

# managing risk with responsibility

Aston A. Henry, Dire	ector
Risk Management De	epartment

 Telephone:
 754 321-1900

 Fax:
 754 321-1917

April 23, 2015	Signature on File	For Custodial Supervisor Use Only
TO:	Michelle Alvarez, Principal <b>Bethune Elementary</b>	Custodial Issues Addressed Custodial Issues Not Addressed
FROM:	Richard Rosa, Project Manager Risk Management Department	
SUBJECT:	Indoor Air Quality (IAQ) Assessment	

On April 21, 2015, I conducted an assessment at **Bethune 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 754-321-1900.

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

RR/jj Enc.

	IAQ Assessi	ment		
Bethune	Elementary Evaluation Dat	e April 21, 2015	Time of Day 12:	15 PM
Outdoor Conditions Tempera	ature 77.6 Relative	e Humidity 93.6	Ambient CO2 4	42
		Range <u>CO</u> % - 60% 474		ccupants
Noticeable Odor No	Visible water damage / staining?	Visible microbial growth?	Amount of material affected	
Ceiling         12"x12"           Walls         Plaster           Floor         12" x 12" Vinyl	No No	No No		
Ceiling Clean Yes Walls Clean Yes Flooring Clean Yes	HVAC Supply Grills Clean Inside of Supply Duct Clean	Yes	HVAC Return Grills Clean Inside of Return Duct Clean	N/a N/A
Room Surfaces No Clean	Ceiling at Supply Grills Clean	Yes		
Trash RemovedYesSigns of PestsYesRoom ClutteredYes	Exhaust Fans Working Drain Traps Wet Food if Stored in Room is in Sealed Containers	N/A N/A N/A	Unapproved Chemicals / Cleaners in Room Air Fresheners in Room	No
Mechanical Equipment Location Filters Installed Properly N/A Condensate Pan Clean N/A		N/A N/A	Mechanical Room Clean Inside of HVAC Unit Clean	n/a N/A
Fresh Air Intake Location Pollutant Sources Near Air Intake	Roof top Standing water	<ul><li>▼</li></ul>	Fresh Air Intake Free of Obstruction	Yes
Observations The roof top units were not acce N/A Not Accessible N/A Not applicable	ssible due to the rain.			

Install proper filters, tape and date.	▼
Dust on Jalousie windows, clean both	▼
sides of windows	▼
Leave one Jalousie window open for better cross	▼
ventilation due to return is in the corridor	▼
Coordinate a schedule between HFSP and	▼
classroom Instructor to clean properly due to clutte	er ▼
Bug droppings on window sills, call in work order	•

Replace broken and missing 12" x 12" tile	▼
in Corridor	▼
Repair HVAC to Reduce Humidity Levels	▼
	▼
	▼
	▼
	▼
	▼

	IAQ Assess	ment		
Bethune	Elementary Evaluation Dat	e April 21, 2015	Time of Day 11:	45 AM
Outdoor Conditions Tempera	ture 77.6 Relative	Humidity 93.6	Ambient CO2 4	42
		Range         CO           % - 60%         505		ccupants
Noticeable Odor No	Visible water damage / staining?	Visible microbial growth?	Amount of material affected	
Ceiling 12"x12" Walls Plaster	No No	No		
Floor 12" x 12" Vinyl	Νο	No		
Ceiling Clean Yes Walls Clean Yes	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	N/a
Flooring Clean Yes	Inside of Supply Duct Clean	Yes	Inside of Return Duct Clean	N/A
Room Surfaces Yes Clean	Ceiling at Supply Grills Clean	Yes		
Trash Removed Yes	Exhaust Fans Working	N/A	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests No	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	Roof Top		Mechanical Room Clean	n/a
Filters Installed Properly N/A	Filters Clean	N/A	Inside of HVAC Unit Clean	N/A
Condensate Pan Clean N/A	Cooling Coil Clean	N/A		
Fresh Air Intake Location	Roof top	▼	Fresh Air Intake Free of Obstruction	Yes
Pollutant Sources Near Air Intake	Standing water	▼	of Obstruction	
Observations				
The roof top units were not acce N/A Not Accessible N/A not applicable	essible due to the rain.			

Install proper filters, tape and date.       ▼         Mold growth on Jalousie windows, clean both       ▼         sides of windows       ▼         Leave one Jalousie window open for better cross       ▼         ventilation due to return is in the corridor       ▼         ▼       ▼         ✓       ▼         ✓       ▼         ✓       ▼         ✓       ▼         ✓       ▼         ✓       ▼         ✓       ▼		
sides of windows     ▼       Leave one Jalousie window open for better cross     ▼	Install proper filters, tape and date.	▼
Leave one Jalousie window open for better cross	Mold growth on Jalousie windows, clean both	▼
	sides of windows	▼
ventilation due to return is in the corridor       ▼         ▼       ▼         ▼       ▼         ▼       ▼	Leave one Jalousie window open for better cross	▼
▼ ▼ ▼	ventilation due to return is in the corridor	▼
▼ ▼		▼
▼		▼
		▼

Replace broken and missing 12" x 12" tile	▼
in Corridor	▼
Repair HVAC to Reduce Humidity Levels	▼
	▼
	▼
	▼
	▼
	▼

	IAQ Assessi	ment		
Bethune	Elementary Evaluation Dat	e April 21, 2015	Time of Day 12:	45 PM
Outdoor Conditions Tempera	ture 77.6 Relative	Humidity 93.6	Ambient CO2 4	42
		Range         CO <sup>2</sup> % - 60%         507		cupants
Noticeable Odor No	Visible water damage / staining?	Visible microbial growth?	Amount of material affected	
Ceiling 12"x12" Walls Plaster	No	No		
Floor12" x 12" Vinyl	No	No		
Ceiling Clean Yes Walls Clean Yes	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	N/a
Flooring Clean Yes	Inside of Supply Duct Clean	Yes	Inside of Return Duct Clean	N/A
Room Surfaces No	Ceiling at Supply Grills Clean	Yes		
Trash Removed Yes	Exhaust Fans Working	N/A	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests No	Drain Traps Wet	N/A		
Room Cluttered Yes	Food if Stored in Room is in Sealed Containers	N/A	Air Fresheners in Room	No
Mechanical Equipment Location	Roof Top		Mechanical Room Clean	n/a
Filters Installed Properly N/A	Filters Clean	N/A	Inside of HVAC Unit Clean	N/A
Condensate Pan Clean N/A	Cooling Coil Clean	N/A		
Fresh Air Intake Location	Roof top	▼	Fresh Air Intake Free of Obstruction	Yes
Pollutant Sources Near Air Intake	Standing water	▼	of Obstruction	
Observations				
The roof top units were not acce N/A Not Accessible	ssible due to the rain.			
N/A Not applicable				

Install proper filters, tape and date.	▼
Dust on Jalousie windows, clean both	▼
sides of windows	▼
Leave one Jalousie window open for better cross	▼
ventilation due to return is in the corridor	▼
Coordinate a schedule between HFSP and	▼
classroom Instructor to clean properly due to clutter	▼
	▼

Replace broken and missing 12" x 12" tile	▼
in Corridor	▼
Repair HVAC to Reduce Humidity Levels	▼
	▼
	▼
	▼
	▼
	▼

Fish       Temperature       Range       Relative Humidity       Range       CO2       Range       # Occupants         611       73.0       72 - 78       62.7       30% - 60%       507       MAX 700 >		IAQ Assess	ment		
Fish       Temperature       Range       Relative Humidity       Range       CO2       Range       # Occupants         611       73.0       72 - 78       62.7       30% - 60%       507       MAX 700 >	Bethune	Elementary Evaluation Date	te April 21, 2015	Time of Day 1:1	5 PM
611       73.0       72 - 78       62.7       30% - 60%       507       MAX 700 > Ambient         Noticeable Odor       No       Visible water damage / staining?       Visible microbial growth?       Amount of material affected         Ceiling       12"x12"       No       No	Dutdoor Conditions Tempera	ature 77.6 Relative	e Humidity 93.6	Ambient CO2 4	42
Noticeable Odor       No       material affected         Ceiling       12"x12"       No       No         Walls       Plaster       No       No         Floor       12" x12"       No       No         Ceiling Clean       Yes       HVAC Supply       No         Grills Clean       Yes       HVAC Supply       Yes         Walls Clean       Yes       Inside of Supply       Yes         Flooring Clean       Yes       Inside of Supply       Yes         Flooring Clean       Yes       Duct Clean       N/A         Room Surfaces       No       Ceiling at Supply       Yes         Grills Clean       Yes       Duct Clean       No         Signs of Pests       No       Drain Traps Wet       N/A         Room Cluttered       Yes       Food if Stored in Room is in Sealed Containers       N/A         Mechanical Equipment Location       Roof Top       Mechanical Room Clean       N/A         Fresh Air Intake Location       Roof top       Yes       Fresh Air Intake Free of Obstruction       Yes         Pollutant Sources Near Air       Standing water       Y       Fresh Air Intake Free of Obstruction       Yes         Observations       The roof top units wer			5	MAX 700 >	cupants
Walls       Plaster       No       No       No         Floor       12" x 12" Vinyl       No       No       No         Ceiling Clean       Yes       HVAC Supply Grills Clean       Yes       HVAC Return Grills Clean       N/a         Walls Clean       Yes       Inside of Supply Duct Clean       Yes       Inside of Return Duct Clean       N/a         Room Surfaces       No       Ceiling at Supply Grills Clean       Yes       Inside of Return Duct Clean       N/A         Trash Removed       Yes       Exhaust Fans Working       N/A       Unapproved Chemicals / Cleaners in Room       No         Signs of Pests       No       Drain Traps Wet       N/A       Air Fresheners in Room       No         Mechanical Equipment Location       Roof Top       Mechanical Room Clean       n/a         Fliters Installed Properly       N/A       Filters Clean       N/A       Inside of HVAC Unit Clean       N/A         Fresh Air Intake Location       Roof top       Yes       Fresh Air Intake Free of Obstruction       Yes         Observations       Tooling water       Yes       The roof top units were not accessible due to the rain.       Tooling to the rain.       Tooling to the rain.	Noticeable Odor No				
Ceiling Clean       Yes       HVAC Supply Grills Clean       Yes       HVAC Return Grills Clean       N/a         Walls Clean       Yes       Inside of Supply Duct Clean       Yes       Inside of Return Duct Clean       N/a         Room Surfaces       No       Ceiling at Supply Grills Clean       Yes       Inside of Return Duct Clean       N/A         Trash Removed       Yes       Exhaust Fans Working       N/A       Unapproved Chemicals / Cleaners in Room       No         Signs of Pests       No       Drain Traps Wet       N/A       Air Fresheners in Sealed Containers       No         Mechanical Equipment Location       Roof Top       Mechanical Room Clean       n/a         Filters Installed Properly       N/A       Cooling Coil Clean       N/A         Fresh Air Intake Location       Roof top       Yes       Fresh Air Intake Free of Obstruction       Yes         Pollutant Sources Near Air Intake       Standing water       Y       Yes       Yes       Yes	<b>3</b>				
Walls Clean       Yes       Grills Clean       Yes       Grills Clean       N/a         Walls Clean       Yes       Inside of Supply Duct Clean       Yes       Inside of Return Duct Clean       N/A         Room Surfaces Clean       No       Ceiling at Supply Grills Clean       Yes       Inside of Return Duct Clean       N/A         Trash Removed       Yes       Exhaust Fans Working       N/A       Unapproved Chemicals / Cleaners in Room       No         Signs of Pests       No       Drain Traps Wet       N/A       Air Fresheners in Room       No         Room Cluttered       Yes       Food if Stored in Room is in Sealed Containers       N/A       Mechanical Room Clean       n/a         Filters Installed Properly       N/A       Filters Clean       N/A       Inside of HVAC Unit Clean       N/A         Fresh Air Intake Location       Roof top       ▼       Fresh Air Intake Free of Obstruction       Yes         Observations       Standing water       ▼       Standing water       ▼       Yes	Floor 12" x 12" Vinyl	No	No		
Flooring Clean       Yes       Inside of Supply Duct Clean       Yes       Inside of Return Duct Clean       N/A         Room Surfaces Clean       No       Ceiling at Supply Grills Clean       Yes       Inside of Return Duct Clean       N/A         Trash Removed       Yes       Exhaust Fans Working       N/A       Unapproved Chemicals / Cleaners in Room       No         Signs of Pests       No       Drain Traps Wet       N/A       Air Fresheners in Sealed Containers       No         Mechanical Equipment Location       Roof Top       Mechanical Room Clean       n/a         Filters Installed Properly       N/A       Filters Clean       N/A       Inside of HVAC Unit Clean       N/A         Fresh Air Intake Location       Roof top       ▼       Fresh Air Intake Free of Obstruction       Yes         Observations       Standing water       ▼       Tresh Air Intake Free of Obstruction       Yes			Yes		N/a
Clean       Grills Clean       Yes         Trash Removed       Yes       Exhaust Fans Working       N/A       Unapproved Chemicals / Cleaners in Room         Signs of Pests       No       Drain Traps Wet       N/A       Air Fresheners in Room       No         Room Cluttered       Yes       Food if Stored in Room is in Sealed Containers       N/A       Air Fresheners in Room       No         Mechanical Equipment Location       Roof Top       Mechanical Room Clean       n/a         Filters Installed Properly       N/A       Filters Clean       N/A       Inside of HVAC Unit Clean       N/A         Condensate Pan Clean       N/A       Cooling Coil Clean       N/A       Fresh Air Intake Free of Obstruction       Yes         Observations       Standing water       V       The roof top units were not accessible due to the rain.       V			Yes		N/A
Signs of Pests No   No Drain Traps Wet   Room Cluttered Yes   Food if Stored in Room is in Sealed Containers N/A     Mechanical Equipment Location Roof Top   Mechanical Equipment Location Roof Top   Mechanical Room Clean   n/a   Filters Installed Properly N/A   Condensate Pan Clean N/A   Condensate Pan Clean N/A   Cooling Coil Clean N/A   Fresh Air Intake Location   Roof top Vestor   Fresh Air Intake Location   Pollutant Sources Near Air Standing water   Intake Standing water   Observations The roof top units were not accessible due to the rain.			Yes		
Signs of Pests       No       Drain Traps Wet       N/A       Air Fresheners in Room       No         Room Cluttered       Yes       Food if Stored in Room is in Sealed Containers       N/A       Air Fresheners in Room       No         Mechanical Equipment Location       Roof Top       Mechanical Room Clean       n/a         Filters Installed Properly       N/A       Filters Clean       N/A       Inside of HVAC Unit Clean       N/A         Condensate Pan Clean       N/A       Cooling Coil Clean       N/A       Fresh Air Intake Free of Obstruction       Yes         Pollutant Sources Near Air Intake       Standing water       ▼       Fresh Air Intake Free of Obstruction       Yes	Trash Removed Yes	Exhaust Fans Working	N/A		No
Room Cluttered       Yes       Food if Stored in Room is in Sealed Containers       N/A       in Room         Mechanical Equipment Location       Roof Top       Mechanical Room Clean       n/a         Filters Installed Properly       N/A       Filters Clean       N/A       Inside of HVAC Unit Clean       N/A         Condensate Pan Clean       N/A       Cooling Coil Clean       N/A       Fresh Air Intake Location       N/A       Fresh Air Intake Free of Obstruction       Yes         Pollutant Sources Near Air Intake       Standing water       ▼       Fresh Air Intake Free of Obstruction       Yes         Observations       The roof top units were not accessible due to the rain.       Image: Content in the roof in t	Signs of Pests No	Drain Traps Wet	N/A		
Filters Installed Properly       N/A       Filters Clean       N/A       Inside of HVAC Unit Clean       N/A         Condensate Pan Clean       N/A       Cooling Coil Clean       N/A       N/A       Fresh Air Intake Location       Fresh Air Intake Free of Obstruction       Fresh Air Intake Free of Obstruction       Yes         Pollutant Sources Near Air Intake       Standing water       ▼       Fresh Air Intake Free of Obstruction       Yes         Observations       The roof top units were not accessible due to the rain.       Fresh Air Intake       Fresh Air Intake       Fresh Air Intake	Room Cluttered Yes		N/A		
Condensate Pan Clean N/A   Fresh Air Intake Location Roof top   Pollutant Sources Near Air Standing water   Intake V   Observations The roof top units were not accessible due to the rain.	Mechanical Equipment Location	Roof Top		Mechanical Room Clean	n/a
Fresh Air Intake Location       Roof top       Image: Construction       Fresh Air Intake Free of Obstruction       Yes         Pollutant Sources Near Air Intake       Standing water       Image: Construction       Image: Construction       Yes         Observations       The roof top units were not accessible due to the rain.       Image: Construction       Image: Construction <td< td=""><td>Filters Installed Properly</td><td>Filters Clean</td><td>N/A</td><td>Inside of HVAC Unit Clean</td><td>N/A</td></td<>	Filters Installed Properly	Filters Clean	N/A	Inside of HVAC Unit Clean	N/A
Pollutant Sources Near Air       Standing water       of Obstruction       Yes         Intake       Intak	Condensate Pan Clean N/A	Cooling Coil Clean	N/A		
Pollutant Sources Near Air Intake       Standing water       Image: Construction         Observations       Image: Construction       Image: Construction         The roof top units were not accessible due to the rain.       Image: Construction       Image: Construction	Fresh Air Intake Location	Roof top	▼		Yes
The roof top units were not accessible due to the rain.		Standing water	▼	of Obstruction	·
	N/A Not Accessible	essible due to the rain.			
N/A Not Applicable					

Install proper filters, tape and date.	▼
Dust on Jalousie windows, clean both	▼
sides of windows	▼
Leave one Jalousie window open for better cross	▼
ventilation due to return is in the corridor	▼
Coordinate a schedule between HFSP and	▼
assroom Instructor to clean properly due to clutter	▼
	▼

Replace broken and missing 12" x 12" tile	▼
in Corridor	▼
Repair HVAC to Reduce Humidity Levels	▼
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