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Risk Management Department

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August 2, 2012

Signature on File

TO: David Basile, Principal
South Plantation High School

FROM: Richard Rosa, Project Manager
Facilities Design and Construction

SUBJECT: Indoor Air Quality (IAQ) Assessment

| <u>For Custodial Supervisor Use Only</u> | |
|--|--------------------------------|
| <input type="checkbox"/> | Custodial Issues Addressed |
| <input type="checkbox"/> | Custodial Issues Not Addressed |
| _____ | |
| _____ | |

On November 4, 2011, I conducted an assessment at **South Plantation High School**. Attached are findings and recommendations for further assessment, remediation, or corrective actions needed.

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.

Please ensure that your Head Facilities Serviceperson receives a copy of this correspondence so that the recommendations requiring their attention can be addressed. In an attempt to separate IAQ issues from general maintenance items, the attached assessment may contain direction for site based staff to generate a work order through COMPASS. Within two weeks a representative from the Custodial/Grounds Department will conduct a follow-up visit to ensure that all site based custodial issues have been appropriately addressed.

Should any questions arise, or if the current concerns continue after the attached recommendations have been addressed, please feel free to contact us at 754-321-1907.

cc: Directors, School Performance & Accountability
Shelley Meloni, Executive Director, Facilities Design and Construction
Mark Dorsett, Manager, Zone 1, Physical Plant Operations Division
Roy Norton, Manager, Custodial/Grounds, Physical Plant Operations Division
Aston Henry, Supervisor, Risk Management
Sonja Coley, Senior Project Manager, Facilities Design and Construction
Broward Teachers Union
Federation of Public Employees

RR/jg
Enc.

IAQ Assessment

South Plantation High School

Location Number
 Evaluation Requested
 Evaluation Date

Time of Day

Outdoor Conditions Temperature Relative Humidity Ambient CO2

| | | | | | | | |
|----------------------------------|---|--------------------------------------|-----------------------------------|--|----------------------------------|--|----------------------|
| Fish | Temperature | Range | Relative Humidity | Range | CO2 | Range | # Occupants |
| <input type="text" value="161"/> | <input type="text" value="71.2"/> | <input type="text" value="72 - 78"/> | <input type="text" value="70.4"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="502"/> | <input type="text" value="Max 700 > Ambient"/> | <input type="text"/> |
| 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="3 stained ceiling tiles"/> | |
| Ceiling Type | <input type="text" value="2 x 2 Lay in"/> | | <input type="text" value="Yes"/> | <input type="text" value="No"/> | <input type="text"/> | | |
| Wall Type | <input type="text" value="Drywall"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text"/> | | |
| Flooring | <input type="text"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text"/> | | |

| | Clean | Minor Dust / Debris | Needs Cleaning | Corrective Action Required |
|--------------------------|-------------------------------------|--------------------------|----------------------------------|---|
| Ceiling | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="Yes"/> | <input type="text" value="See Below"/> |
| Walls | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| Flooring | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| HVAC Supply Grills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/> |
| HVAC Return Grills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="See Below"/> |
| Ceiling at Supply Grills | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| Surfaces in Room | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |

Observations

Findings

- FISH 161 - Elevated humidity level and low temperature.
- FISH 161 - Stained ceiling tiles

NOTE: AAON units in rooms. Staff needs direction on proper operation of the units. Advised there is no return grill in FISH 161 and they keep exhaust fans on to combat microbial growth. When exhaust fans are turned off the growth returns.

Site Based Maintenance

- FISH 161 - Remove and replace stained ceiling tiles and monitor until repairs are completed.
- FISH 161 - Remove and dry out light fixture lenses to remove condensation when repairs to HVAC are completed.
- FISH 161 - Wipe down surfaces with Wexcide as necessary until repairs are completed.
- FISH 161 - Clean HVAC supply grills and exhaust fans

Physical Plant Operation

- SCHEDULE for someone to provide direction to site based staff on the operation of the AAON units.
- FISH 161 - Evaluate HVAC system for proper operation and repair as appropriate to increase temperature and lower humidity level. EAC was not involved in Warranty walk thru/ training. Recommend CAC backlog.
- FISH 161 - Evaluate for cause of stained ceiling tiles and repair as appropriate.

-Note Work orders EQ2225 through EQ02227 issued 11/14/11

IAQ Assessment

South Plantation High School

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 Evaluation Date

Time of Day

Outdoor Conditions Temperature Relative Humidity Ambient CO2

| | | | | | | | |
|-----------------------------------|---|--------------------------------------|-----------------------------------|--|----------------------------------|---|----------------------|
| Fish | Temperature | Range | Relative Humidity | Range | CO2 | Range | # Occupants |
| <input type="text" value="161C"/> | <input type="text" value="71.7"/> | <input type="text" value="72 - 78"/> | <input type="text" value="66.9"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="689"/> | <input type="text" value="Max 700 > Ambient"/> | <input type="text"/> |
| 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"/> | |
| Ceiling Type | <input type="text" value="Drywall"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | | <input type="text"/> | |
| Wall Type | <input type="text" value="Ceramic Tile"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | | <input type="text"/> | |
| Flooring | <input type="text" value="Ceramic Tile"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | | <input type="text"/> | |

| | Clean | Minor Dust / Debris | Needs Cleaning | Corrective Action Required |
|--------------------------|-------------------------------------|--------------------------|--------------------------|--|
| Ceiling | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| Walls | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| Flooring | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| HVAC Supply Grills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="See Below"/> |
| HVAC Return Grills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="See Below"/> |
| Ceiling at Supply Grills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="N/A"/> |
| Surfaces in Room | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |

Observations

Findings

- FISH 161C - Elevated humidity level and low temperature.

NOTE: AAON units in rooms. Staff needs direction on proper operation of the units. When exhaust fans are turned off the growth returns.

Site Based Maintenance

- FISH 161C - Clean HVAC supply grills and exhaust fans

Physical Plant Operation

- SCHEDULE for someone to provide direction to site based staff on the operation of the AAON units.

- FISH 161C - Evaluate HVAC system for proper operation and repair as appropriate to increase temperature and lower humidity

-Note Work orders EQ2225 through EQ02227 issued 11/14/11

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="161H"/> | <input type="text" value="70.8"/> | <input type="text" value="72 - 78"/> | <input type="text" value="60.3"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="581"/> | <input type="text" value="Max 700 > Ambient"/> | <input type="text"/> |
| 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="Yes"/> | | <input type="text" value="1 Ceiling Tile"/> | |
| Ceiling Type | <input type="text" value="2 x 2 Lay in"/> | | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text"/> | | |
| Wall Type | <input type="text" value="Drywall"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text"/> | | |
| Flooring | <input type="text" value="Painted Concrete"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text"/> | | |

| | Clean | Minor Dust / Debris | Needs Cleaning | Corrective Action Required |
|--------------------------|-------------------------------------|-------------------------------------|----------------------------------|--|
| Ceiling | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="Yes"/> | <input type="text" value="See Below"/> |
| Walls | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| Flooring | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| HVAC Supply Grills | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="Clean appropriately"/> |
| HVAC Return Grills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="No return grill"/> |
| Ceiling at Supply Grills | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| Surfaces in Room | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |

Observations

Findings

- FISH 161H - Elevated humidity level and low temperature
- FISH 161H - Stained ceiling tile
- FISH 161H - No return air grill in ceiling or door and no undercut

NOTE: AAON units in rooms. Staff needs direction on proper operation of the units. When exhaust fans are turned off the growth returns.

Site Based Maintenance

- FISH 161H - Remove and replace stained ceiling tiles and monitor until repairs are completed.
- FISH 161H - Remove and dry out light fixture lenses to remove condensation when repairs to HVAC are completed.

Physical Plant Operation

- SCHEDULE for someone to provide direction to site based staff on the operation of the AAON units.
- FISH 161H- Evaluate HVAC system for proper operation and repair as appropriate to increase temperature and lower humidity Evaluate need for return air grill or undercut of door EAC was not involved in Warranty walk thru/ training. Recommend CAC backlog.

-Note Work orders EQ2225 through EQ02227 issued 11/14/11

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Outdoor Conditions Temperature Relative Humidity Ambient CO2

| | | | | | | | |
|----------------------------------|---|--------------------------------------|-----------------------------------|--|----------------------------------|---|---|
| Fish | Temperature | Range | Relative Humidity | Range | CO2 | Range | # Occupants |
| <input type="text" value="162"/> | <input type="text" value="71"/> | <input type="text" value="72 - 78"/> | <input type="text" value="65.5"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="491"/> | <input type="text" value="Max 700 > Ambient"/> | <input type="text"/> |
| Noticeable Odor | <input type="text" value="No"/> | | Visible water damage / staining? | | Visible microbial growth? | | Amount of material affected |
| Ceiling Type | <input type="text" value="2 x 2 Lay in"/> | | <input type="text" value="Yes"/> | | <input type="text" value="Yes"/> | | <input type="text" value="3 Ceiling Tile"/> |
| Wall Type | <input type="text" value="Drywall"/> | | <input type="text" value="No"/> | | <input type="text" value="No"/> | | <input type="text"/> |
| Flooring | <input type="text" value="Carpet"/> | | <input type="text" value="No"/> | | <input type="text" value="No"/> | | <input type="text"/> |

| | Clean | Minor Dust / Debris | Needs Cleaning | Corrective Action Required |
|--------------------------|--------------------------------|--------------------------------|----------------------------------|--|
| Ceiling | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="Yes"/> | <input type="text" value="See Below"/> |
| Walls | <input type="text" value="x"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| Flooring | <input type="text" value="x"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| HVAC Supply Grills | <input type="checkbox"/> | <input type="text" value="x"/> | <input type="checkbox"/> | <input type="text" value="Clean appropriately"/> |
| HVAC Return Grills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="Yes"/> | <input type="text" value="Vaccum grill"/> |
| Ceiling at Supply Grills | <input type="text" value="x"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| Surfaces in Room | <input type="text" value="x"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |

Observations

Findings

- FISH 162 - Elevated humidity level and low temperature.
- FISH 162 - Stained ceiling tile
- FISH 162 - Doors do not seal properly

NOTE: AAON units in rooms. Staff needs direction on proper operation of the units. When exhaust fans are turned off the growth returns.

Site Based Maintenance

- FISH 162 - Remove and replace stained ceiling tiles and monitor until repairs are completed
- FISH 162 - Clean HVAC supply grills and exhaust fans
- FISH 162 - Clean HVAC return grills

Physical Plant Operation

- SCHEDULE for someone to provide direction to site based staff on the operation of the AAON units.
- FISH 162- Evaluate HVAC system for proper operation and repair as appropriate to increase temperature and lower humidity Evaluate need for return air grill or undercut of door EAC was not involved in Warranty walk thru/ training. Recommend CAC backlog. Check weather stripping on doors (single and double) and repair/replace or adjust hardware to allow better seal.

-Note Work orders EQ2225 through EQ02227 issued 11/14/11