

# RISK MANAGEMENT...

managing risk with responsibility

Aston A. Henry, Supervisor  
Risk Management Department

Telephone: 754 321-1900  
Fax: 754 321-1917

November 10, 2009

**Signature on File**

TO: Ms. Mary Lou Ridge, Principal  
**Bethune Elementary School**

FROM: Edward See, Project Manager  
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment  
**FISH 401A, 402, 404, 405, 406, 407, 506 and 507**

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

On October 19, 2009, I conducted an assessment of FISH 401A, 402, 404, 405, 406, 407, 506 and 507 at **Bethune 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.

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.

*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 754-321-1900.

cc: Dr. Joel Herbst, Area Superintendent  
Dr. Gina Eyerman, Area Director  
Jeffrey S. Moquin, Executive Director, Support Operations  
Aston Henry, Supervisor, Risk Management  
Robert Sharps, Project Manager, Facilities and Construction Management  
Jamie Daniels, 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  
Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

ES/tc  
Enc.

# IAQ Assessment

Location Number 0341  
 Evaluation Requested October 12, 2009  
 Evaluation Date October 19, 2009

Bethune Elementary School

Time of Day 2:30 pm

Outdoor Conditions      Temperature 81.3      Relative Humidity 55.3      Ambient CO2 399

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">401A</span>	<span style="border: 1px solid black; padding: 2px;">70.9</span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;">52.3</span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;">653</span>	<span style="border: 1px solid black; padding: 2px;">Max 700 &gt; Ambient</span>	<span style="border: 1px solid black; padding: 2px;">1</span>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<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;">No</span>		<span style="border: 1px solid black; padding: 2px;">None</span>	
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;">Drywall</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;">Carpet</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	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
Walls	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
Flooring	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
HVAC Supply Grills	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
HVAC Return Grills	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
Ceiling at Supply Grills	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
Surfaces in Room	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>

## Observations

**Findings:**

- HFSP advised that chiller was down and is currently being repaired by PPO
- Temperature was low at the time of the assessment
- Non-approved chemicals in room (incense and Glade) and 2 potted plants in room

**Site Based Maintenance:**

- Adjust thermostat, or contact EMS, to increase temperature
- Remove non-approved chemicals (incense and Glade) and potted plant. Soil is a source of microbial growth.
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

# IAQ Assessment

Location Number 0341  
 Evaluation Requested October 12, 2009  
 Evaluation Date October 19, 2009

Bethune Elementary School

Time of Day 2:30 pm

Outdoor Conditions      Temperature 81.3      Relative Humidity 55.3      Ambient CO2 399

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">402</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;">No</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;">Drywall</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;">Carpet</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	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
Walls	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
Flooring	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
HVAC Supply Grills	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
HVAC Return Grills	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
Ceiling at Supply Grills	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>
Surfaces in Room	<span style="border: 1px solid black; padding: 2px;">Yes</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;"></span>

**Observations**

**Findings:**

- HFSP advised that chiller was down and is currently being repaired by PPO
- Used light bulbs being stored in room

**Site Based Maintenance:**

- Remove light bulbs and place in storage
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

# IAQ Assessment

Location Number 0341

Bethune Elementary School

Evaluation Requested October 12, 2009

Time of Day 2:30 pm

Evaluation Date October 19, 2009

Outdoor Conditions      Temperature 81.3      Relative Humidity 55.3      Ambient CO2 399

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
404	71.4	72 - 78	48.5	30% - 60%	508	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		No		No		None	
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	Yes	No	No	
Surfaces in Room	Yes	No	No	

**Observations**

**Findings:**

- HFSP advised that chiller was down and is currently being repaired by PPO
- Temperature was low at the time of the assessment
- Non-approved chemicals (incense) and potted plant in room - both were removed at the time of the assessment

**Site Based Maintenance:**

- Adjust thermostat, or contact EMS, to increase temperature
- Remove non-approved chemical (incense) and potted plant. Soil is a source of microbial growth.
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

# IAQ Assessment

Location Number 0341

Bethune Elementary School

Evaluation Requested October 12, 2009

Time of Day 2:30 pm

Evaluation Date October 19, 2009

Outdoor Conditions      Temperature 81.3      Relative Humidity 55.3      Ambient CO2 399

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
405	69.1	72 - 78	52.8	30% - 60%	671	Max 700 > Ambient	3
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	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:

- Knickknacks and stuffed animals in the room
- HFSP advised that chiller was down and is currently being repaired by PPO
- Temperature was low at the time of the assessment

### Site Based Maintenance:

- Encourage occupant to reduce clutter to assist with site based cleaning efforts. Advise occupant that stuffed animals are a source of allergens and should be cleaned frequently.
- Adjust thermostat, or contact EMS, 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

# IAQ Assessment

Location Number 0341

Bethune Elementary School

Evaluation Requested October 12, 2009

Time of Day 2:30 pm

Evaluation Date October 19, 2009

Outdoor Conditions      Temperature 81.3      Relative Humidity 55.3      Ambient CO2 399

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
406	70.8	72 - 78	48.6	30% - 60%	581	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	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:

- HFSP advised that chiller was down and is currently being repaired by PPO
- Temperature was low at the time of the assessment

### Site Based Maintenance:

- Adjust thermostat, or contact EMS, 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

# IAQ Assessment

Location Number 0341

Bethune Elementary School

Evaluation Requested October 12, 2009

Time of Day 2:30 pm

Evaluation Date October 19, 2009

Outdoor Conditions      Temperature 81.3      Relative Humidity 55.3      Ambient CO2 399

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
407	69.5	72 - 78	48.7	30% - 60%	569	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	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	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	Yes	No	No	

## Observations

### Findings:

- HFSP advised that chiller was down and is currently being repaired by PPO
- Temperature was low at the time of the assessment
- Dust and debris on HVAC supply grills

### Site Based Maintenance:

- Adjust thermostat, or contact EMS, to increase temperature
- Clean HVAC supply grills 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

# IAQ Assessment

Location Number 0341

Bethune Elementary School

Evaluation Requested October 12, 2009

Time of Day 2:30 pm

Evaluation Date October 19, 2009

Outdoor Conditions      Temperature 81.3      Relative Humidity 55.3      Ambient CO2 399

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
506	73.3	72 - 78	55.5	30% - 60%	423	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Yes		Yes		Yes		3 ceiling tiles	
Ceiling Type	2 x 4 Lay In		Yes	Yes		3 ceiling tiles	
Wall Type	Drywall		No	No		None	
Flooring	12 x 12 Vinyl		No	No		None	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	
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:

- Building is currently not occupied
- Musty odor throughout the entire building
- Visible microbial growth in cabinets
- Broken wall board under sink exposing water pipes
- Humidity level is greater than outdoors

### Facilities and Construction Management:

- Expedite Capital funding request to have equipment moved from building 5 to auditorium for computer classes that have been relocated

# IAQ Assessment

Location Number 0341

Bethune Elementary School

Evaluation Requested October 12, 2009

Time of Day 2:30 pm

Evaluation Date October 19, 2009

Outdoor Conditions      Temperature 81.3      Relative Humidity 55.3      Ambient CO2 399

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
507	72.9	72 - 78	55.8	30% - 60%	411	Max 700 > Ambient	3
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Yes		Yes		No		1 ceiling tile	
Ceiling Type	2 x 4 Lay In		Yes	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	No	Yes	Yes	
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:

- Building is currently not occupied
- Musty odor throughout the entire building
- Visible microbial growth in cabinets
- Humidity level is greater than outdoors

### Facilities and Construction Management:

- Expedite Capital funding request to have equipment moved from building 5 to auditorium for computer classes that have been relocated