

ROBERT C. MARKHAM ELEMENTARY SCHOOL

**1501 NW 15th Ave
Pompano Beach, Fl.**

Moisture/Mold Evaluation Of Building 3

Prepared for:

**Broward School District
Facilities and Construction Management
1700 SW 14th Court
Ft. Lauderdale, Fl 33312
Attn. Gerry Davio**

By
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1.0 Background

Morse Zehnter Associates (MZA), a Division of Dyanki was requested by the Facilities and Construction Management Department of Broward School District to evaluate the 300 Building at Robert C. Markham Elementary School located at 1501 NW 15th Ave., Pompano Beach, Florida for moisture and /or mold issues.

This report documents the results of the inspection.

2.0 Visual Observations/Moisture Measurements

Paul Haas, Industrial Hygienist for MZA inspected Rooms 301 -304 on January 24, 2008. Mr. Bello a Custodial Engineer provided MZA access to spaces to facilitate the inspection.

MZA used a Protimeter MMS Model BLD5800 to evaluate moisture content of the walls of the classroom(s) and associated mechanical equipment spaces. The moisture meter was operated in the search mode (non-destructive) which returns relative moisture readings between 0 and 1000. The meter measures moisture to approximately one-half inch deep in homogeneous substrates. Any reading over 170 on this scale is considered "At Risk". This means enough moisture is present in the material to initiate microbial growth. Readings above 200 on the scale indicate enough moisture is present to support active microbial growth.

Elevated readings were confirmed using the pin probe mode. In this mode the meter returns readings in percent moisture in reference to wood. When measuring substrates such as drywall the measurements are reported in wood moisture equivalents or % WME. Readings between 5% and 17% are considered dry. Readings between 17% and 20% are considered "At Risk". Readings above 20% are considered wet and conditions are conducive to mold growth.

Room 301/302:

According to the teacher Ms. Davis, the room has a musty smell in the mornings, especially on Mondays suggesting that there is a source of water damage in the room. According to the request for assistance from MZA the source was originally thought to be a leak from either the plumbing to sinks Room 301 or 302 or water from the drinking fountain on the sink cascading onto the cabinetry and wetting it. At the time of our inspection the area under the sinks did not have elevated moisture levels; however there were insects under the sink in Room 302. Immediately adjacent to the sink on the south wall of the classroom against the bathroom wall for 302 A, elevated moisture readings above 200 were noted in the survey mode. A confirmation pin probe reading indicated a section of the wallboard had a reading of 23.2 % W.M.E. approximately 5 inches above the finished floor elevation (FFE). This section of wallboard is immediately behind the commode in the adjoining room and this damage is likely from a plumbing leak of some kind. Approximately 8 square feet (SF) of wallboard appears to be wetted.

Room 303/304:

MZA immediately detected a musty odor upon entering room 303. The door to the Mechanical closet was opened and there was evidence of water leaking from condensation on the chilled water lines through the insulation or from leaks in the piping itself. The wallboard was saturated, with a reading of 999 in the moisture survey mode at approximately 2 feet above the floor level. The moisture content of the drywall in this area was elevated sufficiently to indicate this was a continuous leak. MZA also observed a small amount of mold on the base of the drywall which had paint over texture in 303B and 304B. Water damaged wallboard up to approximately 4' X 4' (32 SF) existed on the north wall of Room 303 B. A similarly affected area of approximately 32 SF of damaged wallboard was noted on the S wall of Room 304 B. At the time of the inspection the outside air intakes had been blanked off

into the mechanical spaces which would explain some of the strength of musty odors as no outside air was being introduced into the mechanical room to dilute the odors from the water damaged materials there.

See Representative Photographs, Appendix A.

3.0 Discussion and Recommendations

There are approximately 40 square feet of water damaged drywall with a minor amount of moldy drywall in the rooms 302, 303B and 304B in Building 300 at Robert C. Markham Elementary School.


Based on our observations and moisture measurements MZA recommends the following:

- Determine the sources of leaks and ensure they are repaired.
- Remove and replace the water damaged and moldy drywall.

Removal of large areas (greater than 10 SF) of potentially mold contaminated materials from a building should only be done by personnel with proper training and equipment for mold remediation. Depending on the age and type of materials in the wall construction in the mechanical spaces a site visit and inspection to identify suspect ACM that would be disturbed should be made. The inspection has to be performed by an EPA accredited asbestos inspector(s) working under the authority of a licensed Florida Asbestos Consultant.

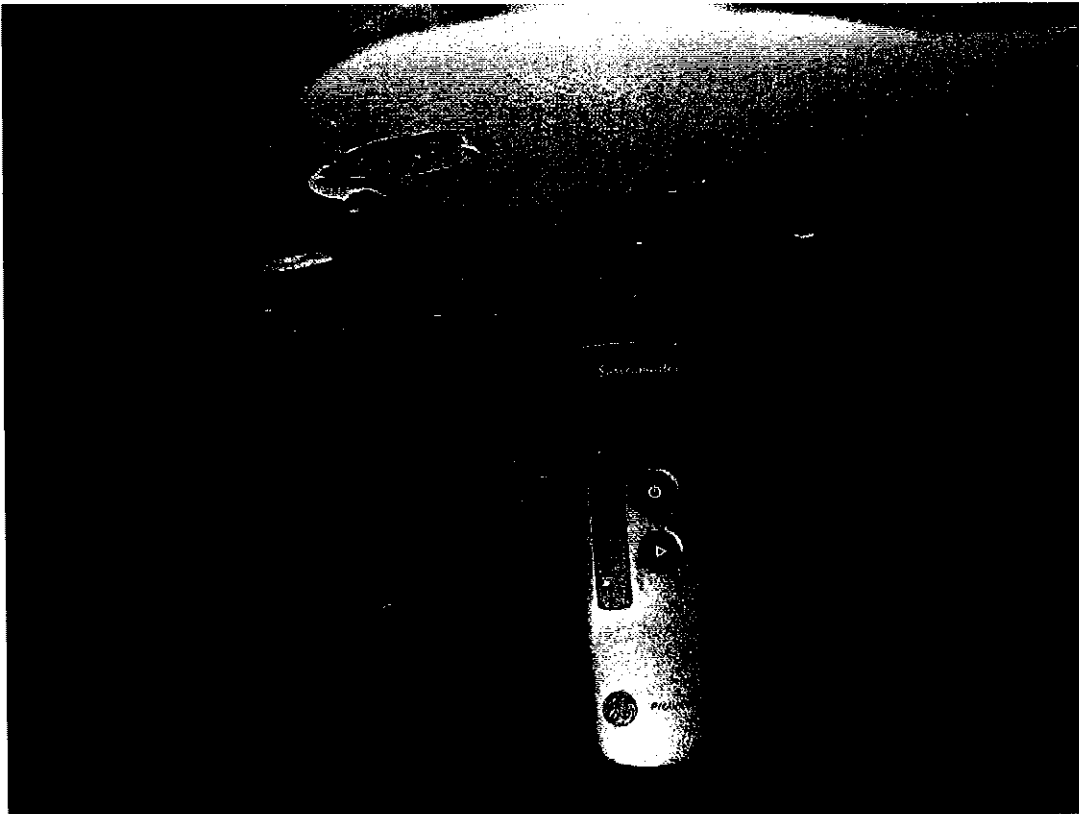
Information found in this report is for the exclusive use of the Broward School District. Any reproduction of this report must be approved in writing by the client or MZA. Conditions, observations and sampling results are representative of the date of initial inspection.

MZA appreciates the opportunity to provide you with air quality consulting services. If you have any questions concerning the information provided in this report please contact our office at 561-712-4777.

Sincerely,

Paul Haas CSP, CIH
Certified Industrial Hygienist

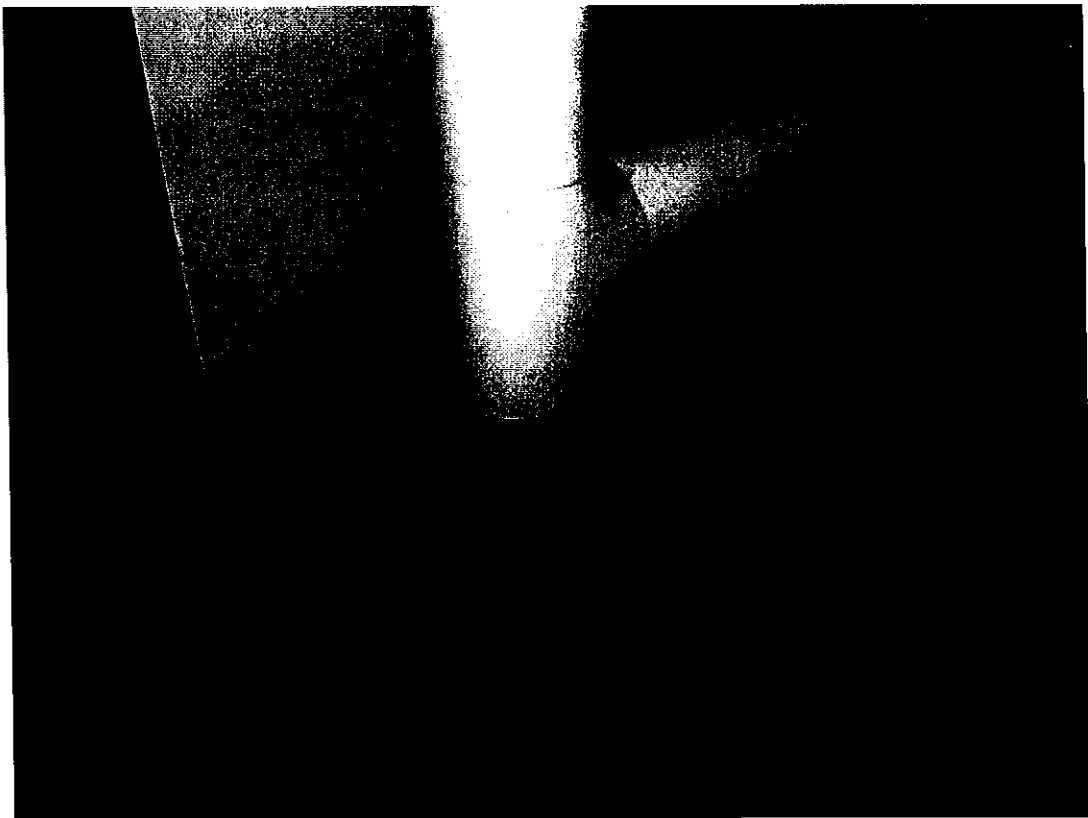
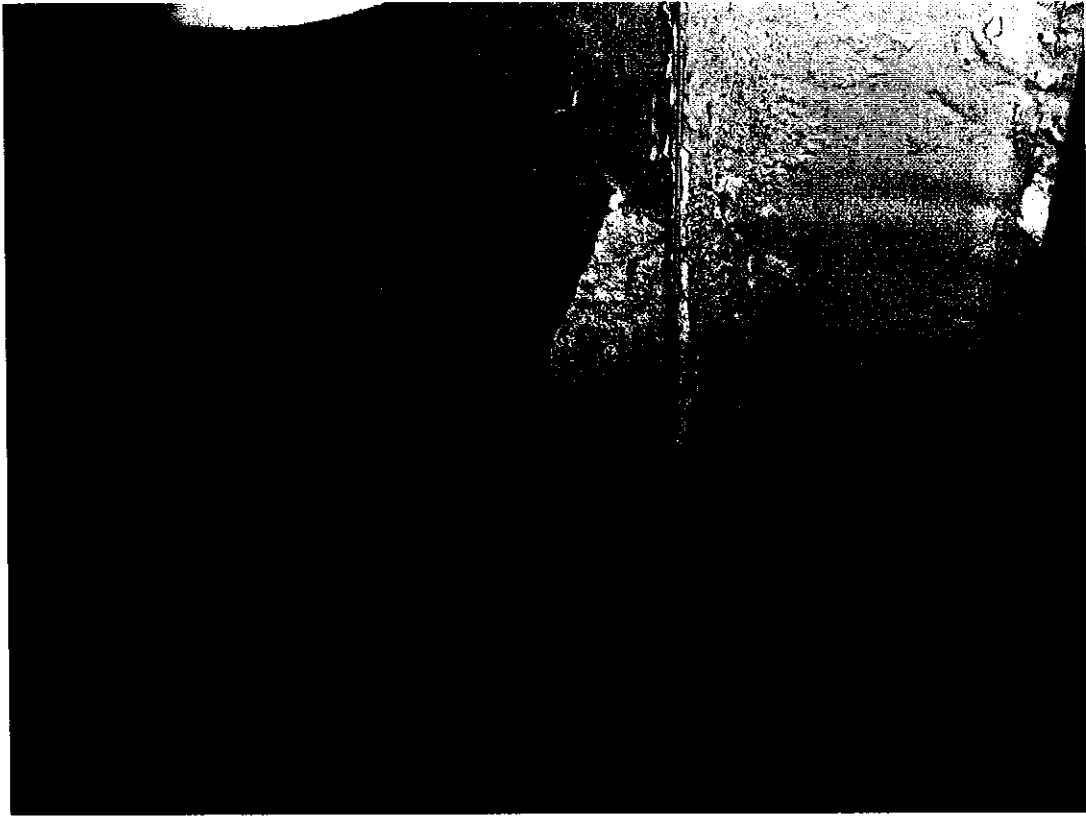
Appendix A

Representative Photographs



Room 303B – Profile of N. Wall with FCU condensate drain

Robert C. Markham Elementary School
Room 303 B – Close-up of mold on the drywall.



Room 304 B – Profile of S. wall with CHW piping and Condensate drain