

RISK MANAGEMENT...

managing risk with responsibility

Aston A. Henry, Supervisor
Risk Management Department

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October 1, 2009

Signature on File

TO: Ms. Kellee Stroup, Principal
McNab Elementary School

FROM: Edward See, Project Manager
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment
**FISH 201, 209, 315, 329, 332, 338, 340, 347
348, 353, 354, 401, 402, 403 and 926**

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

On September 16, 2009, I conducted an assessment of FISH 201, 209, 315, 329, 332, 338, 340, 347, 348, 353, 354, 401, 402, 403 and 926 at **McNab 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.

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: Sharon Airaghi, Area Superintendent
Jackie Haywood, Area Director
Jeffrey S. Moquin, Executive Director, Support Operations
Aston Henry, Supervisor, Risk Management
Robert Bellot, Project Manager, Facilities and Construction Management
Lynn Cavall, 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

ES/tc
Enc.

IAQ Assessment

Location Number 0841

McNab Elementary School

Evaluation Requested September 15, 2009

Time of Day 8:30 am

Evaluation Date September 16, 2009

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
201	 	72 - 78	 	30% - 60%	 	Max 700 > Ambient	
Noticeable Odor	No		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	2 x 4 Lay In		Yes	No	5 ceiling tiles		
Wall Type	Drywall/Plaster		No	No	None		
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	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:
- 2 stained ceiling tiles in FISH 201 and 3 stained ceiling tiles outside of FISH 201

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 Operation:
- Evaluate cause of stained ceiling tiles and repair as appropriate. Remove and replace ceiling tiles as necessary.

IAQ Assessment

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McNab Elementary School

Evaluation Requested September 15, 2009

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Evaluation Date September 16, 2009

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
209		72 - 78		30% - 60%		Max 700 > Ambient	
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/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	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Previous work order closed. Recurring leak in room.

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 Operation:

- Evaluate for recurring leak and repair as appropriate.

IAQ Assessment

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Evaluation Date September 16, 2009

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
315	74.9	72 - 78	56.7	30% - 60%	965	Max 700 > Ambient	22
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		Yes		No		2 ceiling tiles	
Ceiling Type	2 x 4 Lay In		Yes	No		2 ceiling tiles	
Wall Type	Drywall/Plaster		No	No		None	
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	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:

- 2 stained ceiling tiles
- Recurring water leak at wall adjacent to restroom

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 Operation:

- Evaluate cause of stained ceiling tiles and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Evaluate recurring water leak at wall adjacent to restroom and repair as appropriate. Repair/replace wall material as necessary.

IAQ Assessment

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Evaluation Date September 16, 2009

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
329	73.4	72 - 78	61.1	30% - 60%	936	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/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	No	Yes	Yes	evaluate and repair
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 stain on wall at teacher's desk. Appears to be an active leak.
- Ceiling grids rusted
- Humidity level was slightly elevated at the time of the assessment

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 Operation:

- Evaluate cause of staining on wall at teacher's desk and rusted ceiling grids and repair as appropriate. Repair/replace wall material and ceiling grid as necessary.
- Evaluate HVAC system for proper operation and repair as appropriate to lower humidity level

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Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
332	74.5	72 - 78	58.1	30% - 60%	937	Max 700 > Ambient	22
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/Plaster		No	No	None		
Flooring	12 x 12 Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	Yes	Yes	
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 at the time of the assessment

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

IAQ Assessment

Location Number 0841

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Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
338	72.3	72 - 78	48.3	30% - 60%	874	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/Plaster		No	No	None		
Flooring	12 x 12 Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	Yes	Yes	
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 at the time of the assessment

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

IAQ Assessment

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Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
340	72.2	72 - 78	47.3	30% - 60%	1036	Max 700 > Ambient	21
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		Yes		No		1 ceiling tile	
Ceiling Type	2 x 4 Lay In		Yes	No		1 ceiling tile	
Wall Type	Drywall/Plaster		No	No		None	
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 tile
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:

- One stained ceiling tile
- Pests observed at the time of the assessment

Recommendations:

Site Based Maintenance:

- Contact COMPASS to generate a work order for pest control.
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operation:

- Evaluate cause of stained ceiling tile and repair as appropriate. Remove and replace ceiling tiles as necessary.

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Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
347	73.8	72 - 78	47.2	30% - 60%	778	Max 700 > Ambient	22
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/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	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 at the time of the assessment

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

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
348	70.9	72 - 78	46.7	30% - 60%	613	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/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	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Occupants reported temperature is too hot. Second reading taken at noon - 72.5 temperature, 45.7 humidity, 698 CO2

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

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Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
353	73.2	72 - 78	47.1	30% - 60%	790	Max 700 > Ambient	22
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/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	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 at the time of the assessment

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

IAQ Assessment

Location Number 0841

McNab Elementary School

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Time of Day 8:30 am

Evaluation Date September 16, 2009

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
354	72.7	72 - 78	45.2	30% - 60%	827	Max 700 > Ambient	22
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/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	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 at the time of the assessment

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

IAQ Assessment

Location Number 0841

McNab Elementary School

Evaluation Requested September 15, 2009

Time of Day 8:30 am

Evaluation Date September 16, 2009

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
401 & 402		72 - 78		30% - 60%		Max 700 > Ambient	
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/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	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 toilet paper, hand towel or soap dispenser in FISH 401 or 402

Recommendations:

Site Based Maintenance:

- Generate a work order to have toilet paper, hand towel and soap dispenser installed in rooms
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

IAQ Assessment

Location Number 0841

McNab Elementary School

Evaluation Requested September 15, 2009

Time of Day 8:30 am

Evaluation Date September 16, 2009

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
403	 	72 - 78	 	30% - 60%	 	Max 700 > Ambient	
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/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	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Elevated moisture content in all walls
- Water leaking from A/C unit
- Visible microbial growth on ceiling tiles and walls

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 Operation:

- Evaluate for cause of water intrusion and repair as appropriate. Repair/replace wall material and ceiling tiles as necessary.
- Evaluate A/C unit for leak and repair as appropriate

IAQ Assessment

Location Number 0841

McNab Elementary School

Evaluation Requested September 15, 2009

Time of Day 8:30 am

Evaluation Date September 16, 2009

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
926	70.1	72 - 78	56.3	30% - 60%	934	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		Yes		No		1 ceiling tile	
Ceiling Type	2 x 4 Lay In		Yes	No		1 ceiling tile	
Wall Type	Drywall/Plaster		No	No		None	
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 tile
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:

- One stained ceiling tile

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 Operation:

- Evaluate cause of stained ceiling tile and repair as appropriate. Remove and replace ceiling tiles as necessary.