

# managing risk with responsibility

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|----------------------------|------------|--------------|
| Risk Management Department | Fax:       | 754 321-1917 |
|                            |            |              |

October 8, 2012 Signature on File

TO: Sherry Rose, Principal

**Sawgrass Elementary School** 

FROM: Richard Rosa, Project Manager

Facilities Design and Construction

SUBJECT: Indoor Air Quality (IAQ) Assessment

| <u>Fo</u> | For Custodial Supervisor Use Only |  |  |  |  |
|-----------|-----------------------------------|--|--|--|--|
|           | Custodial Issues Addressed        |  |  |  |  |
|           | Custodial Issues Not Addressed    |  |  |  |  |
|           |                                   |  |  |  |  |
|           |                                   |  |  |  |  |

On October 5, 2012, I conducted an assessment at **Sawgrass Elementary 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/tc Enc.

| Sawgrass Eleme  | entary Evaluation Da                           | te October 5, 2012                 | Time of Day8                                     | :15            |
|---|--|------------------------------------|--|----------------|
| Outdoor Conditions Temperature  | 81.3 Relativ                                   | e Humidity 94.6                    | Ambient CO2 46                                   | 60             |
| Fish         Temperature         Range           850         70.3         72 - 78 | Relative Humidity 75.3                         | Range CO <sup>2</sup> 9% - 60% 485 | Range # Oc<br>MAX 700 ><br>Ambient               | cupants        |
| Noticeable Odor No  | Visible water damage / staining?               | Visible microbial growth?          | Amount of material affected                      |                |
| Ceiling 2' x 4'   | No   | No                                 |  |                |
| Walls Drywall   | No   | No                                 |  |                |
| Floor 12" x 12" Vinyl   | No   | No                                 |  |                |
| Ceiling Clean Yes Walls Clean Yes   | HVAC Supply<br>Grills Clean                    | No                                 | HVAC Return<br>Grills Clean                      | No             |
| Flooring Clean Yes  | Inside of Supply<br>Duct Clean                 | Yes                                | Inside of Return<br>Duct Clean                   | N/A            |
| Room Surfaces No Clean  | Ceiling at Supply<br>Grills Clean              | Yes                                |  |                |
| Trash Removed Yes   | Exhaust Fans Working                           | Yes                                | Unapproved Chemicals /<br>Cleaners in Room       | No             |
| Signs of Pests No   | <b>Drain Traps Wet</b>                         | N/A                                | Air Fresheners                                   | - No           |
| Room Cluttered No   | Food if Stored in Room is in Sealed Containers | N/A                                | in Room  | No             |
| Mechanical Equipment Location Baro  | d like HVAC system in cla                      | assroom                            | Mechanical Room Clean                            | N/A            |
| Filters Installed Properly Yes  | Filters Clean                                  | No                                 | Inside of HVAC Unit Clean                        | N/A            |
| Condensate Pan Clean N/A  | Cooling Coil Clean                             | N/A                                |  |                |
| Fresh Air Intake Location Beh   | ind Bard unit/Exterior wa                      | ıll 🔻                              | Fresh Air Intake Free of Obstruction             | Yes            |
| Pollutant Sources Near Air<br>Intake  |  | ▼                                  | or obstruction                                   |                |
| Observations  |  |                                    |  |                |
| HFSP states the filters are due for cha   | anging in two weeks.                           |                                    |  |                |
|   |  |                                    |  |                |
|   |  |                                    |  |                |
| Corrective Actions to be Completed I  | w Site Resed Staff                             | Convention Anti-                   | no to be Completed by DD                         |                |
| Clean dust from the patch pa  |  |                                    | ns to be Completed by PP o reduce humidity level | <u>0</u><br> ▼ |
| Clean HVAC supply and return grills   |  | •                                  | ure to 72 - 78 degrees                           | ▼              |
| Remove and replace A/C f  | ilters ▼                                       |                                    |  | ▼              |

| Sawgrass Elementary Eva   | aluation Date October 5, 2012 Time of Day 8:45                                 |
|---|--|
| Outdoor Conditions Temperature 81.3   | Relative Humidity 94.6 Ambient CO2 460   |
| Fish         Temperature         Range         Relative Hui           856         72.3         72 - 78         65.3 | midity Range CO <sup>2</sup> Range # Occupants 30% - 60% 751 MAX 700 > Ambient |
| Noticeable Odor No Visible water d  | or a contact attacks of  |
| Ceiling 2' x 4' No  | No   |
| Walls Drywall No  | No   |
| Floor 12" x 12" Vinyl No  | No   |
| Ceiling Clean No HVAC S Grills Cl   |  |
| Walls Clean Yes Inside o Flooring Clean Yes Duct Cle  | of Supply Inside of Return N/A Duct Clean                                      |
| Room Surfaces No Ceiling a Clean Grills Cl  | at Supply<br>Clean   |
| Trash Removed Yes Exhaust Fans  | Cleaners in Room No  |
| Signs of Pests No Drain 1   | Traps Wet N/A Air Fresheners No  |
| Room Cluttered No Food if Stored in Sealed Conta  | in Room is in Room   |
| Mechanical Equipment Location Bard like HVAC sys  | stem in classroom Mechanical Room Clean N/A                                    |
| Filters Installed Properly N/A Filter   | ers Clean No Inside of HVAC Unit Clean N/A                                     |
| Condensate Pan Clean N/A Cooling C  | Coil Clean N/A   |
| Fresh Air Intake Location Behind Bard unit/Ex   | xterior wall  ▼ Fresh Air Intake Free of Obstruction  Yes                      |
| Pollutant Sources Near Air Intake Grass and landscap  |  |
| Observations  |  |
| HFSP states the filters are due for changing in two w   | veeks. Dust build up on window blinds.   |
|   |  |
|   |  |
| Corrective Actions to be Completed by Site Based S  |  |
| Clean Ceilings around HVAC supply grills  | ▼ Repair HVAC to reduce humidity level ▼                                       |
| Clean HVAC supply and return grills with Wexcide  Remove and replace A/C filters                                    |  |
| Clean dust from blinds  | ▼ ▼  |
|   | <del>                                    </del>                                |
|   | <del>                                    </del>                                |

|   | Sawgrass Eleme    | entary Evaluation                             | on Date Octob        | per 5, 2012       | Time of Day                                | 9:15         |
|---|-------------------|---|----------------------|-------------------|--|--------------|
| Outdoor Conditions                            | Temperature       | 81.3 Re                                       | lative Humidity      | 94.6              | Ambient CO2 4                              | 60           |
| Fish         Temper           881         74. |                   | Relative Humidity                             | 7 Range<br>30% - 60% | 933               |  | ccupants     |
| Noticeable Odor                               | No                | Visible water damag staining?                 | C /                  | microbial<br>wth? | Amount of material affected                |              |
| Ceiling 2' x                                  | 4'                | No  | N                    | lo l              |  |              |
| Walls Dryw                                    |                   | No  | N                    | lo                |  |              |
| Floor 12" x 12"                               | ' Vinyl           | No  | N                    | lo l              |  |              |
|   | Yes<br>Yes        | HVAC Supply<br>Grills Clean                   | Yes                  |                   | HVAC Return<br>Grills Clean                | Yes          |
|   | Yes               | Inside of Sup<br>Duct Clean                   | ply Yes              |                   | Inside of Return<br>Duct Clean             | N/A          |
| Room Surfaces<br>Clean                        | No                | Ceiling at Sup<br>Grills Clean                | Yes                  |                   |  |              |
|   | Yes               | Exhaust Fans Work                             |                      |                   | Unapproved Chemicals /<br>Cleaners in Room | No           |
|   | No                | Drain Traps                                   |                      |                   | Air Fresheners                             | No           |
| Room Cluttered                                | No                | Food if Stored in Roo<br>in Sealed Containers | I NI/A I             |                   | in Room                                    |              |
| Mechanical Equipmen                           | t Location Bard   | l like HVAC system i                          | n classroom          |                   | Mechanical Room Clean                      | N/A          |
| Filters Installed Proper                      | ly Yes            | Filters Cle                                   | ean No               |                   | Inside of HVAC Unit Clean                  | N/A          |
| Condensate Pan Cle                            | ean N/A           | Cooling Coil Cl                               | ean N/A              |                   |  |              |
| Fresh Air Intake Location                     |                   | exterior wall                                 |                      | ▼                 | Fresh Air Intake Free of Obstruction       | Yes          |
| Pollutant Sources Near<br>Intake              | Air               | s and landscape                               |                      | ▼                 |  |              |
| Observations                                  |                   |   |                      |                   |  |              |
| HFSP states the filters                       | are due for cha   | nging in two weeks.                           |                      |                   |  |              |
|   |                   |   |                      |                   |  |              |
|   |                   |   |                      |                   |  |              |
| Corrective Actions to                         | be Completed b    | ov Site Based Staff                           | Corre                | ective Actio      | ns to be Completed by Pi                   | <br>PO       |
|   | lean elevated s   |   |                      |                   |  | ▼            |
| Remove ar                                     | nd replace A/C fi |   |                      |                   |  | ▼            |
|   |                   | ▼ ▼   |                      |                   |  | ▼            |
|   |                   | ▼   |                      |                   |  | ▼            |
|   |                   | ▼   |                      |                   |  | <b>▼</b>     |
|   |                   | <b>─</b>                                      |                      |                   |  | <b>-   ▼</b> |

Evaluation Date

Sawgrass Elementary

October 5, 2012

Time of Day

9:30

| Outdoor Conditions Tem                 | perature 81.3  | Relative Humidi  | ty 94.6                 | Ambient CO2 4                              | 60       |
|--|--|--|-------------------------|--|----------|
| Fish Temperature 883 72.6              | Range         Relative Hu           72 - 78         53 | umidity Range  | 94                      | _  | ccupants |
| Noticeable Odor No                     | Visible water of staining                              | uamage /   | le microbial<br>growth? | Amount of<br>material affected             |          |
| Ceiling 2' x 4'                        | No   |  | No                      |  |          |
| Walls Drywall                          | No   | l  | No                      |  |          |
| Floor 12" x 12" Vinyl                  | No   |  | No                      |  |          |
| Ceiling Clean Yes                      | HVAC S<br>Grills O                                     | T I NO   | ]                       | HVAC Return<br>Grills Clean                | No       |
| Walls Clean Yes                        |  | of Supply  | 1                       | Inside of Return                           |          |
| Flooring Clean Yes                     | Duct C   |  |                         | Duct Clean                                 | N/A      |
| Room Surfaces No Clean                 | Ceiling<br>Grills C                                    | at Supply<br>Clean Yes   | ]                       |  |          |
| Trash Removed Yes                      | Exhaust Fan  | s Working N/A  | ]                       | Unapproved Chemicals /<br>Cleaners in Room | No       |
| Signs of Pests No                      | Drain  | Traps Wet N/A  | ]                       |  |          |
| Room Cluttered No                      | Food if Stored in Sealed Cont                          | The state of the s | ]                       | Air Fresheners<br>in Room                  | No       |
| Mechanical Equipment Locat             | tion Bard like HVAC sys                                | stem in classroom  |                         | Mechanical Room Clean                      | N/A      |
| Filters Installed Properly             | Yes Filt   | ters Clean No  | ]                       | Inside of HVAC Unit Clean                  | N/A      |
| Condensate Pan Clean                   | N/A Cooling  | Coil Clean N/A   |                         |  |          |
| Fresh Air Intake Location              | Thru exterior wall                                     |  | ▼                       | Fresh Air Intake Free                      | Yes      |
| Pollutant Sources Near Air<br>Intake   | Grass and landsca                                      | pe   | ▼                       | of Obstruction                             | 100      |
| Observations                           |  |  |                         |  |          |
| HFSP states the filters are d          | ue for changing in two v                               | veeks.   |                         |  |          |
|  |  |  |                         |  |          |
|  |  |  |                         |  |          |
| Corrective Actions to be Co            | ompleted by Site Based                                 | Staff Co   | orrective Acti          | ons to be Completed by PI                  | 20       |
| Thoroughly clean e                     |  | <b>▼</b>   |                         |  | <b>▼</b> |
| Remove and repl<br>Clean HVAC supply ç |  | <b> ▼</b>  |                         |  | <b>▼</b> |
| Vacuum re                              |  | <del>                                     </del>   |                         |  | ▼        |
|  |  | ▼  |                         |  | ▼        |
|  |  | ▼  |                         |  | ▼        |
|  |  | ▼  |                         |  | <u>▼</u> |

| Sawgra                               | ss Elementary Evaluation Da   | October 5, 2012             | Time of Day 9:45                         |
|--------------------------------------|---|-----------------------------|--|
| Outdoor Conditions Temp              | erature 81.3 Relativ  | e Humidity 94.6             | Ambient CO2 460                          |
|                                      | Range Relative Humidity 72 - 78 57 30                                   | Range <u>CO</u><br>0% - 60% |  |
| Noticeable Odor No                   | Visible water damage / staining?  | Visible microbial growth?   | Amount of material affected              |
| Ceiling 2' x 4'                      | Yes   | No                          | 8 ceiling stains <5 sq ft                |
| Walls Drywall                        | No  | No                          |  |
| Floor 12" x 12" Vinyl                | No  | No                          |  |
| Ceiling Clean Yes                    | HVAC Supply<br>Grills Clean   | Yes                         | HVAC Return Grills Clean                 |
| Walls Clean Yes Flooring Clean Yes   | Inside of Supply<br>Duct Clean  | Yes                         | Inside of Return Duct Clean Yes          |
| Room Surfaces No Clean               | Ceiling at Supply<br>Grills Clean                                       | Yes                         |  |
| Trash Removed Yes                    | Exhaust Fans Working  | N/A                         | Unapproved Chemicals / Cleaners in Room  |
| Signs of Pests No  Room Cluttered No | Drain Traps Wet Food if Stored in Room is in Sealed Containers          | N/A                         | Air Fresheners No in Room                |
| Mechanical Equipment Location        | on Bard like HVAC system in cla   | assroom                     | Mechanical Room Clean N/A                |
| Filters Installed Properly           | Yes Filters Clean   | No                          | Inside of HVAC Unit Clean N/A            |
| Condensate Pan Clean                 | Cooling Coil Clean  | N/A                         |  |
| Fresh Air Intake Location            | Thru exterior wall  | ▼                           | Fresh Air Intake Free of Obstruction Yes |
| Pollutant Sources Near Air<br>Intake | Grass and landscape   | ▼                           | of Obstruction                           |
| Observations                         |   |                             |  |
|                                      | e for changing in two weeks. Sta<br>but stains are still there. Also ch |                             |  |
|                                      |   |                             |  |

# Corrective Actions to be Completed by Site Based Staff

| Controlled Action to act Completed by Cite Ducou C | Controller of total one to be completed by one bacca clair |  |  |
|--|--|--|--|
| Thoroughly clean elevated surfaces                 |  |  |  |
| Remove and replace A/C filters                     |  |  |  |
| Replace stained ceiling tiles after repairs        | ▼  |  |  |
| Vacuum return grill                                |  |  |  |
|  |  |  |  |
|  | ▼  |  |  |
|  |  |  |  |
|  | ▼  |  |  |

#### **Corrective Actions to be Completed by PPO**

| Content to Actions to Be completed by 1.1.6        |   |
|--|---|
| Repair HVAC to reduce CO2 levels                   | ▼ |
| Evaluate and repair cause of stained ceiling tiles | ▼ |
|  | ▼ |
|  | ▼ |
|  | ▼ |
|  | ▼ |
|  | ▼ |
|  | ▼ |

| Sawgrass Elementary Eval  | uation Date [ | October 5, 2012           | Time of Day1   | 0:15     |
|---|---------------|---------------------------|--|----------|
| Outdoor Conditions Temperature 81.3   | Relative H    | umidity 94.6              | Ambient CO2 4  | 60       |
| Fish         Temperature         Range         Relative Hum           889         75         72 - 78         51.3 | aidity Ra     |                           | 0 <sup>2</sup> Range # 00<br>55 MAX 700 ><br>Ambient | 19       |
| Noticeable Odor No Visible water da staining?   |               | Visible microbial growth? | Amount of material affected                          |          |
| Ceiling 2' x 4' Yes   |               | No                        | 7 ceiling stains <3 so                               | q ft     |
| Walls Drywall No  |               | No                        |  |          |
| Floor 12" x 12" Vinyl No  |               | No                        |  |          |
| Ceiling Clean No HVAC Su Grills Cle   |               | Yes                       | HVAC Return<br>Grills Clean                          | No       |
| Flooring Clean Yes Inside of Duct Clea  |               | Yes                       | Inside of Return<br>Duct Clean                       | No       |
| Room Surfaces No Ceiling at Clean Grills Cle  |               | Yes                       |  |          |
| Trash Removed Yes Exhaust Fans  | Working [     | N/A                       | Unapproved Chemicals /<br>Cleaners in Room           | No       |
| Signs of Pests No Drain Tr  | aps Wet       | N/A                       | A1. F 1  |          |
| Room Cluttered No Food if Stored in in Sealed Contain   |               | Yes                       | Air Fresheners<br>in Room                            | No       |
| Mechanical Equipment Location Bard like HVAC system   | em in classr  | oom                       | Mechanical Room Clean                                | N/A      |
| Filters Installed Properly Yes Filter   | s Clean [     | No                        | Inside of HVAC Unit Clean                            | N/A      |
| Condensate Pan Clean N/A Cooling Co   | il Clean [    | N/A                       |  |          |
| Fresh Air Intake Location Thru exterior wall  |               | ▼                         | Fresh Air Intake Free of Obstruction                 | Yes      |
| Pollutant Sources Near Air Intake  Grass and landscape  | 9             | ▼                         | or obstruction                                       |          |
| Observations  |               |                           |  |          |
| HFSP states the filters are due for changing in two we order was called into roofers but stains are still there.  | eks. Stains   | are from tropical         | storm Issac, HFSP states w                           | ork      |
|   |               |                           |  |          |
| Corrective Actions to be Completed by Site Based Sta  | aff           | Corrective Act            | ions to be Completed by PF                           | ,o       |
| Thoroughly clean horizontal surfaces  |               | valuate and repa          | ir cause of stained ceiling ti                       |          |
| Remove and replace A/C filters  |               |                           |  | <b>▼</b> |
| Replace stained ceiling tiles after repairs  Vacuum return grill  | <b>▼</b>      |                           |  | ▼        |
| vacaum return griii   | ▼             |                           |  | ▼        |

| Sawgrass   | Elementary Evaluation Date                     | October 5, 2012           | Time of Day 10                             | 0:45 |
|--|--|---------------------------|--|------|
| Outdoor Conditions Tempera   | ature 81.3 Relative                            | Humidity 94.6             | Ambient CO2 46                             | 60   |
|  |  | Range CO <sup>2</sup> 996 | Range # Oo<br>MAX 700 ><br>Ambient         | 19   |
| Noticeable Odor No   | Visible water damage /<br>staining?            | Visible microbial growth? | Amount of material affected                |      |
| Ceiling 2' x 4'  | Yes  | No                        | 5 ceiling stains <3 sq                     | ft   |
| Walls Drywall  | Yes  | No                        | < 1 sq ft                                  |      |
| Floor 12" x 12" Vinyl  | No   | No                        |  |      |
| Ceiling Clean No   | HVAC Supply<br>Grills Clean                    | Yes                       | HVAC Return<br>Grills Clean                | No   |
| Walls Clean Yes Flooring Clean Yes   | Inside of Supply<br>Duct Clean                 | Yes                       | Inside of Return<br>Duct Clean             | No   |
| Room Surfaces No<br>Clean  | Ceiling at Supply<br>Grills Clean              | Yes                       |  |      |
| Trash Removed Yes  | Exhaust Fans Working                           | N/A                       | Unapproved Chemicals /<br>Cleaners in Room | No   |
| Signs of Pests Yes   | Drain Traps Wet                                | N/A                       | Air Fresheners                             | No   |
| Room Cluttered No  | Food if Stored in Room is in Sealed Containers | N/A                       | in Room                                    |      |
| Mechanical Equipment Location  | Bard like HVAC system in clas                  | ssroom                    | Mechanical Room Clean                      | N/A  |
| Filters Installed Properly Yes   | Filters Clean                                  | No                        | Inside of HVAC Unit Clean                  | N/A  |
| Condensate Pan Clean N/A   | Cooling Coil Clean                             | N/A                       |  |      |
| Fresh Air Intake Location  | Thru exterior wall                             | ▼                         | Fresh Air Intake Free of Obstruction       | Yes  |
| Pollutant Sources Near Air<br>Intake   | Grass and landscape                            | ▼                         | oi Obstituction                            |      |
| Observations   |  |                           |  |      |
| HFSP states the filters are due for<br>order was called into roofers bur<br>droppings are visible on the top | t stains are still there. Wall stair           |                           |  |      |
|  |  |                           |  |      |

| Corrective Actions to be Completed by Site Based Staff |                |  |  |  |
|--|----------------|--|--|--|
| Thoroughly clean elevated surfaces                     | ┰              |  |  |  |
| Remove and replace A/C filters                         | $\blacksquare$ |  |  |  |
| Replace stained ceiling tiles after repairs            | $\blacksquare$ |  |  |  |
| Vacuum return grill                                    |                |  |  |  |
| Generate a work order for pest control                 |                |  |  |  |
|  | ┰              |  |  |  |
|  |                |  |  |  |
|  | ▼              |  |  |  |

#### **Corrective Actions to be Completed by PPO**

| corrective retions to be completed by 1.1.         |   |
|--|---|
| Evaluate and repair cause of stained ceiling tiles | ▼ |
| Evaluate and repair cause of water damage          | ▼ |
| to wall material                                   | ▼ |
| Remove and replace wall material as necessary      | ▼ |
|  | ▼ |
|  | ▼ |
|  | ▼ |
|  | ▼ |