

RISK MANAGEMENT...

managing risk with responsibility

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February 23, 2007

Signature on File

TO: Dr. Dorothy Cook, Principal
Meadowbrook Elementary School

FROM: Robert J. Krickovich, Coordinator, LEA
Facilities and Construction Management, Environmental Division

SUBJECT: Indoor Air Quality (IAQ) Assessment
Portable 156P, 157P, 158P, 341P and FISH 701, 1212 and 1213

On February 7, 2007 I conducted an assessment of Portable 156P, 157P, 158P, 341P and FISH 701, 1212 and 1213 at **Meadowbrook 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 754-321-1638.

cc: Dr. Verda Farrow, Area Superintendent
Michaelle Pope, Area Director
Jeffrey S. Moquin, Director, Risk Management
James Carballo, Project Manager, Facilities and Construction Management
Ralph Eckhardt, Broward Teachers Union
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division

RK/tc
Enc.

IAQ Assessment

Location Number 0761
 Evaluation Requested January 29, 2007
 Evaluation Date February 7, 2007

Meadowbrook Elementary School

Time of Day 1:00 pm

Outdoor Conditions Temperature 75.6 Relative Humidity 64.4 Ambient CO2 533

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-156P	72.3	72 - 78	50.4	30% - 60%	599	Max 700 > Ambient	3
Noticeable Odor	No		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	Drywall		Yes	No	Along West wall		
Wall Type	Tackboard		Yes	No	West wall		
Flooring	12 x 12 Vinyl		No	No	None		

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

Observations

Findings:

- Water intrusion at ceiling along West wall and under 6th window from the door on South wall
- Entire floor is water damaged. Floor tiles cracking.
- Stained ceiling tile along West wall

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:

- Evaluate cause of water intrusion along West wall and under 6th window from the door on South wall and repair as appropriate.
- Repair exterior of portable to prevent water intrusion
- Repair/replace wall material as appropriate and replace stained ceiling tiles as necessary.
- Evaluate floor and repair/replace floor material as appropriate

- Unit is scheduled for routine repairs that will be facilitated by Central Area Portable Renovation Crew in the next 30 days that will encompass Physical Plant Operations recommendations listed above.

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-157P	71.6	72 - 78	41.4	30% - 60%	1283	Max 700 > Ambient	4
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	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills				N/A
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Only one A/C unit was on and not set for fresh air
- Two live plants in the room - one with visible microbial growth on the soil
- Water intrusion at base of wall by restroom behind sink. Sink is not caulked at the backsplash.

Recommendations:

Site Based Maintenance:

- Ensure that both A/C units are on and set for fresh air
- Remove live plants 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 water intrusion along wall base by restroom behind sink. Remove sink cabinet from wall and caulk backsplash to prevent water intrusion. Repair/replace wall material and sink cabinet as appropriate.

- Unit is scheduled for routine repairs that will be facilitated by Central Area Portable Renovation Crew in the next 30 days that will encompass Physical Plant Operations recommendations listed above.

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-158P	72.9	72 - 78	52.6	30% - 60%	1061	Max 700 > Ambient	10
Noticeable Odor	Yes		Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	2 x 4 Lay In		Yes		No		Entire East wall
Wall Type	Tackboard		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				N/A
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Strong cinnamon odor in portable. Found large cinnamon broom in the room and had head facilities serviceperson remove it.
- Unauthorized chemicals found under sink - gallon of bleach, Lysol soft scrub, Mr. Clean, 409, glass cleaner, Oust spray, unknown liquid in spray bottle and Arrow cleanser.
- Water intrusion on interior East wall above white board.
- Water intrusion at base of wall by restroom behind sink. Sink is not caulked at the backsplash.
- Severe water damage on exterior South wall between windows and top two feet of exterior East wall.

Recommendations:

Site Based Maintenance:

- Remove all unauthorized chemicals from room and provide labels for spray bottles of authorized chemicals
- 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 water intrusion along wall base by restroom behind sink and East wall above white board. Remove sink cabinet from wall and caulk backsplash to prevent water intrusion. Repair/replace wall material and sink cabinet as appropriate.
- Repair exterior of portable to prevent water intrusion

- Unit is scheduled for routine repairs that will be facilitated by Central Area Portable Renovation Crew in the next 30 days that will encompass Physical Plant Operations recommendations listed above.

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-341P	71	72 - 78	46.3	30% - 60%	1111	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	Tackboard		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				N/A
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Odor of Glade plug in. Remove and disposed of plug in.
- Unauthorized chemicals found under sink - spray disinfectant, 3 bottles of rubbing alcohol and unknown liquid in spray bottle.
- Heavy dirt build up on throw rug
- Exterior wall at Southeast door and the South half of the West wall behind restroom is rotted (open)
- Visible microbial growth and staining on restroom ceiling
- Sink is not caulked at the backsplash

Recommendations:

Site Based Maintenance:

- Remove all unauthorized chemicals from room and provide labels for spray bottles of authorized chemicals. Remove all air fresheners from buildings.
- Thoroughly clean or replace throw rug
- Clean restroom ceiling 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:

- Repair/replace sink backsplash and caulk to prevent water intrusion
- Repair exterior of portable to prevent water intrusion

- Unit is scheduled for routine repairs that will be facilitated by Central Area Portable Renovation Crew in the next 30 days that will encompass Physical Plant Operations recommendations listed above.

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
701	74.9	72 - 78	55.8	30% - 60%	965	Max 700 > Ambient	19
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	Plaster		Yes	No	At exterior doors		
Flooring	Carpet		Yes	No	At exterior doors		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	No	Yes	Yes	Remove and replace wall material
Flooring	No	Yes	Yes	Remove and replace sections by doors
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	No	Yes	Yes	Clean as appropriate

Observations

Findings: Media Center

- Water damaged wall at both exterior doors
- Carpet is wet at both exterior doors
- Heavy dust and debris on entire media collection and books on shelves in FISH 701B

Recommendations:

Site Based Maintenance:

- Clean all books and shelving throughout media center
- 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 water intrusion at exterior doors and repair as appropriate. Repair/replace wall material as appropriate.
- Remove water damaged carpet at both exterior doors and replace with VCT in those areas

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
1212	75.2	72 - 78	62.1	30% - 60%	1573	Max 700 > Ambient	25
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		Yes	Yes	Between sink and restroom		
Flooring	12 x 12 Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	No	Yes	Yes	Remove and replace wall material
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:

- Water damage on wall between restroom and sink cabinet due to previous leak in restroom
- Visible microbial growth along sides of wood bookcase and metal cabinet (both attached to wall)
- Humidity and CO2 levels were slightly elevated at the time of the assessment and the room felt warm in comparison to surrounding rooms and hallway

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 and replace wall material from restroom door to sink cabinet (7 feet long, 4 feet high)
- Remove bookcase from wall and repair/replace as appropriate. Remove cabinet from wall and clean as appropriate.
- Evaluate HVAC system for proper operation and repair as appropriate to lower temperature, humidity and CO2

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1213	75.1	72 - 78	60.6	30% - 60%	1445	Max 700 > Ambient	20
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		Yes	Yes	Between sink and restroom		
Flooring	12 x 12 Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	No	Yes	Yes	Remove and replace wall material
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	

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- Remove and replace wall material from restroom door to sink cabinet (7 feet long, 4 feet high)
- Remove bookcase from wall and repair/replace as appropriate. Remove cabinet from wall and clean as appropriate.
- Evaluate HVAC system for proper operation and repair as appropriate to lower temperature, humidity and CO2