

# RISK MANAGEMENT...

managing risk with responsibility

Jeffrey S. Moquin, Director  
Risk Management Department

Telephone: 754-321-3200  
Facsimile: 754-321-3290

December 4, 2006

**Signature on File**

TO: Mr. Chris Carney, Principal  
**Bennett Elementary School**

FROM: Aston A. Henry, Jr., Supervisor  
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment  
**FISH 004, 004A, 301 and 307**

On November 22, 2006 I conducted an assessment of FISH 004, 004A, 301 and 307 at **Bennett 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. Verda Farrow, Area Superintendent  
Joel Herbst, Area Director  
Jeffrey S. Moquin, Director, Risk Management  
Matt Decker, Project Manager, Facilities and Construction Management  
Jerrold Neal, 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

AAH/tc  
Enc.

# IAQ Assessment

Bennett 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="004 &amp; 004A"/>	<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 &gt; Ambient"/>	<input type="text"/>
Noticeable Odor	<input type="text" value="Yes"/>		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="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>
Wall Type	<input type="text" value="Plaster"/>		<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="Yes"/>		<input type="text" value="No"/>		<input type="text" value="Entire Corridor"/>

	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="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove and replace carpet with tile"/>
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"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Observations**

**Findings: Corridor**  
 - Odor emanating from the carpet. Carpet has been cleaned several times and the odor returns.

**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:**  
 - Remove carpet in corridor 004 and 004A and replace with tile

# IAQ Assessment

Bennett Elementary School

Location Number 0201  
 Evaluation Requested November 17, 2006  
 Evaluation Date November 22, 2006

Time of Day 12:00 pm

Outdoor Conditions      Temperature 68.7      Relative Humidity 42.5      Ambient CO2 372

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
301	68.6	72 - 78	40.1	30% - 60%	552	Max 700 > Ambient	3
Noticeable Odor	No		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	2 x 4 Lay In		Yes	Yes	3 ceiling tiles		
Wall Type	Plaster		No	No	None		
Flooring	Tile		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Remove and replace ceiling tiles
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:**  
 - 3 stained ceiling tiles with visible microbial growth. Appears to be a leaking pipe within false ceiling plenum and/or possible leak from roof drain.  
 - Temperature was low at the time of the assessment

**Recommendations:**

**Site Based Maintenance:**  
 - Adjust thermostat to increase temperature  
 - 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. Evaluate pipes in false ceiling plenum and roof drain for leaks and repair as appropriate. Remove and replace stained ceiling tiles as appropriate.

# IAQ Assessment

Bennett Elementary School

Location Number 0201  
 Evaluation Requested November 17, 2006  
 Evaluation Date November 22, 2006

Time of Day 12:00 pm

Outdoor Conditions      Temperature 68.7      Relative Humidity 42.5      Ambient CO2 372

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">307</span>	<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;">Max 700 &gt; Ambient</span>	<span style="border: 1px solid black; padding: 2px;"></span>
Noticeable Odor	<span style="border: 1px solid black; padding: 2px;">Yes</span>		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	<span style="border: 1px solid black; padding: 2px;">2 x 4 Lay In</span>		<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">NONE</span>		
Wall Type	<span style="border: 1px solid black; padding: 2px;">Plaster</span>		<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">None</span>		
Flooring	<span style="border: 1px solid black; padding: 2px;">Tile</span>		<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">None</span>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<span style="border: 1px solid black; padding: 2px;"></span>
Walls	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px; text-align: center;">Clean as appropriate</span>
Flooring	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px; text-align: center;">Clean as appropriate</span>
HVAC Supply Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<span style="border: 1px solid black; padding: 2px;"></span>
HVAC Return Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<span style="border: 1px solid black; padding: 2px;"></span>
Ceiling at Supply Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<span style="border: 1px solid black; padding: 2px;"></span>
Surfaces in Room	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px; text-align: center;">Clean as appropriate</span>

**Observations**

**Findings: Custodial Storage Closet**  
 - Musty smell emanating from the closet

**Recommendations:**

**Site Based Maintenance:**  
 - Remove ALL items from the closet. Thoroughly clean the closet and all items prior to placing back into the room.  
 - Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate