



# INDOOR AIR QUALITY ASSESSMENT DURING CONSTRUCTION

Phase 2 – May 2022

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## **Arlington High School 869 Massachusetts Ave, Arlington, MA**

**Prepared For:**

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**Job #: 7277-03**

**May 4, 2022**

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## APPENDIX A: RESULTS OF REAL-TIME AIR MONITORING

## 1. INTRODUCTION

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Cashins & Associates, Inc. was retained by Consigli Construction to provide professional industrial hygiene consulting services. Our scope of work consisted of measuring various basic indoor air quality parameters during renovation activities in certain locations throughout the Arlington High School located at 869 Massachusetts Ave. in Arlington, Massachusetts.

A representative from Cashins performed an indoor air quality assessment of the Downs Building, Fusco Building, and Buildings D and E on May 4, 2022.

At the time of these sampling days, construction activities were occurring only in the stage / auditorium area. This area had several locked construction doors with signage. Sampling was conducted in the occupied non-work areas throughout the school.

## 2. METHODOLOGIES

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A Particles Plus™ part per billion photoionization detector (PID) was utilized to screen for the presence of total volatile organic compounds (TVOCs). The PID is a screening tool that provides information as to TVOC loading in the space. The instrument does not provide information pertaining to which specific compounds are present in the air.

Dust concentrations were also measured using a Thermo Environmental Personal Data Ram dust meter. This real-time aerosol monitor measures dust between 0.3 microns and 10 microns.

Carbon monoxide was measured using a BW Gas Alert Max XTII™ four gas meter, as well as a TSI Q-trak® indoor air quality meter.

## 3. FINDINGS

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### 3.1 Findings: Basic IAQ Parameters

We have listed in Table 1 the results of the real-time air sampling. This table can be found in Appendix A to this report.

## IAQ Criteria

No specific IAQ Plan has been developed for this site; thus, no official upper guideline limits have been established. However, it is typical to use the following values as upper limits in both the occupied and work zone areas:

Contaminant	Inside Construction Area	Occupied Area
Dust	1 mg/m <sup>3</sup>	150 µg/m <sup>3</sup>
Volatile Organic Compounds	10 ppm (10,000 ppb)	1 ppm (1,000 ppb)
Carbon Monoxide	15 ppm	9 ppm

## 4. DISCUSSION

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Concentrations of carbon monoxide, VOCs, and Dust were found to be below the upper limits throughout the occupied areas of the school.

No construction activities in the school contributed to high dust concentrations, in fact the readings taken outside construction containments were all relatively low.

Attached, please find tables detailing IAQ measurements obtained during the assessment.

This assessment shows only a snapshot of the average school day. Indoor air quality should continue to be monitored on a regular basis throughout this project in order to ensure that concentrations of various airborne contaminants remain at acceptable levels.

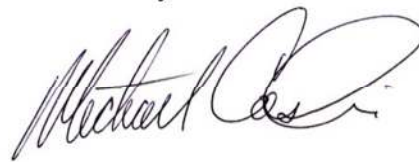
Please call if you have any questions or if we can be of further assistance.

Sincerely,  
Cashins & Associates, Inc.



Bret D. Bradley  
IH & Building Sciences Consultant

Reviewed by:



Michael R. Cashins, CIH  
Director of Consulting Services

## **APPENDIX A**

### **RESULTS OF REAL-TIME AIR SAMPLING**

**Table 1: Real-time Air Quality Readings, Round 1**

<i>Location</i>	<i>CO (ppm)</i>	<i>TVOC (ppb)</i>	<i>Dust (<math>\mu\text{g}/\text{m}^3</math>)</i>
<b>Downs Building</b>			
@Main Office Entrance	<1	10	36
@ Stairwell M next to link mechanical room	<1	15	22
2 <sup>nd</sup> Floor stairwell barrier	<1	4	25
Barrier outside class 229	<1	1	24
@ Classroom 231	<1	1	17
Stairwell N 2 <sup>nd</sup> floor	<1	353	24
3 <sup>rd</sup> Floor Fusco connector	<1	217	25
@ Classroom 339	<1	120	24
@ Classroom 331	<1	2	14
Stair M barrier 3 <sup>rd</sup> floor	<1	2	15
Stairwell M barrier 4 <sup>th</sup> floor	<1	1	14
Outside 430A	<1	71	20
Classroom 431	<1	113	24
Stairwell N 4 <sup>th</sup> floor	<1	200	21
@ 1 <sup>st</sup> floor F109 Locker Room	<1	212	27
@ 1 <sup>st</sup> floor Coaches Office	<1	2	24
1 <sup>st</sup> floor Hall @School Counselor	<1	180	21
Hallway outside Red Gym	<1	3	25
1 <sup>st</sup> Floor Downs Building Fusco Connector	<1	0	24
<b>Fusco Building</b>			
1 <sup>st</sup> Floor Elevator Barrier	<1	0	43
2 <sup>nd</sup> Floor outside elevator	<1	0	40
2 <sup>nd</sup> Floor Outside Mechanical A212	<1	0	33
2 <sup>nd</sup> Floor outside room 002	<1	1	27
Center of Interior Courtyard	<1	0	22
Center of Blue gym Café	<1	2	34
3 <sup>rd</sup> Floor Building connector	<1	0	25
3 <sup>rd</sup> Floor Outside elevator	<1	0	28

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<i>Location</i>	<i>CO (ppm)</i>	<i>TVOC (ppb)</i>	<i>Dust (<math>\mu\text{g}/\text{m}^3</math>)</i>
@3 <sup>rd</sup> Floor media center	<1	0	49
Fusco Building D temporary connector	<1	0	36
@ Staff office A331	<1	0	32
@ Learning center 306	<1	0	22
Hallway outside 407	<1	0	22
@ Classroom 403	<1	2	23
@ Classroom 400 containment	<1	1	42
@ Classroom 501	<1	0	23
@ Classroom 505	<1	0	65
@ Classroom 509	<1	0	29
Outside 6 <sup>th</sup> floor committee room	<1	0	26
Outside human resources	<1	0	24
Outside office A601	<1	0	26
<b>Building D Floor 5</b>			
Locker well outside Stair 2	<1	2	36
House Dean 532	<1	0	26
@Classroom 520	<1	0	25
@Office 524	<1	0	30
Classroom 525	<1	0	35
Classroom 526	<1	0	28
Classroom 528	<1	0	26
Classroom 530	<1	0	39
<b>Building D Floor 4</b>			
Locker well outside Stair 2	<1	1	65
Classroom 435	<1	0	58
Classroom 419	<1	0	36
Classroom 433	<1	0	31
Classroom 423	<1	0	15
Classroom 425	<1	0	14
Classroom 426	<1	0	20

**Table 1: Real-time Air Quality Readings, Round 1**

<i>Location</i>	<i>CO (ppm)</i>	<i>TVOC (ppb)</i>	<i>Dust (<math>\mu\text{g}/\text{m}^3</math>)</i>
Classroom 428	<1	0	14
Classroom 430	<1	0	21
<b>Building D Floor 3</b>			
Locker well outside Stair 2	<1	1	34
Classroom 319	<1	0	16
House Dean 333	<1	0	23
Teacher room 322	<1	0	19
Classroom 325	<1	0	19
Classroom 326	<1	0	11
Classroom 328	<1	0	32
Classroom 331	<1	0	14
<b>Building E Floor 3</b>			
Corridor between Building D & E	<1	0	23
Practice room 338	<1	0	30
Office 342	<1	0	29
@Production studio 345A	<1	0	35
Chorus room 344	<1	0	35
<b>Building E Floor 2</b>			
Band Hallway Outside Stage	<1	2	19
Classroom 239	<1	0	31
Fusco Building D connector	<1	1	65
<b>Building D Floor 2</b>			
Main entrance lobby outside Auditorium	<1	0	36
Classroom 219	<1	0	32
Light well outside room 220	<1	0	45
Classroom 226	<1	0	35
Classroom 227 wood workshop	<1	0	49
Conference room 232B	<1	0	35
Corridor outside Admin offices	<1	0	32
Main office reception	<1	0	35