

Jeffrey S. Moquin, Director
Risk Management Department

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

August 11, 2005

Signature on File

TO: Ms. Jeannie Floyd, Principal
Park Lakes Elementary (Annex) School

FROM: Kenneth I. Partee, Project Manager, Occupational Health and Environmental
Control
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment
FISH 101, 106, 137, 139 and 140

On August 8, 2005 the IAQ Assessment Team conducted an assessment of FISH 101, 106, 137, 139 and 140 at **Park Lakes Elementary (Annex) 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: 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
Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

KP/tc
Enc.

IAQ Assessment

Park Lakes Elementary School

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="101"/>	<input type="text" value="76.8"/>	<input type="text" value="72 - 78"/>	<input type="text" value="55.6"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="1024"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="4"/>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>	
Ceiling Type	<input type="text" value="2 x 4 Lay In"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
Wall Type	<input type="text" value="Wood"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
Flooring	<input type="text" value="Carpet"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Supply Grills	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="Replace Missing Grills"/>
HVAC Return Grills	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="Replace Missing Grills"/>
Ceiling at Supply Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean as appropriate"/>
Surfaces in Room	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>

Observations

Findings:

- HVAC supply and return grills are missing
- Dust and debris on ceiling at HVAC supply grills
- HVAC unit is very loud. Principal advised cannot work or talk with the unit on.

Recommendations:

Site Based Maintenance:

- Clean ceiling tiles at HVAC supply grills 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:

- Replace missing HVAC supply and return grills
- Evaluate and repair HVAC unit as appropriate for noise

IAQ Assessment

Park Lakes Elementary School

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input style="width: 50px;" type="text" value="106"/>	<input style="width: 50px;" type="text" value="76.7"/>	<input style="width: 50px;" type="text" value="72 - 78"/>	<input style="width: 50px;" type="text" value="63.1"/>	<input style="width: 50px;" type="text" value="30% - 60%"/>	<input style="width: 50px;" type="text" value="771"/>	<input style="width: 50px;" type="text" value="Max 700 > Ambient"/>	<input style="width: 50px;" type="text" value="16"/>
Noticeable Odor	<input style="width: 50px;" type="text" value="Yes"/>		Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	<input style="width: 150px;" type="text" value="2 x 4 Lay In"/>		<input style="width: 50px;" type="text" value="Yes"/>		<input style="width: 50px;" type="text" value="Yes"/>		<input style="width: 150px;" type="text" value="20 Ceiling tiles"/>
Wall Type	<input style="width: 150px;" type="text" value="Plaster"/>		<input style="width: 50px;" type="text" value="No"/>		<input style="width: 50px;" type="text" value="No"/>		<input style="width: 150px;" type="text" value="None"/>
Flooring	<input style="width: 150px;" type="text" value="Carpet"/>		<input style="width: 50px;" type="text" value="Yes"/>		<input style="width: 50px;" type="text" value="No"/>		<input style="width: 150px;" type="text" value="3' x 6' section"/>

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input style="width: 50px;" type="text" value="No"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 300px;" type="text" value="Replace stained ceiling tiles"/>
Walls	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 50px;" type="text" value="No"/>	<input style="width: 50px;" type="text" value="No"/>	<input style="width: 300px;" type="text" value=""/>
Flooring	<input style="width: 50px;" type="text" value="No"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 300px;" type="text" value="Clean with extraction machine"/>
HVAC Supply Grills	<input style="width: 50px;" type="text" value="No"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 300px;" type="text" value="Clean with Wexcide disinfectant"/>
HVAC Return Grills	<input style="width: 50px;" type="text" value="No"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 300px;" type="text" value="Clean with Wexcide disinfectant"/>
Ceiling at Supply Grills	<input style="width: 50px;" type="text" value="No"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 300px;" type="text" value="Remove and replace or clean tiles as appropriate"/>
Surfaces in Room	<input style="width: 50px;" type="text" value="No"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 50px;" type="text" value="Yes"/>	<input style="width: 300px;" type="text" value="Clean bookshelves"/>

Observations

Findings: (Media Center)

- Stained ceiling tiles
- Dust and debris and stain on carpet
- Dust and debris on HVAC supply and return grills
- Dust and debris on ceiling at HVAC supply grills
- Dust and debris on bookshelves
- Leak at HVAC return grill
- Elevated humidity level caused by non working chiller (one unit not functioning)
- Dust and debris in ducts for quad 106, 137, 137A, 139 and 140

Recommendations:

Site Based Maintenance:

- Replace stained ceiling tiles
- Clean carpet with extraction machine
- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean/replace ceiling tiles at supply grills as appropriate
- Clean bookshelves 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:

- Evaluate and repair cause of stained ceiling tiles and repair/replace as appropriate
- Evaluate and repair leak at HVAC return grill
- Repair chiller unit
- Clean ducts for quad 106, 137, 137A, 139 and 140

Project Manager:

- Evaluate roof and initiate project to repair

IAQ Assessment

Park Lakes Elementary School

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="137"/>	<input type="text" value="73.4"/>	<input type="text" value="72 - 78"/>	<input type="text" value="68.2"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="593"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="1"/>
Noticeable Odor	<input type="text" value="Yes"/>	Visible water damage / staining?	<input type="text" value="Yes"/>	Visible microbial growth?	<input type="text" value="Yes"/>	Amount of material affected	<input type="text" value="60% of ceiling"/>
Ceiling Type	<input type="text" value="2 x 4 Lay In"/>		<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="60% of ceiling"/>		
Wall Type	<input type="text" value="Concrete/Homosote"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
Flooring	<input type="text" value="Tile"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove and replace ceiling tiles with mold"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Supply Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
HVAC Return Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
Ceiling at Supply Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove and replace tiles as appropriate"/>
Surfaces in Room	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>

Observations

Findings:

- Visible microbial growth and heavy dust and debris on ceiling tiles (60% of room)
- Heavy dust and debris on HVAC supply and return grills
- Broken HVAC return grill
- Broken thermostat
- Elevated humidity level caused by non working chiller (one unit not functioning)
- Dust and debris in ducts for quad 106, 137, 137A, 139 and 140

Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills 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 and repair cause of stained ceiling tiles and repair/replace as appropriate
- Replace broken HVAC return grill
- Replace broken thermostat
- Repair chiller unit
- Clean ducts for quad 106, 137, 137A, 139 and 140

Project Manager:

- Evaluate roof and initiate project to repair

IAQ Assessment

Park Lakes Elementary School

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="139"/>	<input type="text" value="71.7"/>	<input type="text" value="72 - 78"/>	<input type="text" value="70.8"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="596"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="1"/>
Noticeable Odor	<input type="text" value="Yes"/>		Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	<input type="text" value="2 x 4 Lay In"/>		<input type="text" value="Yes"/>		<input type="text" value="Yes"/>		<input type="text" value="1 ceiling tile - center"/>
Wall Type	<input type="text" value="Concrete"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>
Flooring	<input type="text" value="Tile"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Replace stained ceiling tile"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Supply Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
HVAC Return Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
Ceiling at Supply Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove and replace tiles as appropriate"/>
Surfaces in Room	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>

Observations

Findings:

- One stained ceiling tile in center of room
- Dust and debris on HVAC supply and return grills
- Dust and debris on ceiling at HVAC supply grills
- Dust and debris on speaker next to clock
- Elevated humidity level caused by non working chiller (one unit not functioning)
- Dust and debris in ducts for quad 106, 137, 137A, 139 and 140

Recommendations:

Site Based Maintenance:

- Replace stained ceiling tile in center of room
- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean/replace ceiling tiles at supply grills as appropriate
- Clean speaker next to clock
- 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:

- Repair chiller unit
- Clean ducts for quad 106, 137, 137A, 139 and 140

Project Manager:

- Evaluate roof and initiate project to repair

IAQ Assessment

Park Lakes Elementary School

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="140"/>	<input type="text" value="70.6"/>	<input type="text" value="72 - 78"/>	<input type="text" value="68.4"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="631"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="1"/>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<input type="text" value="Yes"/>		<input type="text" value="Yes"/>		<input type="text" value="No"/>		<input type="text" value="7 Ceiling tiles"/>	
Ceiling Type	<input type="text" value="2 x 4 Lay In"/>		<input type="text" value="Yes"/>	<input type="text" value="No"/>		<input type="text" value="None"/>	
Wall Type	<input type="text" value="Concrete"/>		<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text" value="None"/>	
Flooring	<input type="text" value="Tile"/>		<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text" value="None"/>	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Replace stained ceiling tiles"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean up water and clean and sanitize floor"/>
HVAC Supply Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
HVAC Return Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
Ceiling at Supply Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove and replace or clean tiles as appropriate"/>
Surfaces in Room	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>

Observations

Findings:

- Stained ceiling tiles
- Dust and debris on HVAC supply and return grills
- Dust and debris on ceiling at HVAC supply grills
- Water puddle on floor (has been there for some time - ring stain).
- Elevated humidity level caused by non working chiller (one unit not functioning)
- Dust and debris in ducts for quad 106, 137, 137A, 139 and 140

Recommendations:

Site Based Maintenance:

- Replace stained ceiling tiles
- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean/replace ceiling tiles at supply grills as appropriate
- Clean up water and clean and sanitize floor 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:

- Repair chiller unit
- Clean ducts for quad 106, 137, 137A, 139 and 140

Project Manager:

- Evaluate roof and initiate project to repair