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August 2, 2012

Signature on File

TO: Theresa Bucolo, Principal  
**Harbordale Elementary School**

FROM: Richard Rosa, Project Manager  
Facilities Design and Construction

SUBJECT: Indoor Air Quality (IAQ) Assessment

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

On October 12, 2011, I conducted an assessment at **Harbordale Elementary School**. Attached are findings and recommendations for further assessment, remediation, or corrective actions needed.

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.

*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 site based custodial 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 us at 754-321-1907.

cc: Directors, School Performance & Accountability  
Shelley Meloni, Executive Director, Facilities Design and Construction  
Mark Dorsett, Manager, Zone 1, Physical Plant Operations Division  
Roy Norton, Manager, Custodial/Grounds, Physical Plant Operations Division  
Aston Henry, Supervisor, Risk Management  
Sonja Coley, Senior Project Manager, Facilities Design and Construction  
Broward Teachers Union  
Federation of Public Employees

RR/jg  
Enc.

# IAQ Assessment

Harbordale 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="509"/>	<input type="text" value="75.9"/>	<input type="text" value="72 - 78"/>	<input type="text" value="52.7"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="782"/>	<input type="text" value="Max 700 &gt; 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"/>
Wall Type	<input type="text" value="Tackboard"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text"/>
Flooring	<input type="text" value="12 x 12 Vinyl"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text"/>

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="Yes"/>	<input type="text" value="See below"/>
Walls	<input type="text" value="x"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Flooring	<input type="text" value="x"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
HVAC Supply Grills	<input type="checkbox"/>	<input type="text" value="x"/>	<input type="checkbox"/>	<input type="text" value="Clean Appropriately"/>
HVAC Return Grills	<input type="checkbox"/>	<input type="text" value="x"/>	<input type="checkbox"/>	<input type="text" value="Clean Appropriately"/>
Ceiling at Supply Grills	<input type="checkbox"/>	<input type="text" value="x"/>	<input type="checkbox"/>	<input type="text" value="Clean Appropriately"/>
Surfaces in Room	<input type="checkbox"/>	<input type="text" value="x"/>	<input type="checkbox"/>	<input type="text" value="Clean Appropriately"/>

**Observations**

**Findings**

- FISH 509- Chiller HVAC system currently under repair , HFP states one chiller is continually running while the other chiller is being repaired
- FISH 509-Signs of water intrusion and stained ceiling tiles, possible HVAC roof penetration,

**Site Based Maintenance**

- FISH 509- One stained ceiling tile . Remove and replace ceiling tile
- FISH 509- Dust build up on HVAC supply and return grills and on ceiling at supply grills. Clean as appropriate.
- FISH 509- Dust build up on surfaces Clean as appropriate.
- FISH 509- Ensure HVAC filter doors on AHU's are closed properly.
- FISH 509- Ensure HVAC filters are installed properly and taped together to prevent bypass of debris

**Physical Plant Operation**

-Note Work orders EQ02208 - EQ02210 issued 11/7/11

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Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="811"/>	<input type="text" value="75.5"/>	<input type="text" value="72 - 78"/>	<input type="text" value="56.2"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="660"/>	<input type="text" value="Max 700 &gt; Ambient"/>	<input type="text"/>
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"/>	
Ceiling Type	<input type="text" value="2 x 4 Lay in"/>		<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text"/>	
Wall Type	<input type="text" value="Tackboard"/>		<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text"/>	
Flooring	<input type="text" value="12 x 12 Vinyl"/>		<input type="text" value="Yes"/>	<input type="text" value="No"/>		<input type="text" value="Food and Water stains"/>	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Walls	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Flooring	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="See below"/>
HVAC Supply Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="Clean Appropriately"/>
HVAC Return Grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Ceiling at Supply Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="Clean Appropriately"/>
Surfaces in Room	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="Clean Appropriately"/>

**Observations**

**Findings**

- FISH 811- Heavy staining on carpet

**Site Based Maintenance**

- FISH 811- Dust build up on HVAC supply and return grills and on ceiling at supply grills. Clean as appropriate.
- FISH 811- Dust build up on surfaces Clean as appropriate.
- FISH 811- Ensure HVAC filter doors on AHU's are closed properly.
- FISH 811- Ensure HVAC filters are installed properly and taped together to prevent bypass of debris

**Physical Plant Operation**

- FISH 811- Evaluate carpet for replacement.

-Note Work orders EQ02208 - EQ02210 issued 11/7/11

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Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="840"/>	<input type="text" value="74"/>	<input type="text" value="72 - 78"/>	<input type="text" value="52.5"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="775"/>	<input type="text" value="Max 700 &gt; Ambient"/>	<input type="text"/>
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"/>	
Ceiling Type	<input type="text" value="2 x 4 Lay in"/>		<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text"/>	
Wall Type	<input type="text" value="Tackboard"/>		<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text"/>	
Flooring	<input type="text" value="12 x 12 Vinyl"/>		<input type="text" value="Yes"/>	<input type="text" value="No"/>		<input type="text" value="50 sq ft Condensate water stains"/>	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Walls	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Flooring	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="See below"/>
HVAC Supply Grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
HVAC Return Grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Ceiling at Supply Grills	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="Clean Appropriately"/>
Surfaces in Room	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="Clean Appropriately"/>

**Observations**

**Findings**

- FISH 840- Heavy staining on carpet

**Site Based Maintenance**

- FISH 811- Dust build up on low and elevated corners. Clean as appropriate.

**Physical Plant Operation**

- FISH 840- Evaluate carpet for replacement.

-Note Work orders EQ02208 - EQ02210 issued 11/7/11

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Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="2101"/>	<input type="text" value="72.6"/>	<input type="text" value="72 - 78"/>	<input type="text" value="51"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="859"/>	<input type="text" value="Max 700 &gt; Ambient"/>	<input type="text"/>
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"/>	
Ceiling Type	<input type="text" value="2 x 4 Lay in"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
Wall Type	<input type="text" value="Tackboard"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
Flooring	<input type="text" value="12 x 12 Vinyl"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Walls	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Flooring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
HVAC Supply Grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
HVAC Return Grills	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="Clean Appropriately"/>
Ceiling at Supply Grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Surfaces in Room	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

**Observations**

**Findings**  
 - FISH 2101- Dust build up on HVAC supply and return grills

**Site Based Maintenance**  
 - FISH 2101- Dust build up on HVAC supply and return grills . Clean as appropriate.

**Physical Plant Operation**

-Note Work orders EQ02208 - EQ02210 issued 11/7/11

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Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="2121"/>	<input type="text" value="72.6"/>	<input type="text" value="72 - 78"/>	<input type="text" value="51.9"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="1040"/>	<input type="text" value="Max 700 &gt; 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="No"/>	<input type="text" value="No"/>	<input type="text"/>		
Wall Type	<input type="text" value="Tackboard"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
Flooring	<input type="text" value="12 x 12 Vinyl"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Walls	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Flooring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
HVAC Supply Grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
HVAC Return Grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Ceiling at Supply Grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Surfaces in Room	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

**Observations**

**Findings**

- FISH 2121- No issues identified

**Site Based Maintenance**

**Physical Plant Operation**

-Note Work orders EQ02208 - EQ02210 issued 11/7/11

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Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="2123"/>	<input type="text" value="72.5"/>	<input type="text" value="72 - 78"/>	<input type="text" value="49.9"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="871"/>	<input type="text" value="Max 700 &gt; 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="No"/>	<input type="text" value="No"/>	<input type="text"/>		
Wall Type	<input type="text" value="Tackboard"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
Flooring	<input type="text" value="12 x 12 Vinyl"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Walls	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Flooring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
HVAC Supply Grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
HVAC Return Grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Ceiling at Supply Grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Surfaces in Room	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

**Observations**

**Findings**

- FISH 2123- No issues identified

**Site Based Maintenance**

**Physical Plant Operation**

-Note Work orders EQ02208 - EQ02210 issued 11/7/11