

Aston A. Henry, Supervisor
Risk Management Department

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

November 9, 2009

Signature on File

TO: Ms. Kim Flynn, Principal
Olsen Middle School

FROM: Edward See, Project Manager
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment
**FISH 002, 105, 205, 215, 216, 606, 608, 618,
715 and 716**

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

On November 3, 2009, I conducted an assessment of FISH 003, 105, 205, 215, 216, 606, 608, 618, 715 and 716 at **Olsen 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.

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 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
Valerie Wanza, Area Director
Jeffrey S. Moquin, Executive Director, Support Operations
Aston Henry, Supervisor, Risk Management
Herbert Lee, 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 0471

Olsen Middle School

Evaluation Requested October 15, 2009

Time of Day 1:30 pm

Evaluation Date November 3, 2009

Outdoor Conditions Temperature 84.3 Relative Humidity 66.8 Ambient CO2 394

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
002	74.6	72 - 78	57	30% - 60%	848	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 2 Lay In		No	No		None	
Wall Type	Drywall/Plaster		No	Yes		Various	
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	Clean with Wexcide disinfectant solution
Flooring	Yes	No	No	
HVAC Supply Grills	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills	No	Yes	Yes	Clean as appropriate
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Room air feels stagnant - new exhausts recently installed
- Visible microbial growth on wall - @10 square feet total - sporadic
- Outside air entering under door to outside
- Damaged ceiling tile at exit door
- Rusted HVAC return grill
- Dust build up on ceiling tiles at HVAC supply grills

Site Based Maintenance:

- Wipe down wall with Wexcide disinfectant solution and monitor
- Contact COMPASS to generate a work order to replace rusted HVAC return grill
- Remove and replaced damaged ceiling tile
- Clean ceiling tiles at HVAC supply grills
- 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:

- Install data loggers in room for one week to monitor temperature and humidity and report findings to Risk Management
- Evaluate door to outside and install threshold/seal to prevent outside air from entering room

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
105	76.6	72 - 78	46.3	30% - 60%	822	Max 700 > Ambient	3
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Yes		No		No		None	
Ceiling Type	2 x 4 Lay In		No	No		None	
Wall Type	Drywall/Plaster		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	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Musty odor in room
- Occupant advised that room is more humid in the mornings
- Visible microbial growth on desk (less than 1 square foot). Occupant advised growth is recurring
- FISH 120 (air handler room) - standing water and debris in drain pan

Site Based Maintenance:

- Wipe down desk with Wexcide disinfectant solution and monitor
- 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:

- Install data loggers in room for one week to monitor temperature and humidity and report findings to Risk Management
- FISH 120 - Clean drain pan and evaluate unit for repair

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
205	71.6	72 - 78	60.8	30% - 60%	446	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Yes		No		No		None	
Ceiling Type	2 x 2 Lay In		No	No		None	
Wall Type	Drywall/Plaster		No	No		None	
Flooring	Carpet		Yes	No		Various	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	Yes	No	No	
Flooring	No	Yes	Yes	PPO Evaluate Carpet
HVAC Supply Grills	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills	No	Yes	Yes	Clean as appropriate
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Musty odor in room
- Dust build up on ceiling tiles at HVAC supply grills
- Temperature was low and humidity was slightly elevated at the time of the assessment
- Carpet stained and worn

Site Based Maintenance:

- Clean ceiling tiles at HVAC supply grills
- 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 HVAC system for proper operation and repair as appropriate to increase temperature and lower humidity
- Evaluate carpet for replacement

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
215	73	72 - 78	48.4	30% - 60%	696	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:

- No issues identified

Site Based Maintenance:

- Thoroughly clean environmental surfaces. Recommend occupant reduce clutter to assist with cleaning efforts.
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
216	70.3	72 - 78	50.2	30% - 60%	700	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	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Dust and debris on environmental surfaces. Room is cluttered.
- FISH 216A - Visible microbial growth on wall
- FISH 216A - Rusted HVAC vent

Site Based Maintenance:

- Thoroughly clean environmental surfaces. Recommend occupant reduce clutter to assist with cleaning efforts.
- FISH 216A - Wipe down wall with Wexcide disinfectant solution and monitor
- Contact COMPASS to generate a work order to replace rusted HVAC vent in FISH 216A
- 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 HVAC system for proper operation and repair as appropriate to increase temperature. FISH 215 (adjacent room with same AHU) temperature is 3 degrees warmer.

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606	71.7	72 - 78	52.1	30% - 60%	755	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	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	Yes	No	No	

Observations

Findings:

- Non-approved chemicals in room (air fresheners)
- 1 ceiling tile not seated properly at light grid

Site Based Maintenance:

- Remove non-approved chemicals (air fresheners) from room
- Adjust ceiling tile at light grid
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

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608	72.6	72 - 78	62.8	30% - 60%	679	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	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	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:

- Visible microbial growth (1 square foot) on South wall
- Humidity level was elevated at the time of the assessment
- Visible glue on flooring
- Dust and debris on HVAC return grills
- Dust build up on environmental surfaces

Site Based Maintenance:

- Wipe down projector screen with Wexcide disinfectant solution
- Thoroughly clean and sanitize flooring to remove glue
- Clean HVAC return grills with Wexcide disinfectant solution
- Thoroughly clean environmental surfaces
- 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 HVAC system for proper operation and repair as appropriate to lower humidity
- Evaluate carpet for replacement

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618	70.9	72 - 78	56.8	30% - 60%	561	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 2 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	Yes	No	No	
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Visible microbial growth on laptop case - minor
- Dust build on environmental surfaces

Site Based Maintenance:

- Clean laptop case with Wexcide disinfectant solution
- Thoroughly clean environmental surfaces
- 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:

- Install data loggers in room for one week to monitor temperature and humidity and report findings to Risk Management

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715	71.4	72 - 78	65	30% - 60%	867	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 2 Lay In		No	No		None	
Wall Type	Drywall/Plaster		No	Yes		1 square foot	
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	Clean as appropriate
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:

- Visible microbial growth (1 square foot) on South wall
- Temperature was low and humidity was elevated at the time of the assessment
- Multiple ceiling tiles are not seated properly

Site Based Maintenance:

- Wipe down wall with Wexcide disinfectant solution and monitor
- Adjust ceiling tiles as necessary
- 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 HVAC system for proper operation and repair as appropriate to increase temperature and lower humidity
- Evaluate carpet for replacement

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716	74	72 - 78	51.3	30% - 60%	579	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		Yes		1 square foot	
Flooring		No		No		None	

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

- Visible microbial growth (1 square foot) on South wall

Site Based Maintenance:

- Wipe down wall with Wexcide disinfectant solution and monitor
 - 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 exhaust fans on roof for proper operation and insure tie in to EMS system