

RISK MANAGEMENT...

managing risk with responsibility

Jeffrey S. Moquin, Director
Risk Management Department

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

January 7, 2008

Signature on File

TO: Dr. Theodore Toomer, Principal
Markham Elementary School

FROM: Edward See, Project Manager
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment
FISH 301, 302, 303, 304 and 401

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

On November 19, 2007 I conducted an assessment of FISH 301, 302, 303, 304 and 401 at **Markham 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. 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 754-321-3200.

cc: Dr. Joanne Harrison, Area Superintendent
Jackie Haywood, Area Director
Jeffrey S. Moquin, Director, Risk Management
Gerry Devio, Project Manager, Facilities and Construction Management
Lynn Cavall, Broward Teachers Union
Roy Jarrett, National Federation of Public and Private Employees
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division

ES/tc
Enc.

IAQ Assessment

Location Number
 Evaluation Requested
 Evaluation Date

Markham 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="301"/>	<input type="text" value="63.3"/>	<input type="text" value="72 - 78"/>	<input type="text" value="69.3"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="461"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="1"/>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<input type="text" value="Yes"/>		<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="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
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="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="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
HVAC Return Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
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 as appropriate"/>

Observations

Findings:

- Musty odor in room
- Dust and debris on HVAC supply and return grills
- Dust build up on environmental surfaces and window sills
- Temperature was low and humidity was elevated
- Items stored in FISH 301B (air handler room)

Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Thoroughly clean environmental surfaces and window sills throughout the room
- Remove items from FISH 301B
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Facilities and Construction Management:

- Current project to upgrade HVAC system ongoing. Project Manager advised and will take care of findings related to HVAC with contractor.

IAQ Assessment

Location Number 1671
 Evaluation Requested November 19, 2007
 Evaluation Date November 19, 2007

Markham Elementary School

Time of Day 2:35 pm

Outdoor Conditions Temperature 81.1 Relative Humidity 68.9 Ambient CO2 515

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
302	66.1	72 - 78	59.5	30% - 60%	475	Max 700 > Ambient	1
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		No	No	None		
Flooring	12 x 12 Vinyl		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	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Musty odor in room
- Dust and debris on HVAC supply and return grills
- Dust build up on environmental surfaces and window sills
- Temperature was low
- Items stored in FISH 302B (air handler room)

Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Thoroughly clean environmental surfaces and window sills throughout the room
- Remove items from FISH 302B
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Facilities and Construction Management:

- Current project to upgrade HVAC system ongoing. Project Manager advised and will take care of findings related to HVAC with contractor.

IAQ Assessment

Markham Elementary School

Location Number 1671
 Evaluation Requested November 19, 2007
 Evaluation Date November 19, 2007

Time of Day 2:35 pm

Outdoor Conditions Temperature 81.1 Relative Humidity 68.9 Ambient CO2 515

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
303	66.9	72 - 78	68.1	30% - 60%	472	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		No	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	Yes	No	No	
Walls	Yes	No	No	
Flooring	Yes	No	No	
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Dust and debris on HVAC supply and return grills
- Dust build up on environmental surfaces and window sills
- 2 broken ceiling tiles
- Temperature was low and humidity level was slightly elevated
- Items stored in FISH 303B (air handler room)
- Dust and debris on A/C filters (FISH 303B)

Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Thoroughly clean environmental surfaces and window sills throughout the room
- Remove and replace broken ceiling tiles
- Remove items from FISH 303B
- Remove and replace A/C filters (FISH 303B)
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Facilities and Construction Management:

- Current project to upgrade HVAC system ongoing. Project Manager advised and will take care of findings related to HVAC with contractor.

IAQ Assessment

Location Number 1671
 Evaluation Requested November 19, 2007
 Evaluation Date November 19, 2007

Markham Elementary School

Time of Day 2:35 pm

Outdoor Conditions Temperature 81.1 Relative Humidity 68.9 Ambient CO2 515

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
304	74.5	72 - 78	60.3	30% - 60%	470	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	Drywall		No	No	None		
Flooring	12 x 12 Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	Yes	No	No	
Flooring	No	Yes	Yes	Clean and sanitize
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Dust and debris on HVAC supply and return grills
- Dust and debris on floor
- Dust build up on environmental surfaces
- 3 ceiling tiles were not properly secured to grid
- Humidity level was slightly elevated
- Items stored in FISH 304B (air handler room)

Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean and sanitize floor
- Thoroughly clean environmental surfaces throughout the room
- Adjust ceiling tiles to prevent gaps
- Remove items from FISH 304B
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Facilities and Construction Management:

- Current project to upgrade HVAC system ongoing. Project Manager advised and will take care of findings related to HvAC with contractor.

IAQ Assessment

Location Number
 Evaluation Requested
 Evaluation Date

Markham 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="401"/>	<input type="text" value="67.2"/>	<input type="text" value="72 - 78"/>	<input type="text" value="64.6"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="1045"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="3"/>
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="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
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="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="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
HVAC Return Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
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 as appropriate"/>

Observations

Findings:

- Musty odor in room
- Dust and debris on HVAC supply and return grills
- Dust build up on environmental surfaces and window sills
- Temperature was low and humidity was elevated

Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Thoroughly clean environmental surfaces and window sills 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

Facilities and Construction Management:

- Current project to upgrade HVAC system ongoing. Project Manager advised and will take care of findings related to HVAC with contractor.