

September 22, 2008

# managing risk with responsibility

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k Management Department Facsimile: 754-321-3290

Signature on File

TO: Mrs. Roberta Ray, Principal

**Norcrest Elementary School** 

FROM: Edward See, Project Manager

Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

FISH 716, 717, 718, 721, 723 and 905

F	or Custodial Supervisor Use Only
	Custodial Issues Addressed
	Custodial Issues Not Addressed
	Custodial Issues Not Addressed
-	

On September 9, 2008 I conducted an assessment of FISH 716, 717, 718, 721, 723 and 905 at **Norcrest 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. 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: Sharon Airaghi, Area Superintendent

David Hall, Area Director

Jeffrey S. Moquin, Director, 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

Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

ES/tc Enc.

-		10101001 210111				
Time of Day	2:30 pm				E	September 9, 2008
Outdoor Condit	tions T	emperature	88.7	Relative Humidi	75.6	Ambient CO2 364
Fish T	emperature	Range	Relative Humidity	Range	CO2	Range # Occupants
716	77	72 - 78	67	30% - 60%	441	Max 700 > Ambient 3
Noticeable Od	or No		Visible water damage / staining	Visible mid g? growth		Amount of material affected
Ceiling Type	2 x 4 L	ay In	Yes	Yes	]	1 ceiling tile
Wall Type	Drywall/l	Plaster	Yes	Yes	]	@ 1 square foot
Flooring	12 x 12	Vinyl	No	No	]	None
	Clean	Minor D / Debri		I	Correc	ctive Action Required
Ceiling	No	Yes	Yes		Remove a	nd replace ceiling tiles
Walls	No	Yes	Yes		Clean wit	h Wexcide disinfectant
Flooring	Yes	No	No			
HVAC Supply (	Grills Yes	No	No			
HVAC Return (	Grills No	Yes	Yes		Clean wit	h Wexcide disinfectant
Ceiling at Supp Grills	oly Yes	No	No			
Surfaces in Ro	om Yes	No	No			

Norcrest Flementary School

0561

Evaluation Requested September 8, 2008

**Location Number** 

# **Observations**

# Findings:

- 1 stained ceiling tile
- Bubbling paint on Northeast corner wall
- Dust and debris on HVAC return grill
- Humidity level was elevated
- Teachers are opening windows and doors due to A/C temperature.

#### Recommendations:

## Site Based Maintenance:

- Remove and replace stained ceiling tile
- Wipe down wall with Wexcide disinfectant solution
- Ensure that doors and windows remain closed. Open doors and windows allow humid untreated air into occupied spaces.
- Clean HVAC return grill 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 cause of stained ceiling tile and bubbling paint on Northeast corner wall and repair as appropriate. Repair/replace wall material as necessary. Possible leak from second floor.
- Evaluate HVAC for proper operation and repair as appropriate to lower humidity level

	Norc	rest Elementar	y School	E	Evaluation Requested	September 8, 2008		
Time of Day	2:30 pm				Evaluation Date	September 9, 2008		
Outdoor Condit	ions Tem	perature 8	38.7 R	elative Humidity	75.6 Ambie	nt CO2 364		
Fish T	Temperature R	Range Rela	tive Humidity	Range	CO2 Ran	ge # Occupants		
717	74.5 <b>7</b> 2	2 - 78	66.3 <b>3</b>	0% - 60%	435 Max <b>700</b>	> Ambient 1		
Noticeable Odor No Visible water Visible microbial Amount of material damage / staining? growth? affected						terial		
Ceiling Type	2 x 4 Lay I	n	No No		None			
Wall Type	Drywall/Plas	ster	No	No	None			
Flooring [	12 x 12 Vin	yl	No	No		None		
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective Action Re	equired		
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	Yes	No	No					
HVAC Supply (	Grills Yes	No	No					
HVAC Return C	Grills No	Yes	Yes	Cle	ean with Wexcide disi	nfectant		
Ceiling at Supp Grills	oly Yes	No	No					
Surfaces in Ro	om Yes	No	No					
L Observations								
Findings:								
- Potted plant in								
	- 12 stuffed animals in room							
	- Dust and debris on HVAC return grill - Humidity level was elevated							
Recommendations:								
Site Based Maintenance: - Remove potted plant from room. Soil is a source of microbial growth - Advise occupant to thoroughly clean stuffed animals on a regular basis or remove. Stuffed animals are a source of allergens if not cleaned frequently.								

Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as

- Clean HVAC return grill with Wexcide disinfectant solution

Physical Plant Operations:
- Evaluate HVAC for proper operation and repair as appropriate to lower humidity level

appropriate

**IAQ Assessment** 

0561

**Location Number** 

	Nor	crest Elementa	ry School		Evaluation	September 8, 2008	
Time of Day [	2:30 pm	]			Evalu	September 9, 2008	
Outdoor Condi	itions Ten	nperature	38.7	Relative Humidity	75.6	Ambient CO2 364	
Fish	Temperature	Range Rela	tive Humidity	Range	CO2	Range # Occupants	
718		72 - 78	55.5	30% - 60%	408	Max 700 > Ambient 1	
Noticeable Oc	lor No		/isible water nage / stainingʻ	Visible micro growth?	bial Am	nount of material affected	
Ceiling Type	2 x 4 Lay	In	Yes	No		1 ceiling tile	
Wall Type	Drywall/Pla	ester	No	No		None	
Flooring	12 x 12 Vi	nyl	No	No		None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective	Action Required	
Ceiling	No	Yes	Yes	R	emove 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 Sup Grills	ply Yes	No	No				
Surfaces in Ro	oom Yes	No	No				
bservations							
Findings: - 1 stained ceilir	ng tile						
Recommendat	ions:						
	eplace stained c		of microbial gr	owth as well as dus	at and debris	accumulation and clean as	
Physical Plant Operations: - Evaluate cause of stained ceiling tile and repair as appropriate							
L valuate caus	o or stanied celli	ng me ana repa	ао арргорна				

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**Location Number** 

	Norcrest Elen	nentary School		Evaluation	n Requested September 8, 2008
Time of Day 2:	:30 pm			Eva	aluation Date September 9, 2008
Outdoor Conditions	Temperature	88.7	Relative Humidity	75.6	Ambient CO2 364
721 7	Perature Range 76.6 72 - 78	Relative Humidity	30% - 60%	<b>CO2</b> 471	Range # Occupants  Max 700 > Ambient 2
Noticeable Odor	No	Visible water damage / staining	Visible micro growth?		Amount of material affected
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 I		ı	Correcti	ve 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			
Dbservations					
	trusion or microbial g	rowth			
Recommendations:					
Site Based Maintena - Continue to monitor appropriate	ance: this location for any	signs of microbial g	rowth as well as dus	st and debr	is accumulation and clean as

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**Location Number** 

Time of Day	2:30 pm					Evaluation Date Se	ptember 9, 2008
Outdoor Condition	ons Te	emperature	88.7	Relative Hun	nidity 75.	6 Ambient Co	O2 364
Fish Te	mperature	Range	Relative Humic	<sup>dity</sup> Range	CO2	Range	# Occupants
723	76.9	72 - 78	65.8	30% - 60%	473	Max 700 > An	nbient 2
Noticeable Odor	No		Visible wat damage / stair		microbial owth?	Amount of material affected	
Ceiling Type	2 x 4 La	y In	Yes		No	5 ceiling	tiles
Wall Type	Drywall/P	laster	No		No	None	
Flooring	12 x 12 \	/inyl	No		No	None	е
	Clean	Minor D / Debr			Corre	ective Action Require	ed
Ceiling	No	Yes	Yes	<b>S</b>	Remove	and replace ceiling	tiles
Walls	Yes	No	No				
Flooring	Yes	No	No				
HVAC Supply Gr	rills Yes	No	No				
HVAC Return Gr	ills No	Yes	Yes	3	Clean wi	th Wexcide disinfec	tant
Ceiling at Supply Grills	Yes	No	No				
Surfaces in Roo	m Yes	No	No				
bservations							
Findings: - 5 stained ceiling - Dust and debris of Humidity level was	on HVAC ret	urn grill					
Recommendation	ns:						
Site Based Maint - Remove and rep - Clean HVAC retu - Continue to moniappropriate	lace stained urn grill with \	Nexcide disi			as dust and d	ebris accumulation an	d clean as
Physical Plant Op - Evaluate cause of - Evaluate HVAC f	of stained cei			opriate priate to lower hu	midity level		

Norcrest Elementary School

0561

September 8, 2008

Location Number
Evaluation Requested

Time of Day		No	rcrest Elementa	ary School		Evaluati	on Requested	Septemb	er 8, 2008
Fish Temperature Range Relative Humidity Range CO2 Range # Occupants  905 75.7 72 - 78 51.4 30% - 60% 1344 Max 700 > Ambient 2  Noticeable Odor Yes Visible water damage / staining?  Ceiling Type 2 x 4 Lay In Yes 2 ceiling tiles and light grid  Wall Type Drywall/Plaster No No None  Flooring Carpet/laminate Yes No No @ 2 square feet  Ceiling No Yes Yes Remove and replace ceiling tiles  Walls Yes No No Clean and sanitize  HVAC Supply Grills Yes No No No  Ceiling at Supply Yes No	Time of Day	2:30 pm	]			E	valuation Date	Septemb	er 9, 2008
905   75.7   72 - 78   51.4   30% - 60%   1344   Max 700 > Ambient   2	Outdoor Condit	tions Tei	mperature	88.7	Relative Humidity	75.6	Ambier	nt CO2	364
Noticeable Odor Yes Visible water damage / staining?  Ceiling Type	Fish T	Temperature	Range Re	ative Humidity	Range	CO2	Rang	ge #	Occupants
Ceiling Type	905	75.7	72 - 78	51.4	30% - 60%	1344	Max 700 >	> Ambient	2
Wall Type Drywall/Plaster No No No No No No No Plooring Carpet/laminate Yes No @ 2 square feet  Clean Minor Dust / Debris Cleaning Cleaning Ceiling No Yes Yes Remove and replace ceiling tiles  Walls Yes No No No Plooring No Yes Yes Clean and sanitize  HVAC Supply Grills Yes No No No Ceiling at Supply Grills Yes No No No Ceiling at Supply Grills Yes No No No No Ceiling at Supply Yes No No No No Ceiling at Supply Grills Yes No No No No No No Ceiling at Supply Yes No Ceiling at Supply Yes No	Noticeable Ode	or Yes	da			bial		erial	
Flooring Carpet/laminate Yes No @ 2 square feet  Clean Minor Dust / Debris Cleaning Corrective Action Required  Ceiling No Yes Yes Remove and replace ceiling tiles  Walls Yes No No Clean and sanitize  HVAC Supply Grills Yes No No No Ceiling at Supply Yes No No No No No No Ceiling at Supply Yes No	Ceiling Type	2 x 4 Lay	/ In	Yes	Yes	[	2 ceiling tile	es and ligh	t grid
Clean Minor Dust / Debris Cleaning Corrective Action Required  Ceiling No Yes Yes Remove and replace ceiling tiles  Walls Yes No No Clean and sanitize  HVAC Supply Grills Yes No No No Ceiling at Supply Grills	Wall Type	Drywall/Pla	aster	No	No	[	N	None	
Ceiling No Yes Yes Remove and replace ceiling tiles  Walls Yes No No Clean and sanitize  HVAC Supply Grills Yes No No No Ceiling at Supply Grills  Ceiling Corrective Action Required  To a constant a	Flooring	Carpet/lam	inate	Yes	No	[	@ 2 s	quare feet	
Walls Yes No No No Clean and sanitize  HVAC Supply Grills Yes No No No Ceiling at Supply Grills Yes No No Ceiling at Supply Grills		Clean				Correc	tive Action Rec	quired	
Flooring No Yes Yes Clean and sanitize  HVAC Supply Grills Yes No No No Ceiling at Supply Yes No No No Grills	Ceiling	No	Yes	Yes	Re	emove a	nd replace ceil	ing tiles	
HVAC Supply Grills Yes No No No HVAC Return Grills Yes No No No Grills	Walls	Yes	No	No					
HVAC Return Grills Yes No No No Ceiling at Supply Yes No No Grills	Flooring	No	Yes	Yes		Cle	ean and sanitize	9	
Ceiling at Supply Yes No No Grills	HVAC Supply (	Grills Yes	No	No					
Grills	HVAC Return C	Grills Yes	No	No					
Surfaces in Room Yes No No		oly Yes	No	No					
	Surfaces in Ro	om Yes	No	No					

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Evaluation Requested September 8, 2008

**Location Number** 

# **Observations**

#### Findings: Music room

- Musty odor in room. Room is being used to store PE equipment (balls, etc.).
- 2 stained ceiling tiles and light grid in FISH 905 and 1 stained ceiling tile in FISH 905A
- Carpet is stained and soiled
- CO2 level was slightly elevated
- Teachers are opening windows and doors due to A/C temperature.

# Recommendations:

## Site Based Maintenance:

- Ensure that items being stored in room are cleaned prior to storing to eliminate allergen source
- Remove and replace stained ceiling tiles and wipe light grids
- Thoroughly clean carpet with extraction machine
- 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 light grid in FISH 905 and stained ceiling tile in FISH 905A and repair as appropriate.
- Evaluate HVAC for proper operation and repair as appropriate to lower CO2 level