

Aston A. Henry, Director
Risk Management Department

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July 10, 2013

Signature on File

TO: John LaCasse, Principal
Nova High School

FROM: Richard Rosa, Project Manager
Risk Management Department

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 June 12, 2013, I conducted an assessment at **Nova 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: Shelley Meloni, Task Assigned Chief Facilities & Construction Officer, 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/tc
Enc.

IAQ Assessment

Nova High

Evaluation Date

Time of Day

Outdoor Conditions Temperature

Relative Humidity

Ambient CO2

| | | | | | | | |
|-----------------------------------|---|--------------------------------------|---|--|----------------------------------|--|-----------------------------|
| Fish | Temperature | Range | Relative Humidity | Range | CO ² | Range | # Occupants |
| <input type="text" value="373"/> | <input type="text" value="71.0"/> | <input type="text" value="72 - 78"/> | <input type="text" value="52.8"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="458"/> | <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 | <input type="text" value="2' x 4'"/> | | <input type="text" value="Yes"/> | | <input type="text" value="No"/> | <input type="text" value="3 stained ceiling tiles"/> | |
| Walls | <input type="text" value="Drywall"/> | | <input type="text" value="Yes"/> | | <input type="text" value="Yes"/> | <input type="text" value=">60 sq ft"/> | |
| Floor | <input 12"="" type="text" value="12" vinyl"="" x=""/> | | <input type="text" value="No"/> | | <input type="text" value="No"/> | <input type="text"/> | |
| Ceiling Clean | | <input type="text" value="No"/> | HVAC Supply Grills Clean | | <input type="text" value="No"/> | HVAC Return Grills Clean | |
| Walls Clean | | <input type="text" value="No"/> | Inside of Supply Duct Clean | | <input type="text" value="Yes"/> | Inside of Return Duct Clean | |
| Flooring Clean | | <input type="text" value="Yes"/> | Ceiling at Supply Grills Clean | | <input type="text" value="No"/> | | |
| Room Surfaces Clean | | <input type="text" value="Yes"/> | | | | | |
| Trash Removed | | <input type="text" value="Yes"/> | Exhaust Fans Working | | <input type="text" value="N/A"/> | Unapproved Chemicals / Cleaners in Room | |
| Signs of Pests | | <input type="text" value="No"/> | Drain Traps Wet | | <input type="text" value="N/A"/> | Air Fresheners in Room | |
| Room Cluttered | | <input type="text" value="No"/> | Food if Stored in Room is in Sealed Containers | | <input type="text" value="N/A"/> | | |
| Mechanical Equipment Location | | | <input type="text" value="Above Ceiling"/> | | | Mechanical Room Clean | |
| Filters Installed Properly | | <input type="text" value="N/A"/> | Filters Clean | | <input type="text" value="N/A"/> | Inside of HVAC Unit Clean | |
| Condensate Pan Clean | | <input type="text" value="N/A"/> | Cooling Coil Clean | | <input type="text" value="N/A"/> | | |
| Fresh Air Intake Location | | | <input type="text" value="Not readily accessible"/> | | | Fresh Air Intake Free of Obstruction | |
| Pollutant Sources Near Air Intake | | | <input type="text" value="Not readily accessible"/> | | | <input type="text" value="N/A"/> | |

Observations

HFSP states that on 6/6/2013 the HVAC went down and when the HVAC came back on condensation formed on all surfaces. The newly waxed floors were not drying and on 6/10/2013 microbial growth was seen on all the walls. The HVAC system has been in override so the waxed floors can dry.

Corrective Actions to be Completed by Site Based Staff

| | |
|--|---|
| Replace stained ceiling tiles after repair | ▼ |
| Clean ceilings around HVAC supply grills | ▼ |
| Wipe down wall stains, monitor after HVAC repair | ▼ |
| Continue to monitor and wipe surfaces w/ wexcide | ▼ |
| Clean HVAC supply grills with Wexcide | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |

Corrective Actions to be Completed by PPO

| | |
|--|---|
| Evaluate and repair cause of stained ceiling tiles | ▼ |
| Check HVAC system for proper operation and repair as appropriate | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |

IAQ Assessment

Nova High

Evaluation Date

Time of Day

Outdoor Conditions Temperature

Relative Humidity

Ambient CO2

| | | | | | | | |
|-----------------------------------|---|--------------------------------------|---|--|----------------------------------|---|-----------------------------|
| Fish | Temperature | Range | Relative Humidity | Range | CO ² | Range | # Occupants |
| <input type="text" value="374A"/> | <input type="text" value="68.5"/> | <input type="text" value="72 - 78"/> | <input type="text" value="59.5"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="465"/> | <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 | <input type="text" value="2' x 4'"/> | | <input type="text" value="No"/> | | <input type="text" value="No"/> | <input type="text"/> | |
| Walls | <input type="text" value="Drywall"/> | | <input type="text" value="Yes"/> | | <input type="text" value="Yes"/> | <input type="text" value="> 250 sq ft"/> | |
| Floor | <input 12"="" type="text" value="12" vinyl"="" x=""/> | | <input type="text" value="No"/> | | <input type="text" value="No"/> | <input type="text"/> | |
| Ceiling Clean | | <input type="text" value="Yes"/> | HVAC Supply Grills Clean | | <input type="text" value="Yes"/> | HVAC Return Grills Clean | |
| Walls Clean | | <input type="text" value="No"/> | Inside of Supply Duct Clean | | <input type="text" value="Yes"/> | Inside of Return Duct Clean | |
| Flooring Clean | | <input type="text" value="Yes"/> | Ceiling at Supply Grills Clean | | <input type="text" value="Yes"/> | | |
| Room Surfaces Clean | | <input type="text" value="Yes"/> | | | | | |
| Trash Removed | | <input type="text" value="Yes"/> | Exhaust Fans Working | | <input type="text" value="N/A"/> | Unapproved Chemicals / Cleaners in Room | |
| Signs of Pests | | <input type="text" value="No"/> | Drain Traps Wet | | <input type="text" value="N/A"/> | Air Fresheners in Room | |
| Room Cluttered | | <input type="text" value="No"/> | Food if Stored in Room is in Sealed Containers | | <input type="text" value="N/A"/> | | |
| Mechanical Equipment Location | | | <input type="text" value="Above Ceiling"/> | | | Mechanical Room Clean | |
| Filters Installed Properly | | <input type="text" value="N/A"/> | Filters Clean | | <input type="text" value="N/A"/> | Inside of HVAC Unit Clean | |
| Condensate Pan Clean | | <input type="text" value="N/A"/> | Cooling Coil Clean | | <input type="text" value="N/A"/> | | |
| Fresh Air Intake Location | | | <input type="text" value="Not readily accessible"/> | | | Fresh Air Intake Free of Obstruction | |
| Pollutant Sources Near Air Intake | | | <input type="text" value="Not readily accessible"/> | | | <input type="text" value="N/A"/> | |

Observations

HFSP states that on 6/6/2013 the HVAC went down and when the HVAC came back on condensation formed on all surfaces. The newly waxed floors were not drying and on 6/10/2013 microbial growth was seen on all the walls. The HVAC system has been in override so the waxed floors can dry. Also there is a capped off drain protruding from the wall and there is wet wallboard underneath the drain.

Corrective Actions to be Completed by Site Based Staff

| | |
|--|---|
| Wipe down wall stains, monitor after HVAC repair | ▼ |
| Continue to monitor and wipe surfaces w/ wexcide | ▼ |
| Vacuum/wipe return grill | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |

Corrective Actions to be Completed by PPO

| | |
|---|---|
| Set temperature to 72 - 78 degrees | ▼ |
| Check HVAC system for proper operation | ▼ |
| and repair as appropriate | ▼ |
| Evaluate and repair cause of water damage | ▼ |
| Remove and replace wall material as necessary | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |

IAQ Assessment

Nova High

Evaluation Date

Time of Day

Outdoor Conditions Temperature

Relative Humidity

Ambient CO2

| | | | | | | | |
|-----------------------------------|---|--------------------------------------|---|--|----------------------------------|---|-----------------------------|
| Fish | Temperature | Range | Relative Humidity | Range | CO ² | Range | # Occupants |
| <input type="text" value="377"/> | <input type="text" value="71.6"/> | <input type="text" value="72 - 78"/> | <input type="text" value="55.9"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="459"/> | <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 | <input type="text" value="2' x 4'"/> | | <input type="text" value="No"/> | | <input type="text" value="No"/> | <input type="text"/> | |
| Walls | <input type="text" value="Drywall"/> | | <input type="text" value="Yes"/> | | <input type="text" value="Yes"/> | <input type="text" value="> 64 sq ft"/> | |
| Floor | <input 12"="" type="text" value="12" vinyl"="" x=""/> | | <input type="text" value="No"/> | | <input type="text" value="No"/> | <input type="text"/> | |
| Ceiling Clean | | <input type="text" value="No"/> | HVAC Supply Grills Clean | | <input type="text" value="No"/> | HVAC Return Grills Clean | |
| Walls Clean | | <input type="text" value="No"/> | | | | | |
| Flooring Clean | | <input type="text" value="Yes"/> | Inside of Supply Duct Clean | | <input type="text" value="Yes"/> | Inside of Return Duct Clean | |
| Room Surfaces Clean | | <input type="text" value="Yes"/> | Ceiling at Supply Grills Clean | | <input type="text" value="No"/> | | |
| Trash Removed | | <input type="text" value="Yes"/> | Exhaust Fans Working | | <input type="text" value="N/A"/> | Unapproved Chemicals / Cleaners in Room | |
| Signs of Pests | | <input type="text" value="No"/> | Drain Traps Wet | | <input type="text" value="N/A"/> | Air Fresheners in Room | |
| Room Cluttered | | <input type="text" value="No"/> | Food if Stored in Room is in Sealed Containers | | <input type="text" value="N/A"/> | | |
| Mechanical Equipment Location | | | <input type="text" value="Above Ceiling"/> | | | Mechanical Room Clean | |
| Filters Installed Properly | | <input type="text" value="N/A"/> | Filters Clean | | <input type="text" value="N/A"/> | Inside of HVAC Unit Clean | |
| Condensate Pan Clean | | <input type="text" value="N/A"/> | Cooling Coil Clean | | <input type="text" value="N/A"/> | | |
| Fresh Air Intake Location | | | <input type="text" value="Not readily accessible"/> | | | Fresh Air Intake Free of Obstruction | |
| Pollutant Sources Near Air Intake | | | <input type="text" value="Not readily accessible"/> | | | <input type="text" value="N/A"/> | |

Observations

HFSP states that on 6/6/2013 the HVAC went down and when the HVAC came back on condensation formed on all surfaces. The newly waxed floors were not drying and on 6/10/2013 microbial growth was seen on all the walls. The HVAC system has been in override so the waxed floors can dry. Also there is a capped off drain protruding from the wall and there is wet wallboard underneath the drain.

Corrective Actions to be Completed by Site Based Staff

| | |
|--|---|
| Clean ceilings around HVAC supply grills | ▼ |
| Clean HVAC supply grills with Wexcide | ▼ |
| Wipe down wall stains, monitor after HVAC repair | ▼ |
| Continue to monitor and wipe surfaces w/ wexcide | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |

Corrective Actions to be Completed by PPO

| | |
|---|---|
| Check HVAC system for proper operation | ▼ |
| and repair as appropriate | ▼ |
| Evaluate and repair cause of water damage | ▼ |
| Remove and replace wall material as necessary | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |

IAQ Assessment

Nova High

Evaluation Date June 12, 2013

Time of Day 3:40

Outdoor Conditions Temperature 80.7

Relative Humidity 81.7

Ambient CO2 436

| | | | | | | | | | | | | | | | |
|-----------------------------------|---|--|--|--|---|---|--|---|---|---|---|---|--|-------------|--|
| Fish | 379 | Temperature | 68 | Range | 72 - 78 | Relative Humidity | 75.6 | Range | 30% - 60% | CO ² | 451 | Range | MAX 700 > Ambient | # Occupants | |
| Noticeable Odor | | No | | Visible water damage / staining? | | Visible microbial growth? | | Amount of material affected | | | | | | | |
| Ceiling | 2' x 4' | | | | | No | No | | | | | | | | |
| Walls | Drywall | | | | | Yes | Yes | >200 sq ft | | | | | | | |
| Floor | 12" x 12" Vinyl | | | | | No | No | | | | | | | | |
| Ceiling Clean | | No | | HVAC Supply Grills Clean | | Yes | | HVAC Return Grills Clean | | Yes | | | | | |
| Walls Clean | | No | | Inside of Supply Duct Clean | | Yes | | Inside of Return Duct Clean | | Yes | | | | | |
| Flooring Clean | | Yes | | Ceiling at Supply Grills Clean | | No | | | | | | | | | |
| Room Surfaces 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 in Room | | No | | | | | |
| Room Cluttered | | No | | Food if Stored in Room is in Sealed Containers | | N/A | | | | | | | | | |
| Mechanical Equipment Location | | Above Ceiling | | | | | | | | 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 | | Not readily accessible ▼ | | | | | | | | Fresh Air Intake Free of Obstruction | | N/A | | | |
| Pollutant Sources Near Air Intake | | Not readily accessible ▼ | | | | | | | | | | | | | |

Observations

HFSP states that on 6/6/2013 the HVAC went down and when the HVAC came back on condensation formed on all surfaces. The newly waxed floors were not drying and on 6/10/2013 microbial growth was seen on all the walls. The HVAC system has been in override so the waxed floors can dry. There is a 150 sq ft of microbial growth and 50 sq ft of damaged wall board due to water intrusion.

Corrective Actions to be Completed by Site Based Staff

| | |
|--|---|
| | ▼ |
| Clean ceilings around HVAC supply grills | ▼ |
| Wipe down wall stains, monitor after HVAC repair | ▼ |
| Continue to monitor and wipe surfaces w/ wexcide | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |
| | ▼ |

Corrective Actions to be Completed by PPO

| | |
|---|---|
| Set temperature to 72 - 78 degrees | ▼ |
| Repair HVAC to reduce humidity level | ▼ |
| Evaluate HVAC system for proper operation and repair as appropriate | ▼ |
| Evaluate and repair cause of water damage | ▼ |
| Remove and replace wall material as necessary | ▼ |
| | ▼ |
| | ▼ |