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March 23, 2005

TO: Ms. Gladys F. Donovan, Principal
Driftwood Elementary School

FROM: Robert J. Krickovich, Coordinator, LEA
Facilities and Construction Management, Environmental Division

SUBJECT: Indoor Air Quality (IAQ) Assessment
FISH 201, 206, 804, 808, 809 and 912

On March 16, 2005 the IAQ Assessment Team conducted an assessment of FISH 201, 206, 804, 808 and 912 at **Driftwood 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: Sam Gregg, Area Superintendent
Margaret Underhill, Area Director
Jeffrey S. Moquin, Director, Risk Management
Bertram Lewars, Project Manager II, Facilities and Construction Management
Diane Watts, Broward Teachers Union
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division

RK/tc

IAQ Assessment

Driftwood 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="201"/>	<input type="text" value="71.6"/>	<input type="text" value="72 - 78"/>	<input type="text" value="53"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="1004"/>	<input 1,000="" ppm)"="" type="text" value("<=""/>	<input type="text" value="25"/>
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="Plaster"/>		<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="Wall at secondary exit door"/>		
Flooring	<input type="text" value="Vinyl"/>		<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" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
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="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Surfaces in Room	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean environmental surfaces"/>

Observations

Findings:	<ul style="list-style-type: none"> - Visible signs of water damage under windows at secondary exit door wall - Chemicals found in room at time of assessment (raid, cleanser, spray cleaner, lysol and spray paint) - Heavy dust and debris on HVAC return grills - Dust and debris on environmental surfaces and clutter throughout the room
Recommendations:	
Site Based Maintenance:	<ul style="list-style-type: none"> - Clean HVAC return grills with wexcide disinfectant solution - Remove non approved chemicals from room - Remove clutter and clean/dust environmental surfaces - 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:	<ul style="list-style-type: none"> - Evaluate and repair cause of water damage under windows at secondary exit door wall - Assist site based staff in clean HVAC return grills - heavy dust in grills is not accessible to school staff

IAQ Assessment

Driftwood Elementary School

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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="206"/>	<input type="text" value="71.6"/>	<input type="text" value="72 - 78"/>	<input type="text" value="48.8"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="1083"/>	<input 1,000="" ppm)"="" type="text" value("<=""/>	<input type="text" value="19"/>
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="Plaster"/>		<input type="text" value="Yes"/>	<input type="text" value="No"/>		<input type="text" value="5 Sq. Ft. at secondary exit door"/>	
Flooring	<input type="text" value="Vinyl"/>		<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" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
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="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Surfaces in Room	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean environmental surfaces"/>

Observations

Findings:

- Visible signs of water damage under windows at secondary exit door wall
- Heavy dust and debris on HVAC return grills
- Dust and debris on environmental surfaces and clutter throughout the room

Recommendations:

Site Based Maintenance:

- Clean HVAC return grills with wexcide disinfectant solution
- Remove clutter and clean/dust environmental surfaces
- 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 water damage under windows at secondary exit door wall
- Assist site based staff in clean HVAC return grills - heavy dust in grills is not accessible to school staff

IAQ Assessment

Driftwood Elementary School

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Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="804"/>	<input type="text" value="73.7"/>	<input type="text" value="72 - 78"/>	<input type="text" value="49"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="1056"/>	<input 1,000="" ppm)"="" type="text" value("<=""/>	<input type="text" value="6"/>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<input type="text" value="No"/>		<input type="text" value="Yes"/>		<input type="text" value="No"/>		<input type="text" value="2 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="Wall at secondary exit door"/>	
Wall Type	<input type="text" value="Tackable/Plaster"/>		<input type="text" value="Yes"/>	<input type="text" value="No"/>		<input type="text" value="None"/>	
Flooring	<input type="text" value="Vinyl"/>		<input type="text" value="No"/>	<input type="text" value="No"/>			

	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" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<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="Clean as necessary"/>
Surfaces in Room	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean environmental surfaces"/>

Observations

Findings:

- Visible signs of water damage under windows at secondary exit door wall
- Dust and debris on HVAC supply and return grills
- Dust and debris on ceiling at HVAC supply grills
- Dust and debris on environmental surfaces and clutter throughout the room

Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with wexcide disinfectant solution
- Clean/dust ceiling at HVAC supply grills
- Remove clutter and clean/dust environmental surfaces
- 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 water damage under windows at secondary exit door wall
- Assist site based staff in clean HVAC return grills - heavy dust in grills is not accessible to school staff
- See assessment for HVAC unit in FISH 809 - improper spacers are allowing air to bypass the filters causing excessive dust accumulation on supply grills and ceiling tiles

IAQ Assessment

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Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="808"/>	<input type="text" value="74.6"/>	<input type="text" value="72 - 78"/>	<input type="text" value="57.2"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="619"/>	<input 1,000="" ppm)"="" type="text" value("<=""/>	<input type="text" value="3"/>
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="Plaster"/>		<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="Wall at secondary exit door"/>		
Flooring	<input type="text" value="Vinyl"/>		<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" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
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="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Surfaces in Room	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean environmental surfaces"/>

Observations

Findings:	<ul style="list-style-type: none"> - Visible signs of water damage under windows at secondary exit door wall - Dust and debris on HVAC return grills - Dust and debris on environmental surfaces and clutter throughout the room
Recommendations:	
Site Based Maintenance:	<ul style="list-style-type: none"> - Clean HVAC return grills with wexcide disinfectant solution - Remove clutter and clean/dust environmental surfaces - 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:	<ul style="list-style-type: none"> - Evaluate and repair cause of water damage under windows at secondary exit door wall - Assist site based staff in clean HVAC return grills - heavy dust in grills is not accessible to school staff

IAQ AHU Assessment

Driftwood Elementary School

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions Temperature Relative Humidity Ambient CO2

AHU Room #	Temperature	Range	Relative Humidity	Range	CO2	Range
<input type="text" value="809"/>	<input type="text"/>	<input type="text" value="72 - 78"/>	<input type="text"/>	<input type="text" value="30% - 60%"/>	<input type="text"/>	<input 1,000="" ppm")"="" type="text" value("<=""/>
Noticeable Odor	<input type="text" value="No"/>	Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	<input type="text" value="Metal Deck"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
Wall Type	<input type="text" value="Foil Back Insulation"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
Flooring	<input type="text" value="Concrete"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required		
Room	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean Room"/>		
Filters	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
Coil	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean Coils"/>		
Pan	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean Pan and Repair"/>		
Duct	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
Motorized Damper Installed	<input type="text" value="Yes"/>	<input type="text"/>				
Damper Open / Operating	<input type="text" value="Yes"/>	<input type="text"/>				
Fresh Air Intake Un-obstructed	<input type="text" value="Yes"/>	<input type="text"/>				
Pollutant Sources Near Air Intake	<input type="text" value="No"/>	<input type="text"/>				
AHU Supply Water Temp	<input type="text" value="45"/>	AHU Return Water Temp	<input type="text" value="48"/>			

Observations

Findings:

- Dust and debris in room
- Dust and debris on HVAC coils
- Slime build up in HVAC pan - holding water
- Filter spacers do not fit properly

Recommendations:

Physical Plant Operations Division:

- Clean HVAC coils
- Clean pan and repair to drain properly
- Install new filter spacers to prevent air bypass of filter media

IAQ Assessment

Driftwood Elementary School

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Evaluation Date

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="912"/>	<input type="text" value="75.6"/>	<input type="text" value="72 - 78"/>	<input type="text" value="48"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="714"/>	<input 1,000="" ppm)"="" type="text" value("<=""/>	<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="Plaster"/>		<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
Flooring	<input type="text" value="Vinyl"/>		<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="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Floor will not hold wax"/>
HVAC Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
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="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Surfaces in Room	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>

Observations

Findings:

- Flooring will not hold wax
- Dust and debris on HVAC return grills
- Dust and debris on environmental surfaces and clutter throughout the room

Recommendations:

Site Based Maintenance:

- Clean HVAC return grills with wexcide disinfectant solution
- Remove clutter and clean/dust environmental surfaces
- 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:

- Assist site based staff with flooring wax - another product or procedure they can use to correct the problem
- Assist site based staff in clean HVAC return grills - heavy dust in grills is not accessible to school staff