

**Report For
Indoor Air Quality Study
AT THE
Schofield School
1993 Wing
Wellesley, MA**

Study Date:
December 16, 2011

Project# 211 265.00

STUDY CONDUCTED BY:

UNIVERSAL ENVIRONMENTAL CONSULTANTS

12 Brewster Road
Framingham, Massachusetts



December 19, 2011

Mr. Joseph McDonough
Wellesley Public Schools
40 Kingsbury Street
Wellesley, MA 02481

Reference: **Indoor Air Quality Study (IAQS)**
Schofield School, 1993 Wing

Dear Mr. McDonough:

Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional services.

Enclosed please find the report for Indoor Air Quality Study at the Schofield School, 1993 Wing conducted on Friday, December 16, 2011.

Please do not hesitate to call should you have any questions.

Very truly yours,

Universal Environmental Consultants

A handwritten signature in blue ink, appearing to read "Ammar M. Dieb", is written over a horizontal line.

Ammar M. Dieb
President

UEC:\211 265\IAQreport.Doc

Enclosure

1.0 Scope:

UEC was contracted to perform an Indoor Air Quality testing at the Schofield School 1993 Wing. Testing was performed on Friday, December 16, 2011.

On Friday, December 16, 2011 the average outside temperature was 48 and the average relative humidity was 44. The school was occupied over the course of the IAQ testing periods. Windows and doors were closed.

2.0 Methodology:

Carbon Dioxide (**CO₂**) was measured by means of TSI Qtrac-plus instrument. The instrument utilizes IR Technology to quantify **CO₂**. The instrument was recently calibrated prior to testing and serviced by an independent laboratory.

Temperature (**F**) and Relative Humidity (**RH %**) were collected by two TSI Qtrac-plus instruments.

3.0 Results:

CARBON DIOXIDE, TEMPERATURE & RELATIVE HUMIDITY

Location	# of Occupants	CO ₂ (PPM)	Temperature (F)	% RH
120	20	900	72.0	29.2
122	8	662	72.0	27.1
124	2	452	69.8	26.6
121	23	896	69.8	33.3
125	23	712	71.4	29.8
123	17	683	72.5	26.2
Outside	N/A	403	47.5	44.2

Legend:

CO₂: OSHA PEL is 5000 PPM and Mass DOH Guideline is 800 PPM

4.0 Observations and Interpretation of Results:

Temperature and Relative Humidity

Temperature was within the acceptable winter range in all of the areas tested according to the American Society of Heating, Refrigeration and Air-conditioning Engineers' ANSI/ASHRAE 55-1992 "**Thermal Environmental Conditions for Human Occupancy**" guideline. Relative Humidity (RH) was within the acceptable winter range in virtually all areas, according to the same guideline.

Carbon Dioxide

CO₂ levels were lower in Classrooms 122, 123, 124 and 125 and higher in Classrooms 120 and 121 than acceptable range. For comparative purposes, fresh outdoor air has approximately 360 PPM of **CO₂**. All areas were well below the OSHA/NIOSH limit of 5000 PPM. Two rooms were above the Massachusetts Department of Health guideline of 800 PPM for publicly occupied buildings. Massachusetts DOH recommends an optimal level of below 600 PPM. Exposure to high levels of **CO₂** for prolonged periods could cause building occupants to become lethargic and generally uncomfortable. **CO₂** levels will rise over the course of the day especially in those areas which have a high occupancy. **High CO₂, at these levels, are a comfort as opposed to a health issue.**

5.0 Conclusions:

CO₂ levels at two classrooms were above recommended level. It is recommended that the Air Handling Units (AHUs) are continuously checked to insure that the AHUs are pulling insufficient volumes of fresh air.

All remaining IAQ parameters tested were within the acceptable ranges.

6.0 Limitations and Conditions:

This report has been completed based on visual and physical observations made and information available at the time of the site visits, as well as an interview with the Owner's representatives. This report is intended to be used as a summary of available information on existing conditions with conclusions based on a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, state and federal protocols, and within the scope and budget established by the client. Any additional data obtained by further review must be reviewed by UEC and the conclusions presented herein may be modified accordingly.

This report and attachments, prepared for the exclusive use of Owner for use in an environmental evaluation of the subject site, are an integral part of the inspections and opinions should not be formulated without reading the report in its entirety. No part of this report may be altered, used, copied or relied upon without prior written permission from UEC, except that this report may be conveyed in its entirety to parties associated with Owner for this subject study.

REFERENCES:

1. ACGIH, Threshold Limit values and Biological Exposure Indices, 2007.
2. AIHA, 2700 Prospect Ave., Fairfax, VA. IAQ Paper #130 June 23, 1999.
4. American Society of Heating, Refrigeration and Air-conditioning Engineers' ANSI/ASHRAE 55-1992 "**Thermal Environmental Conditions for Human Occupancy.**"
5. BOCA, 1993. The BOCA National Mechanical Code 1993 8th edition Building Officials and Code Administrators International., Inc., Country Club Hills, Ill
6. SBBRS, 1997. Mechanical Ventilation, State Board of Building Regulations and Standards Code of Massachusetts Regulations 780 CMR 1209.0