



Jeffrey S. Moquin, Director Risk Management Department

February 23, 2007

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Signature on File

TO:	Ms. Marina Rashid, Principal
	Eagle Ridge Elementary School

- FROM: Robert J. Krickovich, Coordinator, LEA Facilities and Construction Management, Environmental Division
- SUBJECT:Indoor Air Quality (IAQ) AssessmentFISH 101, 110, 114, 220, 317, 401, 408 and 409

On February 9, 2007 I conducted an assessment of FISH 101, 110, 114, 220, 317, 401, 408 and 409 at **Eagle Ridge 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 754-321-1638.

cc: Dr. Joanne Harrison, Area Superintendent
Craig Anderson, Area Director
Jeffrey S. Moquin, Director, Risk Management
Paul Bach, 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

RK/tc Enc.

			IAQ Ass	sessment	Location	Number	3441	
	Eagle R	idge Elementary	v School		Evaluatio	n Requested	Februar	y 7, 2007
Time of Day	10:30 am				Ev	aluation Date	Februar	y 9, 2007
Outdoor Conditi	ons Tem	perature 7	7.3	Relative Humidity	/ 52.6	Ambie	nt CO2	466
Fish Te		Range Relat	ive Humidity	Range	CO2	Ran	ige #	Occupants
101	71.5 7	2 - 78	48.6	30% - 60%	826	Max 700	> Ambient	7
Noticeable Odo	r No		isible water age / staining	Visible micr ? growth		Amount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Drywall/Tack	poard	No	No	Ľ		None	
Flooring	Carpet		Yes	No	Γ	Stain in	center of ro	oom
	Clean	Minor Dust / Debris	Needs Cleaning		Correct	ive Action Re	equired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	Νο	Yes	Yes		Clear	n as appropri	ate	
HVAC Supply G	rills Yes	No	No					
HVAC Return G	rills Yes	No	No					
Ceiling at Suppl Grills	y Yes	Νο	No					
Surfaces in Roo	om Yes	Νο	No					

Findings: Administration

- Complaint of odor

- Cloth covered display boards are mounted on the tackboard wall display boards and are holding moisture
- Vinyl backed floor mats on carpet at entry doors are trapping moisture in the carpet
- Temperature was low at the time of the assessment
- Stain on carpet in the center of the room

Recommendations:

Site Based Maintenance:

- Remove display boards from walls
- Remove vinyl backed floor mats
- Clean and sanitize rug to remove stain in the center of the room

- 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 for proper operation and adjust to increase temperature
- Remove carpet from in front of entry doors and replace with tile

			IAQ Ass	sessment	Location N	umber	3441	
	Eagle Ri	dge Elementary	School		Evaluation I	Requested	Februar	y 7, 2007
Time of Day	10:30 am				Evalu	uation Date	Februar	y 9, 2007
Outdoor Conditio	ons Tem	perature 77	7.3	Relative Humidity	52.6	Ambie	nt CO2	466
Fish Ter	mperature R	ange Relat	ive Humidity	Range	CO2	Ran	ge #	Occupants
110	71.3 7 2	2 - 78	52	30% - 60%	1361] Max 700	> Ambient	24
Noticeable Odor	Yes		sible water age / staining	Visible micro ? growth?	obial An	nount of mat affected	terial	
Ceiling Type	2 x 4 Lay I	n	No	No			None	
Wall Type	Drywall		No	No			None	
Flooring	Carpet/VC1		Yes	No		En	tire carpet	
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective	Action Re	equired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	No	Yes	Yes		Remove ar	nd replace	carpet	
HVAC Supply Gr	ills No	Yes	Yes	C	lean with W	excide disi	infectant	
HVAC Return Gr	ills No	Yes	Yes	C	lean with W	excide disi	infectant	
Ceiling at Supply Grills	/ No	Yes	Yes		Clean a	s appropri	ate	
Surfaces in Roor	n Yes	No	No					

Findings: Music Room

- Carpet is severely rippled, torn and delaminating severe trip hazard
- Dust and debris on HVAC supply and return grills and on ceiling at supply grills
- Temperature was low and CO2 level was elevated at the time of the assessment

Recommendations:

Site Based Maintenance:

Clean HVAC supply and return grills with Wexcide disinfectant solution and clean ceiling at 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:

Remove and replace carpet

- Evaluate HVAC for proper operation and adjust to increase temperature and lower CO2 level

		IAQ As	sessment	Location Number	3441
	Eagle Ridge Eler	mentary School		Evaluation Requested	February 7, 2007
Time of Day 10):30 am			Evaluation Date	February 9, 2007
Outdoor Conditions	5 Temperature	e 77.3	Relative Humidity	52.6 Ambie	nt CO2 466
Fish Temp	erature Range	Relative Humidity	Range	CO2 Ran	ige # Occupants
114 7	73.8 72 - 78	49.9	30% - 60%	1687 Max 700	> Ambient 21
Noticeable Odor	No	Visible water damage / staining	Visible micro growth?	bial Amount of ma affected	terial
Ceiling Type	2 x 4 Lay In	No	No		None
Wall Type	Drywall	Νο	No		None
Flooring	12 x 12 Vinyl	No	No		None
	Clean Minor / Deb	oris Cleaning		Corrective Action Re	equired
Ceiling	Yes	No			
Walls	Yes	No			
Flooring	Yes	No			
HVAC Supply Grills	s Yes No	No			
HVAC Return Grills	S Yes No	No			
Ceiling at Supply Grills	Yes	No			
Surfaces in Room	Yes	No			

Findings: Storage room being used a science lab - Room is not being used for purposes as designed

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

Project Manager/Safety Department: - Evaluate current use of the room - exiting, air flow, occupancy, etc.

			IAQ As	sessment	Location N	umber	3441	
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Outdoor Conditio	ons Tem	perature 7	7.3	Relative Humidity	52.6	Ambie	nt CO2	466
Fish Ter	nperature	Range Rela	tive Humidity	Range	CO2	Rar	ige #	Occupants
220	67.6 7	2 - 78	57.6	30% - 60%	918] Max 700	> Ambient	21
Noticeable Odor	No		/isible water age / staining	Visible micro 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	12 x 12 Vin	yl	No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective	e Action Re	equired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	Yes	No	No					
HVAC Supply Gr	ills Yes	No	No					
HVAC Return Gr	ills Yes	No	No					
Ceiling at Supply Grills	Yes	No	No					
Surfaces in Roor	n Yes	Νο	No					

Findings:

- Dust build up on damper inside of HVAC return grill
- Water stains on vinyl floor of storage room FISH 220B
- Dust build up on top of wall cabinet above sink
- Sink backsplash needs caulking

FISH 210 - Mechanical Room - Filters clean, inside of HVAC unit has minor dust, drain pan clean, less than 1/4 inch of clear water in pan with no visible growth and pan is draining properly. Supply side chilled water 47 degrees, return side 52 degrees.
Temperature was low at the time of the assessment

Recommendations:

Site Based Maintenance:

- Clean and sanitize floor in FISH 220B storage room
- Thoroughly clean elevated surfaces in room top of wall cabinet above sink

- 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:

- Clean damper inside of HVAC return grill
- Caulk sink backsplash
- Clean minor dust from inside HVAC unit in FISH 210
- Evaluate HVAC for proper operation and adjust to increase temperature

			IAQ Ass	sessment	Location	n Number	3441	
	Eagle Rid	ge Elementary	[,] School		Evaluatio	on Requested	Februar	y 7, 2007
Time of Day 10	0:30 am				E١	aluation Date	Februar	y 9, 2007
Outdoor Conditions	s Temp	erature 77	7.3	Relative Humidit	y <u>52.6</u>	Ambie	nt CO2	466
Fish Temp	perature Ra	inge Relati	ive Humidity	Range	CO2	Ran	ge #	Occupants
317	70.9 72	- 78	53.4	30% - 60%	1175	Max 700	> Ambient	22
Noticeable Odor	No		isible water age / staining	Visible mic growth		Amount of mat affected		
Ceiling Type	2 x 4 Lay In		Yes	No		2 ce	eiling tiles	
Wall Type	Drywall		No	No			None	
Flooring	12 x 12 Vinyl		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correct	ive Action Re	quired	
Ceiling	Νο	Yes	Yes	I	Remove ar	nd replace cei	ling tiles	
Walls	Yes	No	No					
Flooring	No	Yes	Yes		Clea	an and sanitiz	e	
HVAC Supply Grill	s Yes	No	No					
HVAC Return Grills	s Yes	Νο	No					
Ceiling at Supply Grills	Yes	Νο	No					
Surfaces in Room	No	Yes	Yes		Clear	n as appropri	ate	

Findings: Art Room

- Dust and debris on floor. Room is too cluttered to be cleaned properly by custodial staff.
- Dust and debris on envnironmental surfaces. Room is too cluttered to be cleaned properly by custodial staff.
- 2 stained ceiling tiles one over teachers desk at exhaust fan and one at the door to FISH 317A
- Temperature was low at the time of the assessment

Recommendations:

Site Based Maintenance:

- Advise occupant to reduce clutter in the room. Clean and sanitize floor.

- Advise occupant to reduce clutter in the room. Thoroughly clean all surfaces throughout the room.

- 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 repair as appropriate and replace stained ceiling tiles.

- Evaluate HVAC for proper operation and adjust to increase temperature

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Outdoor Condi	itions Tem	perature 7	7.3	Relative Humidity	52.6	Ambie	nt CO2	466
Fish	Temperature F	Range Relat	ive Humidity	Range	CO2	Ran	ige #	Occupants
401	68.3 7	2 - 78	62.3	30% - 60%	743	Max 700	> Ambient	20
Noticeable Od	lor No		isible water age / staining?	Visible micro ? growth?		mount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Drywall		No	No			None	
Flooring	Carpet		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correctiv	ve Action Re	equired	
Ceiling	Yes	No	No					
Walls	Yes	Νο	No					
Flooring	No	Yes	Yes		Clean	as appropri	ate	
HVAC Supply	Grills Yes	No	No					
HVAC Return	Grills Yes	No	No					
Ceiling at Sup Grills	ply Yes	Νο	No					
Surfaces in Ro	oom No	Yes	Yes		Clean	as appropri	ate	

Findings: Media Center

- Dust build up on damper inside of HVAC return grill
- Minor staining on carpet. Dust build up under and behind aquarium stand at FISH 401E.
- Books were free of dust build up. Minor dust build up on shelves throughout the media center.
- Inside of electrical floor boxes were clean and dry
- Temperature was low and humidity level was elevated at the time of the assessment

Recommendations:

Site Based Maintenance:

- Clean carpet under and behind aquarium at FISH 401E
- Thoroughly clean shelves throughout the media center

- 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:

- Clean damper inside of HVAC return grill

- Evaluate HVAC for proper operation and adjust to increase temperature and lower humidity level

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Outdoor Conditio	ons Tem	perature 7	7.3	Relative Humidity	7 52.6 Ambi	ent CO2 466
Fish Te	mperature	Range Relat	ive Humidity	Range	CO2 Ra	inge # Occupants
408	71.3 7	2 - 78	50.8	30% - 60%	900 Max 70	0 > Ambient 22
Noticeable Odor	r Yes		isible water age / staining	Visible micr ? growth?		
Ceiling Type	2 x 4 Lay	In	No	No		None
Wall Type	Drywall/Tack	board	No	No		None
Flooring	Carpet		Yes	No	E	ntire carpet
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective Action F	Required
Ceiling	Yes	No	No			
Walls	No	Yes	Yes		Clean as approp	riate
Flooring	No	Yes	Yes		Remove and replace	e carpet
HVAC Supply G	rills No	Yes	Yes		Clean with Wexcide di	sinfectant
HVAC Return Gr	rills Yes	Νο	No			
Ceiling at Supply Grills	у No	Yes	Yes		Clean as approp	riate
Surfaces in Roo	m No	Yes	Yes		Clean as approp	riate

Findings: Computer Lab

- Carpet is severely rippled, torn and stained

- Dust and debris on HVAC supply grills and on ceiling at supply grills

- Dust build up on walls in front of HVAC supply grills

- Temperature was low and humidity level was elevated at the time of the assessment

Recommendations:

Site Based Maintenance:

- Clean HVAC supply grills with Wexcide disinfectant solution and clean ceiling at supply grills

- Clean walls in front of HVAC supply grills to remove dust build up

- 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:

- Remove and replace carpet

- Evaluate HVAC for proper operation and adjust to increase temperature and lower humidity level

			IAQ As	sessment	Location Num	nber	3441	
	Eagle R	idge Elementary	y School		Evaluation Red	quested	February	7, 2007
Time of Day	10:30 am				Evaluat	ion Date	February	/ 9, 2007
Outdoor Condition	ns Tem	perature 7	7.3	Relative Humidity	52.6	Ambie	nt CO2	466
Fish Tem	perature	Range Relat	ive Humidity	Range	CO2	Ran	ge #	Occupants
409	68.2 7	2 - 78	53.6	30% - 60%	792	Max 700	> Ambient	20
Noticeable Odor	Yes	=	isible water age / staining	Visible micro growth?	7	unt of mat affected	erial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Drywall/Tack	board	No	No			None	
Flooring	Carpet		Yes	No		Ent	ire carpet	
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective A	ction Re	quired	
Ceiling	Yes	No	No					
Walls	No	Yes	Yes		Clean as a	appropria	ate	
Flooring	No	Yes	Yes		Remove and	replace of	carpet	
HVAC Supply Gril	ls No	Yes	Yes	C	lean with Wex	cide disi	nfectant	
HVAC Return Gril	Is Yes	Νο	No					
Ceiling at Supply Grills	Νο	Yes	Yes		Clean as a	appropria	ate	
Surfaces in Room	No	Yes	Yes		Clean as a	appropria	ate	

Findings: Computer Lab

- Carpet is severely rippled, torn and stained

- Dust and debris on HVAC supply grills and on ceiling at supply grills

- Dust build up on walls in front of HVAC supply grills

- Temperature was low and humidity level was elevated at the time of the assessment

Recommendations:

Site Based Maintenance:

- Clean HVAC supply grills with Wexcide disinfectant solution and clean ceiling at supply grills

- Clean walls in front of HVAC supply grills to remove dust build up

- 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:

- Remove and replace carpet

- Evaluate HVAC for proper operation and adjust to increase temperature and lower humidity level