of visible microbial growth on chilled water line insulation and repair/replace as appropriate

IAQ Assessment

Location Number
 Evaluation Requested
 Evaluation Date

Challenger 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="155"/>	<input type="text" value="70.4"/>	<input type="text" value="72 - 78"/>	<input type="text" value="55.8"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="511"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="2"/>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>	
Ceiling Type	<input type="text" value="2 x 4 Lay In"/>		<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text" value="None"/>	
Wall Type	<input type="text" value="Plaster"/>		<input type="text" value="Yes"/>	<input type="text" value="Yes"/>		<input type="text" value="2 sections 1' x 1'"/>	
Flooring	<input type="text" value="Tile"/>		<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="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
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:

- Visible microbial growth on shared door and on North wall to the left of the clock
- Humidity level was higher than outside

Recommendations:

Site Based Maintenance:

- Clean walls with Wexcide disinfectant solution
- 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 and repair cause of elevated humidity level (higher than outside). Check range hood for uncontrolled outside air.

IAQ Assessment

Location Number
 Evaluation Requested
 Evaluation Date

Challenger 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="157"/>	<input type="text" value="70.8"/>	<input type="text" value="72 - 78"/>	<input type="text" value="56.1"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="534"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="2"/>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>	
Ceiling Type	<input type="text" value="2 x 4 Lay In"/>		<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text" value="None"/>	
Wall Type	<input type="text" value="Plaster"/>		<input type="text" value="Yes"/>	<input type="text" value="Yes"/>		<input type="text" value="Various"/>	
Flooring	<input type="text" value="Tile"/>		<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="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
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:

- Visible microbial growth on wall above whiteboard (right top corner), under whiteboard (right) and next to range hood
- Visible microbial growth inside CD drive and on speakers of the center computer (row of 3)
- Humidity level was higher than outside

Recommendations:

Site Based Maintenance:

- Clean walls with Wexcide disinfectant solution
- 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 and repair cause of elevated humidity level (higher than outside)

IAQ Assessment

Location Number
 Evaluation Requested
 Evaluation Date

Challenger 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="159"/>	<input type="text" value="70.5"/>	<input type="text" value="72 - 78"/>	<input type="text" value="60.1"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="529"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="5"/>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>	
Ceiling Type	<input type="text" value="2 x 4 Lay In"/>		<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text" value="None"/>	
Wall Type	<input type="text" value="Plaster"/>		<input type="text" value="Yes"/>	<input type="text" value="Yes"/>		<input type="text" value="Various"/>	
Flooring	<input type="text" value="Tile"/>		<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="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
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="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>

Observations

Findings:

- Visible microbial growth at range hood
- Visible microbial growth on right arm of wooden rocking chair and on kindergarten furniture (stoves)
- Humidity level was higher than outside

Recommendations:

Site Based Maintenance:

- Clean wall at range hood with Wexcide disinfectant solution
- Clean furniture with Wexcide disinfectant solution
- 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 and repair cause of elevated humidity level (higher than outside)

IAQ Assessment

Location Number 3771
 Evaluation Requested August 11, 2006
 Evaluation Date August 11, 2006

Challenger Elementary School

Time of Day 2:15 pm

Outdoor Conditions Temperature 96.6 Relative Humidity 43 Ambient CO2 526

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
161	70.3	72 - 78	59.1	30% - 60%	561	Max 700 > Ambient	3
Noticeable Odor	Yes		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	2 x 4 Lay In		No	No	None		
Wall Type	Plaster		Yes	Yes	Various		
Flooring	Tile		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	No	Yes	Yes	Clean with Wexcide disinfectant
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 with Wexcide disinfectant

Observations

Findings:

- Visible microbial growth around range hood and box and on wooden stove
- Visible microbial growth on wood furniture
- Humidity level was higher than outside

Recommendations:

Site Based Maintenance:

- Clean walls with Wexcide disinfectant solution
- Clean wooden furniture with Wexcide disinfectant solution
- 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 and repair cause of elevated humidity level (higher than outside)

IAQ Assessment

Challenger 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="163"/>	<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		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>	
Wall Type		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>	
Flooring		<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: Air Handler Room

- Visible microbial growth on insulation for chilled water lines
- Dust and debris on A/C filters (AHU 1-13)

Recommendations:

Site Based Maintenance:

- Remove and replace A/C filters and tape filters together 100% of length
- 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 visible microbial growth on chilled water line insulation and repair/replace as appropriate