

managing risk with responsibility

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May 12, 2006

Signature on File

TO:	Ms. Julianne Smith, Principal Forest Hills Elementary School
FROM:	Aston A. Henry, Jr., Supervisor

Risk Management Department

SUBJECT:Indoor Air Quality (IAQ) AssessmentFISH 850, 851, 852, 853, 854, 855, 856 and 857

On May 9, 2006 I conducted an assessment of FISH 850, 851, 852, 853, 854, 855, 856 and 857 at **Forest Hills 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 754-321-3200.

C: Dr. Joanne Harrison, Area Superintendent
Jackie Haywood, Area Director
Jeffrey S. Moquin, Director, Risk Management
Denise Cone, Project Manager, Facilities and Construction Management
Ruby Fitzgerald, Broward Teachers Union
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

AAH/tc Enc.

			IAQ As	sessment	Location	Number	2631	
	Forest	Hills Elementar	y School		Evaluatio	n Requested	May	5, 2006
Time of Day [11:40 am				Ev	aluation Date	May	9, 2006
Outdoor Condi	itions Tem	perature 9	0.2	Relative Humidit	y 49.9	Ambie	nt CO2	362
Fish	Temperature F	Range Rela	tive Humidity	Range	CO2	Ran	nge #	Occupants
850	69.7 7	2 - 78	67	30% - 60%	1233	Max 700	> Ambient	t 24
Noticeable Od	lor No		'isible water age / staining	Visible mic growth		Amount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Drywall		No	No			None	
Flooring	Tile		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correcti	ve Action Re	equired	
Ceiling	Yes	Νο	No					
Walls	Yes	No	No					
Flooring	No	Yes	Yes			See below		
HVAC Supply	Grills Yes	No	No					
HVAC Return	Grills Yes	Νο	No					
Ceiling at Sup Grills	ply Yes	No	No					
Surfaces in Ro	oom Yes	Νο	No					

Findings:

- Temperature was low and humidity level was elevated at the time of the assessment
- CO2 level was slightly elevated
- Glue coming up from underneath floor tiles

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

- Evaluate HVAC system for proper operation and repair as appropriate to increase temperature and lower humidity level
- Adjust fresh air intake/damper in order to lower CO2 level
- Remove and replace floor tiles as necessary

			IAQ Ass	sessment	Location N	umber	2631	
	Forest	Hills Elementary	/ School		Evaluation F	Requested	May s	5, 2006
Time of Day	11:00 am				Evalu	ation Date	May 9	9, 2006
Outdoor Condi	tions Tem	perature 9	0.2	Relative Humidity	49.9	Ambie	nt CO2	362
Fish 7	Femperature	Range Relat	ive Humidity	Range	CO2	Ran	ige #	Occupants
851	71.8 7	2 - 78	71	30% - 60%	1161	Max 700	> Ambient	25
Noticeable Od	or No		isible water age / staining	Visible micro ? growth?	obial Am	ount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Drywall		No	No			None	
Flooring	Tile		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective	Action Re	equired	
Ceiling	Yes	Νο	Νο					
Walls	Yes	No	No					
Flooring	Νο	Yes	Yes		Se	e below		
HVAC Supply	Grills Yes	Νο	No					
HVAC Return (Grills Yes	Νο	No					
Ceiling at Sup Grills	ply Yes	No	No					
Surfaces in Ro	oom Yes	No	No					

Findings:

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- Remove and replace floor tiles as necessary

			IAQ As	sessment	Location N	umber	2631	
	Forest	Hills Elementa	ry School		Evaluation I	Requested	May 8	5, 2006
Time of Day	11:40 am				Evalu	uation Date	May 9	9, 2006
Outdoor Conditio	ons Tem	perature	90.2	Relative Humidity	49.9	Ambie	nt CO2	362
Fish Te	mperature	Range Rela	tive Humidity	Range	CO2	Ran	ige #	Occupants
852	72.1 7	2 - 78	70.2	30% - 60%	1082] Max 700	> Ambient	1
Noticeable Odor	No		/isible water nage / staining	Visible micro g? growth?	obial An	nount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Drywall		No	No			None	
Flooring	Tile		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective	e Action Re	equired	
Ceiling	Yes	Νο	No					
Walls	Yes	No	No					
Flooring	No	Yes	Yes		Se	e below		
HVAC Supply Gr	rills Yes	No	No					
HVAC Return Gr	ills Yes	No	No					
Ceiling at Supply Grills	y Yes	No	No					
Surfaces in Room	m Yes	Νο	No					

Findings:

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Recommendations:

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- Remove and replace floor tiles as necessary

			IAQ Ass	sessment	Location N	lumber	2631	
	Fores	t Hills Elemen	tary School		Evaluation	Requested	May	5, 2006
Time of Day	11:00 am]			Eval	uation Date	May	9, 2006
Outdoor Cond	itions Te	mperature [90.2	Relative Humidity	49.9	Ambie	nt CO2	362
Fish	Temperature	Range R	elative Humidity	Range	CO2	Rar	nge #	Occupants
853	70.4	72 - 78	65.6	30% - 60%	956	Max 700	> Ambient	2
Noticeable Oc	dor No] d	Visible water amage / staining	Visible micro ? growth?		mount of ma affected	terial	
Ceiling Type	2 x 4 Lay	/ In	No	No			None	
Wall Type	Drywa	ll	Νο	No			None	
Flooring	Tile		No	No			None	
	Clean	Minor Dus / Debris	st Needs Cleaning		Correctiv	e Action Re	equired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	No	Yes	Yes		S	ee below		
HVAC Supply	Grills Yes	No	No					
HVAC Return	Grills Yes	No	No					
Ceiling at Sup Grills	oply Yes	No	No					
Surfaces in R	oom Yes	No	No					

Findings:

- Temperature was low and humidity level was elevated at the time of the assessment
- CO2 level was slightly elevated
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Recommendations:

Site Based Maintenance:

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			IAQ As	sessment	Location N	umber	2631	
	Forest	Hills Elementa	ary School		Evaluation F	Requested	May 8	5, 2006
Time of Day	11:30 am				Evalu	ation Date	May	9, 2006
Outdoor Condit	tions Ten	nperature	90.2	Relative Humidity	49.9	Ambie	nt CO2	362
Fish T	emperature	Range Re	lative Humidity	Range	CO2	Ran	ige #	Occupants
854	72.1	/2 - 78	63	30% - 60%	1002	Max 700	> Ambient	13
Noticeable Ode	or No	da	Visible water mage / staining	Visible micro ? growth?	obial Am	ount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Drywal		No	No			None	
Flooring	Tile		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective	Action Re	equired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	No	Yes	Yes		Se	e below		
HVAC Supply (Grills Yes	No	No					
HVAC Return C	Grills Yes	No	No					
Ceiling at Supp Grills	oly Yes	No	No					
Surfaces in Ro	om Yes	No	No					

Findings:

- Humidity level was elevated at the time of the assessment

- Glue coming up from underneath floor tiles

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 HVAC system for proper operation and repair as appropriate to lower humidity level

- Remove and replace floor tiles as necessary

			IAQ As	sessment	Location Nu	mber	2631	
	Forest	t Hills Elementa	ry School		Evaluation R	equested	May 5	5, 2006
Time of Day	11:00 am]			Evalua	ation Date	May 9	9, 2006
Outdoor Condi	itions Ter	nperature	90.2	Relative Humidity	49.9	Ambie	nt CO2	362
Fish	Temperature	Range Rela	ative Humidity	Range	CO2	Ran	ge #	Occupants
855	68.9 [·]	72 - 78	57.5	30% - 60%	724	Max 700	> Ambient	2
Noticeable Oc	dor No		Visible water nage / staining	Visible micro ? growth?	bial Amo	ount of mat affected	terial	
Ceiling Type	2 x 4 Lay	' In	No	No			None	
Wall Type	Drywal	I	No	No			None	
Flooring	Tile		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective	Action Re	equired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	No	Yes	Yes		See	below		
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					

Findings:

- Temperature was low at the time of the assessment

- Glue coming up from underneath floor tiles

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 HVAC system for proper operation and repair as appropriate to increase temperature

- Remove and replace floor tiles as necessary

			IAQ Ass	sessment	Location N	umber	2631	
	Forest	Hills Elementary	/ School		Evaluation F	Requested	May t	5, 2006
Time of Day	11:30 am				Evalu	ation Date	May 9	9, 2006
Outdoor Condit	tions Tem	perature 9	0.2	Relative Humidity	49.9	Ambie	nt CO2	362
Fish T	emperature F	Range Relat	ive Humidity	Range	CO2	Ran	ige #	Occupants
856	73.2 7	2 - 78	66	30% - 60%	11072	Max 700	> Ambient	19
Noticeable Ode	or No		isible water age / staining	Visible micro ? growth?		nount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Drywall		No	No			None	
Flooring	Tile		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective	Action Re	equired	
Ceiling	Yes	Νο	No					
Walls	Yes	No	No					
Flooring	No	Yes	Yes		Se	e below		
HVAC Supply (Grills Yes	Νο	No					
HVAC Return G	Grills Yes	Νο	No					
Ceiling at Supp Grills	oly Yes	No	No					
Surfaces in Ro	om Yes	No	No					

Findings:

- Humidity level was elevated at the time of the assessment

- CO2 level was slightly elevated

- Glue coming up from underneath floor tiles

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

- Evaluate HVAC system for proper operation and repair as appropriate to lower humidity level
- Adjust fresh air intake/damper in order to lower CO2 level
- Remove and replace floor tiles as necessary

		IAQ	Assessment	Locatio	on Number	2631	
	Forest Hills	Elementary Schoo	l	Evaluat	ion Requested	May 5	, 2006
Time of Day	11:00 am			I	Evaluation Date	May 9	, 2006
Outdoor Condition	ns Tempera	ture 90.2	Relative Hu	midity 49.9	Ambie	nt CO2	362
Fish Tem	nperature Rang	e Relative Hum	idity Range	CO2	Ran	ige # (Occupants
857	70.6 72 - 7 8	3 50.4	30% - 60%	1020	Max 700	> Ambient	2
Noticeable Odor	No	Visible wa damage / sta		e microbial owth?	Amount of ma affected	terial	
Ceiling Type	2 x 4 Lay In	No		No		None	
Wall Type	Drywall	No		No		None	
Flooring	Tile	No	Ľ	No		None	
	/	nor Dust Nee Debris Clea	ning	Correc	ctive Action Re	equired	
Ceiling	Yes	No	0				
Walls	Yes	No	0				
Flooring	Νο	Yes	es		See below		
HVAC Supply Gri	lls Yes	No	0				
HVAC Return Gri	lls Yes	No	0				
Ceiling at Supply Grills	Yes	No	0				
Surfaces in Roon	n Yes	No	0				

Findings:

CO2 level was slightly elevated Glue coming up from underneath floor tiles

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:

Adjust fresh air intake/damper in order to lower CO2 level

Remove and replace floor tiles as necessary