

managing risk with responsibility

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

Jeffrey S. Moquin, Director Risk Management Department

April 11, 2005

TO: Ms. Aimee Zekofsky, Principal

Apollo Middle School

FROM: Kenneth I. Partee, Project Manager, Occupational Health and Environmental

Control

Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

FISH 112, 137, 201F, 201P, 201R, 201T, 201 (multiple) and HVAC - Entire School

On March 30, 2005 the IAQ Assessment Team conducted an assessment of FISH 112, 137, 201F, 201P, 201R, 201T, 201 (multiple) and HVAC – Entire School at **Apollo Middle 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 754-321-3200.

cc: Sam Gregg, Area Superintendent

Tina Butler, Area Director

Jeffrey S. Moquin, Director, Risk Management

David DeWald, Project Manager II, Facilities and Construction Management

Ralph Eckhardt, 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

KP/tc

Enc.

		Apollo Mido	die School		Evaluat	ion Requested	Marci	n 30, 2005)
Time of Day	2:00 pm				I	Evaluation Date	March	h 30, 2005	5
Outdoor Condi	itions Te	mperature	78.1	Relative Hum	idity 40.9	Ambier	ıt CO2 [444]
	_								
Fish	Temperature	Range	Relative Humidity	' Range	CO2	Ranç	je :	# Occupa	ants
112	72.2	72 - 78	55.5	30% - 60%	1119	< 1,000	PPM	21	
Noticeable Od	lor No		Visible water damage / staining		microbial wth?	Amount of mate affected	∍rial		
Ceiling Type	2 x 4 La	y In	No	N	0		None]
Wall Type	Sheetro	ock	No	N	0	1	None		コ
Flooring	Tile		No	N	0		None		$\supset $
	Clean	Minor D / Debri		I	Corre	ctive Action Rec	quired		
Ceiling	Yes	No	No						$\Box \mid$
Walls	Yes	No	No						$\supset \Big $
Flooring	Yes	No	No						$\supset $
HVAC Supply	Grills Yes	No	No						$\Box $
HVAC Return	Grills No	Yes	Yes		Clean wit	h Wexcide Disir	nfectant		$\exists $
Ceiling at Sup Grills	ply Yes	No	No						$\exists $
Surfaces in Ro	oom Yes	No	No						

Observations

Findings:

- No visible signs of microbial growth or water intrusion
- Dust and debris on HVAC supply and return grills
- Teacher's desk has many books and paper on top and is in front of a storage closet and smells may be off-gassing from paper and corrugation

Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with wexcide disinfectant solution
- Recommend moving teacher's desk
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

	A	pollo Middle So	chool		Evaluation Re	equested	March 30, 2005
Time of Day	1:45 pm				Evalua	tion Date	March 30, 2005
Outdoor Condi	tions Tem	perature 7	8.1 Re	elative Humidity	40.9	Ambien	t CO2 444
Fish	Temperature F	Range Relat	ive Humidity	Range	CO2	Rang	ge # Occupants
137	74.2 7	2 - 78	51.5	0% - 60%	1120	< 1,000	PPM 25
Noticeable Od	lor No	-	isible water age / staining?	Visible micr growth		ount of mate affected	erial
Ceiling Type	2 x 4 Lay	In	Yes	No		One C	Ceiling Tile
Wall Type	Sheetroc	k	No	No		N	lone
Flooring	Tile		No	No		ı	None
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective A		·
Ceiling	No	No	No	R	emove and Re	place Stai	ned Tile
Walls	Yes	No	No				
Flooring	No	Yes	Yes		Clean and	Sanitize Fl	oor
HVAC Supply	Grills Yes	No	No				
HVAC Return (Grills No	Yes	Yes		Clean with We	cide Disir	nfectant
Ceiling at Sup Grills	ply Yes	No	No				
Surfaces in Ro	oom Yes	No	No				

Observations

Findings:

- No visible signs of microbial growth or water intrusion
- False ceiling plenum appeared clean and dry at accessed location
- One stained ceiling tile by air supply vent
- Dust and debris on floor
- Dust and debris on HVAC return grill

Recommendations:

Site Based Maintenance:

- Remove and replace stained ceiling tile
- Clean and sanitize floor
- 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 Division:

- Evaluate fresh air damper and repair as appropriate

-		Apollo Midd	le School		Evaluat	ion Requested	iviarc	in 30, 2005
Time of Day	1:00 pm				ı	Evaluation Date	Marc	h 30, 2005
Outdoor Condit	tions Te	emperature	78.1	Relative Hum	idity 40.9	Ambier	nt CO2	444
								_
Fish T	emperature	Range	Relative Humidity	Range	CO2	Rang	ge	# Occupants
201F	77.1	72 - 78	49.6	30% - 60%	895	< 1,000	PPM	3
Noticeable Od	or No		Visible water damage / staining		microbial owth?	Amount of mate affected	erial	
Ceiling Type	2 x 4 La	ay In	No	N	lo		None	
Wall Type	Concr	ete	No	N	lo l	ľ	None	
Flooring	Carpe	et	No	N	lo		None	
	Clean	Minor Du / Debri		l	Corre	ctive Action Re	quired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	No	Yes	Yes		Clean	and Sanitize Ca	arpet	
HVAC Supply	Grills Yes	No	No					
HVAC Return (Grills				No Re	eturn Grill Ident	ified	
Ceiling at Supp Grills	oly Yes	No	No					
Surfaces in Ro	om Yes	No	No					

Observations

Findings:

- No visible signs of microbial growth
- False ceiling plenum appeared clean and dry at accessed location
- Dust and debris on carpet
- Dust and debris in air supply duct work
- Air supply vents appeared clean

AHU 6 - Services 201 Area - Standing water in drain pan with slight algae build up. Coils and filtration media appeared clean.

Recommendations:

Site Based Maintenance:

- Clean and sanitize carpet
- 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:

- Clean air supply duct work
- Evaluate AHU 6 and clean and repair as appropiate

		Apollo Middle S	chool		Evaluation	Requested	Mar	ch 30, 2005
Time of Day	12:20 pm				Eva	luation Date	Mar	ch 30, 2005
Outdoor Cond	itions Te	mperature 7	8.1	Relative Humidity	40.9	Ambien	t CO2	444
Fish 201P	Temperature	Range Relati	tive Humidity	Range 30% - 60%	CO2	Rang		# Occupants
Noticeable Oc	dor No		 isible water age / staining	Visible micro ? growth?		Imount of mate affected	erial	
Ceiling Type	2 x 4 La		No	No			None	
Wall Type	Drywall/Co	ncrete	No	No		N	None	
Flooring	Tile		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correctiv	re 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 Yes	No	No					
Surfaces in Ro	oom No	Yes	Yes		Clean	as appropria	te	
) Dbservations								
Findings:	e etrippore and	old printers locate	nd in this room	<u> </u>				
Recommendation		olu printers locate	:u III tilis 10011	ı				
Site Based Mair - Remove floor n	ntenance: nachines, stripp	ers and printers fon for any signs o	rom room and f microbial gro	d clean as appropria owth as well as dust	ate t and debris	accumulation	and cl	ean as

Apollo Middle School					Evaluat	ion Requested	March 30, 2005
Time of Day	12:20 pm				ı	Evaluation Date	March 30, 2005
Outdoor Condit	tions To	emperature	78.1	Relative Humidity	40.9	Ambient	CO2 444
Fish T	emperature	Range	Relative Humidity	[/] Range	CO2	Range	# Occupants
201R	77.8	72 - 78	52.1	30% - 60%	823	< 1,000 P	PM 6
Noticeable Ode	or Yes		Visible water damage / staining	Visible micro g? growth?	bial	Amount of materi affected	al
Ceiling Type	2 x 4 La	ay In	No	No		No	one
Wall Type	Drywall/Co	oncrete	No	No		No	one
Flooring	Tile		No	No		No	one
	Clean	Minor Dı / Debri		J	Corre	ctive Action Requ	iired
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 Yes	No	No				
Surfaces in Ro	om Yes	No	No				

Observations

Findings:

- No visible signs of microbial growth
- False ceiling plenum appeared clean and dry at accessed location
- Air purifier located in the room
- Plug in air freshener (Renuzit) located in the room (cause of noticeable odor)
- Area rugs located in the room
- One plant located in the room
- Dust and debris in air supply and return duct work

Recommendations:

Site Based Maintenance:

- Remove plug in air freshener (Renuzit)
- Remove area rugs
- Remove plant
- 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:

- Clean air supply and return duct work

			Apollo Mido	lle School			Evaluat	ion Requested [Mar	ch 30, 200	05
Time of Day	12:	20 pm					E	Evaluation Date	Mar	ch 30, 200	05
Outdoor Cond	itions	Te	mperature	78.1	Rel	ative Humidity	/ 40.9	Ambie	nt CO2	444	
Fish	Tempe	rature	D	Dalatina Homi	-1:4		000			" 0	
201T	Tempe		Range 72 - 78	Relative Humi		Range % - 60%	CO2	Ran < 1,000	_	# Occup	oants
	F		72-70 [⊐	Visible wat		Visible micr	obial	Amount of mat			
Noticeable Oc	oor [No		damage / stair		growth		affected	Cilai		
Ceiling Type		2 x 4 La	y In	No		No			None		
Wall Type	Dr	ywall/Co	ncrete	No		No			None		
Flooring		Carpe	t	No		No			None		
	•	Clean	Minor Debri				Correc	ctive Action Re	quired		
Ceiling		Yes	No	No							
Walls		Yes	No	No							
Flooring		No	No	No		Rei	move Ca	rpet and Instal	Tile Flo	oor	
HVAC Supply	Grills	Yes	No	No							
HVAC Return	Grills	No	No	No			Ret	urn Grill Missi	ng		
Ceiling at Sup Grills	ply	Yes	No	No							
Surfaces in Ro	oom	Yes	No	No							
bservations											
Findings: - Carpet is stained	ed and	dirty									

0

- HVAC return grill is missing
- Dust and debris in air supply and return duct work

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 Division:

- Remove carpet and install tile floor
- Install HVAC return grill in the door
- Clean air supply and return duct work

-		Apollo Middle 8	School		Evaluat	ion Requested	Mar	ch 30, 2005
Time of Day	12:20 pm				E	Evaluation Date	Mar	ch 30, 2005
Outdoor Condit	ions Ter	mperature	78.1	Relative Humidity	40.9	Ambien	t CO2	444
Fish T		Range Rela	ative Humidity	Range 30% - 60%	CO2	Rang < 1,000		# Occupants
Noticeable Odd	or No		Visible water nage / staining	Visible micro?		Amount of mate	erial	
Ceiling Type	2 x 4 Lay		No	No			None	
Wall Type [Drywall/Cor	ncrete	No	No		N	lone	
Flooring	Tile		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Rec	quired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	Yes	No	No					
HVAC Supply 0	Grills Yes	No	No					
HVAC Return G	Grills Yes	No	No					
Ceiling at Supp Grills	oly Yes	No	No					
Surfaces in Ro	om Yes	No	No					
bservations This assessment Findings: - Dust and debris				201L, 201N, 201Q,	201S, 20	01W and 201Y		
Recommendatio	ns:							
Physical Plant O - Clean air supply								

Apollo Middle School	Evaluation Requested March 30, 2005
Time of Day 2:00 pm	Evaluation Date March 30, 2005
Outdoor Conditions Temperature 78.1	Relative Humidity 40.9 Ambient CO2 444
Fish Temperature Range Relative Humidity ALL 72 - 78 Noticeable Odor No Visible water damage / staining Ceiling Type No Wall Type No	30% - 60% < 1,000 PPM Visible microbial Amount of material
Flooring No	No None
Clean Minor Dust Needs / Debris Cleaning	Corrective Action Required
Walls	
Flooring	
HVAC Supply Grills	
HVAC Return Grills	
Ceiling at Supply Grills	
Surfaces in Room	
Dbservations ENTIRE SCHOOL - HVAC/AHU Recommendations: Physical Plant Operations Division: - Evaluate HVAC coils and drain pans through the entire schoflow	ool and clean appropriate and check drain pans for proper drainage