

# managing risk with responsibility

Telephone: 754-321-3200 Facsimile: 754-321-3290

Jeffrey S. Moquin, Director Risk Management Department

August 10, 2005

TO: Mr. Ramon Dawkins, Principal

**Larkdale Elementary School** 

FROM: Robert J. Krickovich, Coordinator, LEA

Facilities and Construction Management, Environmental Division

SUBJECT: Indoor Air Quality (IAQ) Assessment

FISH 701, 702, 703, 704, 705, 706, 707 and 708

On August 3, 2005 the IAQ Assessment Team conducted an assessment of FISH 701, 702, 703, 704, 705, 706, 707 and 708 at **Larkdale Elementary School**. The evaluation consisted of a walkthrough of the identified areas to assess the current condition of the location with regard to indoor air quality. This assessment included observations of the carpet, floor tile, ceiling tile, interior walls, false ceiling plenum, and accessible ventilation equipment.

Attached are the findings of this assessment along with recommendations for further assessment, remediation, or corrective actions, if needed.

Generally, the IAQ Assessment did not identify any existing conditions significantly impacting IAQ and thereby presenting immediate health and safety concerns 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. Harry LaCava, Area Superintendent
Fran Bolden, Area Director
Jeffrey S. Moquin, Director, Risk Management
Israel Rodriguez-Soto, Project Manager II, Facilities and Construction Management
Dane Ramson, 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.

	Lar	kdale Elemei	ntary School		Evaluat	ion Requested	Augus	st 3, 2005
Time of Day	3:15 pm				E	Evaluation Date	Augus	st 3, 2005
Outdoor Condi	tions Tei	mperature	88.9	Relative Humidity	64.2	Ambier	nt CO2	447
	Temperature		Relative Humidity	Range	CO2	Rang	•	Occupants
701	73.9	72 - 78	45.2	30% - 60%	632	Max 700 >	Ambien	t 3
Noticeable Od	or No	] ,	Visible water damage / staining	Visible micro g? growth?		Amount of mate affected	erial	
Ceiling Type	2 x 4 Lay	/ In	No	No			None	
Wall Type	Homosote/F	Plaster	No	No		1	None	
Flooring	12 x 12 V	inyl	No	No			None	
	Clean	Minor Du / Debris			Corre	ctive Action Red	quired	
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 Supp Grills	ply No	Yes	Yes		Cle	an as appropria	te	
Surfaces in Ro	oom Yes	No	No					

## Observations

## Findings:

- Dust and debris on ceiling at HVAC supply grills
- Ceiling tiles are bowed
- Rust on clocks
- Dust and debris on sides of light fixtures
- Slime on roof near fresh air intake
- Dust and debris inside HVAC unit and supply duct on roof

## Recommendations:

#### Site Based Maintenance:

- Clean ceiling at HVAC supply grills as appropriate
- Repaint or replace rusted clocks
- Clean light fixtures as appropriate
- 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 Division:

- Clear slime from roof and redirect fresh air intake away from source of slime
- Clean HVAC unit and supply duct on roof

## Project Manager:

## IAQ Assessment Larkdale Elementary School Evaluation Requested August 3, 2005

	Lai	kaale Elementa	ary School		∟vaiuat	ion Requested	Augusi	3, 2003
Time of Day	3:15 pm	]			E	Evaluation Date	August	3, 2005
Outdoor Condi	tions Tei	mperature	88.9	Relative Hum	idity 64.2	Ambien	t CO2	447
Fish	Temperature	Range Rel	ative Humidity	' Range	CO2	Rang	ge # (	Occupants
702	66.4	72 - 78	58.8	30% - 60%	553	Max 700 >	> Ambient	2
Noticeable Od	or Yes	da	Visible water mage / staining		microbial wth?	Amount of mate affected	erial	
Ceiling Type	2 x 4 La <sub>3</sub>	/ In	Yes	N	lo	3 stained tiles	s over white	eboard
Wall Type	Homosote/F	Plaster	No	N	lo	N	None	
Flooring	12 x 12 V	inyl	No	N	lo		None	
	Clean	Minor Dust / Debris	Needs Cleaning	I	Correc	ctive Action Rec	quired	
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 Support Grills	ply No	Yes	Yes		Clea	an as appropria	te	

#### **Observations**

#### Findings:

- Dust and debris on ceiling at HVAC supply grills

Yes

- Ceiling tiles are bowed

**Surfaces in Room** 

- 3 stained ceiling tiles over whiteboard and 1 stained ceiling tile in center of corridor

No

- Rust on clocks
- Dust and debris on sides of light fixtures
- Slime on roof near fresh air intake
- Dust and debris inside HVAC unit and supply duct on roof
- Temperature was low at the time of assessment

#### Recommendations:

#### Site Based Maintenance:

- Clean ceiling at HVAC supply grills as appropriate
- Replace stained ceiling tiles
- Repaint or replace rusted clocks
- Clean light fixtures as appropriate
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

No

#### Physical Plant Operations Division:

- Clear slime from roof and redirect fresh air intake away from source of slime
- Clean HVAC unit and supply duct on roof
- Evaluate and repair HVAC to increase temperature

#### Project Manager:

	Lar	kdale Elemer	ntary School		Evaluat	ion Requested _	Augus	13, 2005
Time of Day	3:15 pm	]			E	Evaluation Date	Augus	t 3, 2005
Outdoor Condit	tions Ter	mperature	88.9	Relative Humidity	y 64.2	Ambien	it CO2	447
Fish T	Temperature	Danas F	Salativa Urumiditu		CO2		ш	0
703	<u> </u>		Relative Humidity 57.8	go	<b>CO2</b> 556	Rang	•	Occupants 2
703	67.4	72 - 78		30% - 60%		Max 700 >		t
Noticeable Ode	or Yes	] ,	Visible water damage / staining	Visible micr growth		Amount of mate affected	erial	
Ceiling Type	2 x 4 Lay	/ In	No	No		ı	None	
Wall Type	Homosote/F	Plaster	No	No			None	
Flooring [	12 x 12 Vi	nyl	No	No			None	
	Clean	Minor Du: / Debris			Correc	ctive Action Rec	quired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	Yes	No	No					
HVAC Supply (	Grills Yes	No	No					
HVAC Return C	Grills Yes	No	No					
Ceiling at Supp Grills	oly No	Yes	Yes		Clea	an as appropria	te	
Surfaces in Ro	om Yes	No	No					

## Observations

## Findings:

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- Temperature was low at the time of assessment

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#### Physical Plant Operations Division:

- Clear slime from roof and redirect fresh air intake away from source of slime
- Clean HVAC unit and supply duct on roof
- Evaluate and repair HVAC to increase temperature

#### Project Manager:

	Larkdale Ele	ementary School		Evaluation	on Requested A	ugust 3, 2005
Time of Day 3:	15 pm			E	valuation Date A	ugust 3, 2005
<b>Outdoor Conditions</b>	Temperatu	re 88.9	Relative Humidity	64.2	Ambient CC	02 447
Fish Tempe	rature Range	Relative Humidity	/ Range	CO2	Range	# Occupants
704 68	8.1 <b>72 - 78</b>	55.1	30% - 60%	572	Max 700 > Am	bient 2
Noticeable Odor	Yes	Visible water damage / stainin	Visible micro g? growth?	bial	Amount of material affected	
Ceiling Type	2 x 4 Lay In	No	No		None	
Wall Type Ho	mosote/Plaster	No	No		None	
Flooring	12 x 12 Vinyl	No	No	[	None	
		Dust Needs bris Cleaning	9	Correc	tive Action Require	ed
Ceiling	Yes	o No				
Walls	Yes	No				
Flooring	Yes	No				
<b>HVAC Supply Grills</b>	Yes	No				
HVAC Return Grills	Yes	No				
Ceiling at Supply Grills	No Y	Yes		Clea	n as appropriate	
Surfaces in Room	Yes	o No				

## Observations

#### Findings:

- Dust and debris on ceiling at HVAC supply grills
- Ceiling tiles are bowed
- Rust on clocks
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#### Physical Plant Operations Division:

- Clear slime from roof and redirect fresh air intake away from source of slime
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- Evaluate and repair HVAC to increase temperature

#### Project Manager:

	Lar	kdale Elementar	y School		Evaluation	Requested [	August 3	3, 2005
Time of Day	3:15 pm	]			Eval	uation Date [	August 3	3, 2005
Outdoor Condi	tions Ter	nperature 8	8.9	Relative Humidity	64.2	Ambier	nt CO2	447
Fish	Temperature	Range Relat	ive Humidity	Range	CO2	Ran	ge #C	Occupants
705	68.6	72 - 78	53.9	30% - 60%	602	Max 700 :	> Ambient	2
Noticeable Od	lor Yes		isible water age / staining	Visible micro? growth?	, , ,	nount of mat	erial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Homosote/F	laster	No	No			None	
Flooring	12 x 12 Vi	nyl	No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective	e Action Re	quired	
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 Sup Grills	ply No	Yes	Yes		Clean a	is appropria	ite	
Surfaces in Ro	oom Yes	No	No					

## **Observations**

#### Findings:

- Dust and debris on ceiling at HVAC supply grills
- Ceiling tiles are bowed
- 3 live plants in room
- 3M office air cleaners in room with dirty filters
- Rust on clocks
- Dust and debris on sides of light fixtures
- Slime on roof near fresh air intake
- Dust and debris inside HVAC unit and supply duct on roof
- Temperature was low at the time of assessment

#### Recommendations:

## Site Based Maintenance:

- Clean ceiling at HVAC supply grills as appropriate
- Remove live plants from room
- Change air filters in 3M air cleaners or remove air cleaners
- Repaint or replace rusted clocks
- Clean light fixtures as appropriate
- 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 Division:

- · Clear slime from roof and redirect fresh air intake away from source of slime
- Clean HVAC unit and supply duct on roof
- Evaluate and repair HVAC to increase temperature

#### Project Manager:

	La	rkdale Elementar	y School		Evaluation Requested	August 3, 2005
Time of Day	3:15 pm				Evaluation Dat	e August 3, 2005
Outdoor Condi	tions Te	mperature 8	88.9	Relative Humidity	64.2 Amb	ient CO2 447
Fish 1	Temperature	Range Rela	tive Humidity	Range	CO2 Ra	ange # Occupants
706	66.7	72 - 78	57.7	30% - 60%	621 Max 70	0 > Ambient 3
Noticeable Od	or Yes		/isible water age / staining	Visible micro? growth?	7 till Galle Gi II	
Ceiling Type	2 x 4 La	y In	Yes	No	2 stained t	iles near whiteboard
Wall Type	Homosote/I	Plaster	No	No		None
Flooring	12 x 12 V	inyl	No	No		None
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective Action I	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 Supp Grills	ply No	Yes	Yes		Clean as approp	riate
Surfaces in Ro	oom Yes	No	No			

## Observations

#### Findings:

- Dust and debris on ceiling at HVAC supply grills
- Ceiling tiles are bowed
- 2 stained ceiling tiles near whiteboard
- Rust on clocks
- Dust and debris on sides of light fixtures
- Slime on roof near fresh air intake
- Dust and debris inside HVAC unit and supply duct on roof
- Temperature was low at the time of assessment

#### Recommendations:

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- Replace stained ceiling tiles
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<u> </u>	Larkdale Elem	entary School		Evaluation	n Requested /	August 3, 2005
Time of Day 3:	15 pm			Eva	aluation Date	August 3, 2005
<b>Outdoor Conditions</b>	Temperature	88.9	Relative Humidity	64.2	Ambient Co	O2 447
Fish Tempe	erature Range	Relative Humidity	Range	CO2	Range	# Occupants
707 6	<b>72 - 78</b>	60.3	30% - 60%	587	Max 700 > An	nbient 2
Noticeable Odor	Yes	Visible water damage / staining	Visible micro g? growth?	bial <i>j</i>	Amount of material affected	
Ceiling Type	2 x 4 Lay In	No	No		None	е
Wall Type Ho	omosote/Plaster	No	No		None	9
Flooring	12 x 12 Vinyl	No	No		Non	е
	Clean Minor D			Correcti	ve Action Require	ed
Ceiling	Yes No	No				
Walls	Yes No	No				
Flooring	Yes No	No				
HVAC Supply Grills	Yes No	No				
HVAC Return Grills	Yes	No				
Ceiling at Supply Grills	No	Yes		Clean	as appropriate	
Surfaces in Room	Yes No	No				

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	Temperature	Range	Relative Humidity	Range	CO2	Ranç	
708	68.9	72 - 78	61.6	30% - 60%	548	Max 700 >	> Ambient 2
Noticeable Od	lor Yes		Visible water damage / staining		microbial wth?	Amount of mate affected	erial
Ceiling Type	2 x 4 La	ay In	No	N	0		None
Wall Type	Homosote	/Plaster	No	N	0	ı	None
Flooring	12 x 12	Vinyl	No	N	o		None
	Clean	Minor D / Debri		l	Correc	ctive Action Red	quired
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 Sup Grills	ply No	Yes	Yes		Clea	an as appropria	ite
Surfaces in Ro	oom Yes	No	No				

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