

RISK MANAGEMENT...

managing risk with responsibility

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September 27, 2007

Signature on File

TO: Mr. Mark Kaplan, Principal
Falcon Cove Middle School

FROM: Edward See, Project Manager
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment
**Portable 113N, 290P, 377C, 685C, 698C
752CXD and 813C**

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

On September 26, 2007 Aston Henry and I conducted an assessment of Portable 113N, 290P, 377C, 685C, 698C, 752CXD and 813C at **Falcon Cove Middle 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.

There were no visible signs of microbial growth in the subject rooms; however, 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. 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. Verda Farrow, Area Superintendent
Jan Beal, Area Director
Jeffrey S. Moquin, Director, Risk Management
Gerry Usallan, Project Manager, Facilities and Construction Management
Ralph Eckhardt, 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 3622
 Evaluation Requested September 26, 2007
 Evaluation Date September 26, 2007

Falcon Cove Middle School

Time of Day 2:30 pm

Outdoor Conditions Temperature 82.8 Relative Humidity 78.9 Ambient CO2 619

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-113N	70.8	72 - 78	42.3	30% - 60%	3411	Max 700 > Ambient	22
Noticeable Odor	No		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	5' x 20' Panel		No	No	None		
Wall Type	Tackable		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	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- No signs of microbial growth or water intrusion
- Dust and debris on East A/C shaker unit coils
- Old staining on wall under West A/C shaker unit. Wall is not water damaged.
- Temperature was low and CO2 level was elevated at the time of the assessment. Thermostat was changed during assessment to increase temperature.
- Minor dust build up on environmental surfaces
- Teacher indicated that South door jamb is broken and a work order was called in over a year ago

-Recommendations:

Site Based Maintenance:

- Wipe down wall under West A/C shaker unit to remove old staining
- Ensure that both A/C units are on when rooms are occupied. Utilize portable fan to increase ventilation until repairs are initiated by Physical Plant Operations to correct CO2 level.
- Clean environmental surfaces throughout the room
- Followup with Physical Plant Operations regarding the status of work order to repair South door jamb
- 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

- Clean East A/C shaker unit coils
- Evaluate A/C units for proper operation and repair as appropriate to increase temperature and lower CO2 level

IAQ Assessment

Location Number 3622
 Evaluation Requested September 26, 2007
 Evaluation Date September 26, 2007

Falcon Cove Middle School

Time of Day 2:30 pm

Outdoor Conditions Temperature 82.8 Relative Humidity 78.9 Ambient CO2 619

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-290P	73	72 - 78	72.5	30% - 60%	1240	Max 700 > Ambient	21
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No							
Ceiling Type	2 x 4 Lay In	Yes	No	1 tile at West A/C shaker unit			
Wall Type	Tackable	Yes	No	West wall at A/C shaker unit			
Flooring	12 x 12 Vinyl	No	No	None			

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	See below
Walls	Yes	No	No	
Flooring	Yes	No	No	
HVAC Supply Grills	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills	No	Yes	Yes	Remove and replace ceiling tile
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- No signs of microbial growth or water intrusion
- Staining on ceiling at West A/C shaker unit
- Rusted light grids throughout room
- Humidity level was elevated
- Minor dust build up on environmental surfaces
- West A/C shaker unit is dripping water

-Recommendations:

Site Based Maintenance:

- Remove and replace ceiling tiles as appropriate at West A/C shaker unit
- Clean environmental surfaces 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

Physical Plant Operations

- Evaluate cause of rusted light grids and repair as appropriate
- Evaluate A/C units for proper operation and repair as appropriate to lower humidity
- Evaluate West A/C shaker unit for cause of dripping and repair as appropriate

IAQ Assessment

Location Number 3622
 Evaluation Requested September 26, 2007
 Evaluation Date September 26, 2007

Falcon Cove Middle School

Time of Day 2:30 pm

Outdoor Conditions Temperature 82.8 Relative Humidity 78.9 Ambient CO2 619

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-377C	71.4	72 - 78	50.4	30% - 60%	3574	Max 700 > Ambient	24
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		Yes		No		Tile at West A/C shaker unit	
Ceiling Type	2 x 4 Lay In		Yes	No	Tile at West A/C shaker unit		
Wall Type	Tackable		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	No	Yes	Yes	Remove and replace ceiling tile
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- No signs of microbial growth or water intrusion
- Dust and debris on A/C filters in both shaker units
- Dust and debris on A/C supply and return grills and staining on ceiling at West A/C shaker unit
- Temperature was low and CO2 level was elevated at the time of the assessment. Thermostat was changed during assessment to increase temperature.
- Minor dust build up on environmental surfaces

-Recommendations:

Site Based Maintenance:

- Remove and replace A/C filters in both shaker units and ensure that filters are changed at least once a month
- Ensure that both A/C units are on when rooms are occupied. Utilize portable fan to increase ventilation until repairs are initiated by Physical Plant Operations to correct CO2 level.
- Clean A/C supply and return grills with Wexcide disinfectant solution and remove and replace ceiling tiles as appropriate at West A/C shaker unit
- Clean environmental surfaces 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

Physical Plant Operations

- Evaluate A/C units for proper operation and repair as appropriate to increase temperature and lower CO2 level

IAQ Assessment

Location Number 3622
 Evaluation Requested September 26, 2007
 Evaluation Date September 26, 2007

Falcon Cove Middle School

Time of Day 3:00 pm

Outdoor Conditions Temperature 82.8 Relative Humidity 78.9 Ambient CO2 619

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-685C	72.3	72 - 78	50.4	30% - 60%	3076	Max 700 > Ambient	21
Noticeable Odor	No		Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	2 x 4 Lay In		Yes		No		2 ceiling tiles
Wall Type	Tackable/Gypsum		Yes		No		North wall under A/C shaker unit
Flooring	12 x 12 Vinyl		No		No		None

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	Remove and replace ceiling tiles
Walls	Yes	No	No	
Flooring	Yes	No	No	
HVAC Supply Grills	Yes	No	No	
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	Yes	No	No	

Observations

Findings:

- No signs of microbial growth
- Dust and debris on A/C filters in both shaker units
- Dust and debris on A/C return grills
- CO2 level was elevated at the time of the assessment
- Elevated moisture content in North wall under A/C shaker unit
- 2 stained ceiling tiles

Site Based Maintenance:

- Remove and replace A/C filters in both shaker units and ensure that filters are changed at least once a month
- Ensure that both A/C units are on when rooms are occupied. Utilize portable fan to increase ventilation until repairs are initiated by Physical Plant Operations to correct CO2 level.
- Clean A/C return grills with Wexcide disinfectant solution
- Remove and replace stained ceiling tiles
- 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 A/C units for proper operation and repair as appropriate to lower CO2 level
- Evaluate cause of elevated moisture content in North wall under A/C shaker unit and repair as appropriate. Repair/replace wall material as necessary.

IAQ Assessment

Location Number 3622
 Evaluation Requested September 26, 2007
 Evaluation Date September 26, 2007

Falcon Cove Middle School

Time of Day 3:10 pm

Outdoor Conditions Temperature 82.8 Relative Humidity 78.9 Ambient CO2 619

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-698C	73.9	72 - 78	47.7	30% - 60%	3588	Max 700 > Ambient	24
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Yes							
Ceiling Type	2 x 4 Lay In	Yes	No	2 ceiling tiles			
Wall Type	Tackable	Yes	No	Under A/C shaker units			
Flooring	12 x 12 Vinyl	No	No	None			

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Remove and replace ceiling tiles
Walls	No	Yes	Yes	Repair as appropriate
Flooring	Yes	No	No	
HVAC Supply Grills	No	Yes	Yes	
HVAC Return Grills	No	Yes	Yes	
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	Yes	No	No	

Observations

Findings:

- No signs of microbial growth
- Dust and debris on A/C filters in both shaker units
- Dust and debris on A/C supply and return grills
- Dust and debris on A/C shaker unit coils
- Stained ceiling tiles
- Visible water staining on plastic light shields
- CO2 level was elevated at the time of the assessment. Only one A/C unit was on during assessment.
- Elevated moisture content in North and South walls under A/C shaker units
- Odor in room from air freshener

Recommendations:

Site Based Maintenance:

- Remove and replace A/C filters in both shaker units and ensure that filters are changed at least once a month
- Ensure that both A/C units are on when rooms are occupied. Utilize portable fan to increase ventilation until repairs are initiated by Physical Plant Operations to correct CO2 level.
- Clean A/C supply and return grills with Wexcide disinfectant solution
- Remove air freshener from room
- 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 as appropriate. Remove and replace stained ceiling tiles as necessary.
- Clean A/C shaker unit coils
- Evaluate A/C units for proper operation and repair as appropriate to lower CO2 level
- Evaluate cause of elevated moisture content in North and South walls under A/C shaker units and repair as appropriate. Repair/replace wall material as appropriate.

IAQ Assessment

Location Number
 Evaluation Requested
 Evaluation Date

Falcon Cove Middle School

Time of Day

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="P-752CXD"/>	<input type="text" value="74.4"/>	<input type="text" value="72 - 78"/>	<input type="text" value="48.8"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="2965"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="19"/>
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" value="None"/>
Wall Type	<input type="text" value="Tackable"/>		<input type="text" value="Yes"/>		<input type="text" value="No"/>		<input type="text" value="West and East Wall"/>
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="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>

Observations

Findings:

- No signs of microbial growth
- Dust and debris on A/C filters in both shaker units
- Dust and debris on A/C supply and return grills
- CO2 level was elevated at the time of the assessment
- Elevated moisture content in West wall under A/C shaker unit and in East wall (Northeast corner) under the window

Site Based Maintenance:

- Remove and replace A/C filters in both shaker units and ensure that filters are changed at least once a month
- Ensure that both A/C units are on when rooms are occupied. Utilize portable fan to increase ventilation until repairs are initiated by Physical Plant Operations to correct CO2 level.
- Clean A/C supply and return 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

Physical Plant Operations

- Evaluate A/C units for proper operation and repair as appropriate to lower CO2 level
- Evaluate cause of elevated moisture content in West wall under A/C shaker unit and in East wall (Northeast corner) under the window and repair as appropriate. Repair/replace wall material as necessary.

IAQ Assessment

Location Number 3622
 Evaluation Requested September 26, 2007
 Evaluation Date September 26, 2007

Falcon Cove Middle School

Time of Day 2:30 pm

Outdoor Conditions Temperature 82.8 Relative Humidity 78.9 Ambient CO2 619

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-813C	71.6	72 - 78	50.3	30% - 60%	2765	Max 700 > Ambient	24
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		Yes		No		2 tiles at West A/C shaker unit	
Ceiling Type	2 x 4 Lay In		Yes	No		2 tiles at West A/C shaker unit	
Wall Type	Tackable		No	No		None	
Flooring	12 x 12 Vinyl		No	No		None	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	See below
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	No	Yes	Yes	Remove and replace ceiling tiles
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- No signs of microbial growth or water intrusion
- Dust and debris on A/C filters in both shaker units
- Dust and debris on A/C supply and return grills and staining on ceiling at West A/C shaker unit
- Visible water staining on plastic light shields
- Temperature was low , humidity was elevated and CO2 level was elevated at the time of the assessment. Thermostat was changed during assessment to increase temperature.
- Minor dust build up on environmental surfaces
- Non-approved chemicals in room (Lysol and Fantastik)

-Recommendations:

Site Based Maintenance:

- Remove and replace A/C filters in both shaker units and ensure that filters are changed at least once a month
- Ensure that both A/C units are on when rooms are occupied. Utilize portable fan to increase ventilation until repairs are initiated by Physical Plant Operations to correct CO2 level.
- Clean A/C supply and return grills with Wexcide disinfectant solution and remove and replace ceiling tiles as appropriate at West A/C shaker unit
- Clean plastic light shields as appropriate with Wexcide disinfectant solution
- Clean environmental surfaces throughout the room
- Remove non-approved chemicals from room
- 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 A/C units for proper operation and repair as appropriate to increase temperature, lower humidity and lower CO2 level