March 11, 2013

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Via email: JSgarlata@gesonline.com

Re: 100 Lake Ave., Rochester, NY 14608
Construction of sub-slab depressurization system

CONSTRUCTION COMPLETION REPORT

1. OVERVIEW

This document presents a construction report, performance evaluation, O&M advice and certification of effectiveness for the sub-slab depressurization (SSD) system installed by *Mitigation Tech* at 100 Lake Ave., Rochester, NY 14608 as commissioned February 20, 2013.

The subject area is the area in the entire footprint of the building occupied by The Brotherhood Motorcycle Club, excluding the elevator shaft and the annex storage building. Based on an analysis of sub-slab air communication data and a general building assessment, a manifolded SSD System was installed using principles and equipment typically used for radon mitigation in buildings. The primary objective of implementing this preemptive measure was to mitigate potential intrusion of vapors related to former manufacturing operations that could migrate into occupied space from beneath the slab. This would be achieved by maintaining a negative pressure of at least .004 water column inches (wci) below the slab relative to the air pressure above the slab. All work is in compliance with the NYS DOH document, "Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006".

2. BUILDING ASSESSMENT

Prior to construction, *Mitigation Tech* conducted a site visit for the purpose of building assessment, collection of sub-slab air communication data and system design. Significant findings:

- Most efficient design was to construct two separate multi-point SSD systems with externally located vacuum fans

- Sub-slab air flow testing indicated moderate to good sub-slab porosity in the north extension and poor to fair porosity in the main basement. Suction cavity configuration was determined in part based on comparable applications and created areas of influence.

- Certain slab defects would require sealing.

Work began with an analysis of appropriate locations for fan, suction cavities and other SSD system components. Both for physical protection and minimum impact on active use areas, riser pipes were installed on existing columns or on permanent walls; horizontal pipe was installed as close to the ceiling as possible. Work was coordinated with tenant to minimize disturbance of work areas, relocate obstacles and control dust. Vacuum and air flow measurements were performed continuously during construction to ensure integrity of design. Various fans were evaluated in place and in combination to determine the most effective configuration. At commissioning, all components inspected for condition and proper operation. Premises left in clean condition.

3. SUB-SLAB DEPRESSURIZATION SYSTEM GENERAL DESCRIPTION

3.1. Introduction. The system consists of (2) SSD systems operating independently. Each individual system consists of a sidewall mounted fan and several vapor extraction points. The systems were constructed using principles and equipment typically used for radon mitigation in buildings as detailed in the United States Environmental Protection Agency (EPA) EPA 402-K-03-007 (May 2006), and the final NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). The SSD systems were installed as a permanent, integral addition to the structure. The key components of the SSD system are described below.

3.2. Suction Points. The location of each suction point (vapor extraction point) is shown on the attachment to this document titled "System Layout and Extraction Point Details". Each suction point consists of a 7" core boring into the slab to a depth of 3' or until rock was encountered, through which appx. 2 cubic feet of sub-slab material has been removed. Perforated pipe extending to the core base has been backfilled with #2 washed stone. Mechanically suspended Schedule 40 3" PVC pipe has been inserted into the boring and sealed with urethane sealant. There are a total of (12) suction cavities for the main basement and (2) for the north extension.

3.3. Riser Piping. The riser piping consists of 3" schedule 40 PVC pipe that follows a route from the extraction point to a manifold then to an exterior mounted vacuum fan, through a sidewall penetration. Weatherproof flashing or sealant has been applied to all penetrations. Vent pipes were installed at a pitch that ensures that any rainwater or condensation within the pipes drains downward into the ground beneath the slab. Piping is independently supported, and not supported from existing building mechanical systems. Piping is labeled at each level as "Sub-Slab Vent" with column designation.

3.4. Exhaust Fans. Exhaust fans consist of (1) RADONAWAY RP-265 centrifugal fan on the main system and (1) RADONAWAY RP-145 for the north system. Fans consume approximately 150w and 80w of electricity respectively, and were field selected for efficiency and minimum maintenance. Fans have an adjacent disconnect switch connected to a circuit in the vicinity. Fans are mounted with rubber Fernco couplings, for simplified replacement.

3.5. Instrumentation and Control. There is no centralized instrumentation or control for the SSD System. Individual fans can be switched either from the fan positioned disconnect or at the breaker. Each exhaust fan system is equipped with a vacuum indicator mounted in a visible location on or near the riser pipe. The indicator consists of an oil filled U-tube style manometer. The indicator is inspected by observing the level of colored fluid. This indicator is designed primarily to give a simple visual check that vacuum is present in the riser pipe, specifically by

observation that the fluid levels on each side f the indicator are not even. Indicators are marked at levels observed on February 20, 2013.

3.7. Sealing measures. Polyurethane sealants and mechanical barriers have been applied to floor cracks, slab penetrations and other openings to enhance the barriers between sub-slab and ambient air and improve the efficiency of the SSD System. Sealant has been applied primarily in the vicinity of suction points and at cracks in concrete bases of columns.

3.6. Monitoring Points. There are 12 sub-slab vacuum test points, As shown on the included drawing "Influent readings".. These consist of ¾" drill points through the slab into which a digital micromanometer probe can be inserted. They are semi-permanently closed with closed cell backer rod and polyurethane sealant. These were established to aid in original system design and confirmatory testing. The primary future use is in annual recertification of system effectiveness.

3.7. PERFORMANCE EVALUATION

(Measurement date – February 20, 2013) In order to verify system effectiveness and as a performance evaluation, test points were established at various distances from the suction cavities suitable to determine that the sub-slab of the entire subject area was being depressurized at least to the objective, as shown in the following table: (locations per schematic)

Test Point	**Vacuum in negative wci**
1	.020
2	.027
3	.293
4	.314
5	.021
6	.148
7	.077
8	.025
9	.032
10	.294
11	.081
12	.044

4. SUB-SLAB DEPRESSURIZATION SYSTEM OPERATION

4.1. All fans should be kept in continuous operation. New York State Soil Vapor Intrusion Guidance (2006) specifies that operation, maintenance and monitoring of the SSD system should be included as part of site management. Until subsurface remediation efforts eventually address VOCs in soil and/or groundwater to acceptable levels (i.e. SSD operation no longer required) operation of the SSD system should continue. At that point, the vapor mitigation system may be shut down and/or removed and O&M requirements would cease.

4.2. Reset. Fans restart automatically in event of power loss.

4.3. In the event of unusual fan noise, failure to start, physical damage, or repeated circuit breaker trip, turn fan off and call for service. MITIGATION TECH –585- 637-7430

4.4. Regularly inspect fan gauge to verify that value, indicated by a mark on the gauge, has not changed significantly from the position of the mark. Gauge is inspected by observing the level of colored fluid or, in the case of a dial gauge, the position of the indicator needle.

4.5. Normal system operation requires unchanged structural conditions. Report any changes in structure, HVAC systems, slab conditions, etc., so that the change can be evaluated for impact on the SSD System. For service, call MITIGATION TECH at 637-7430
4.6. Ensure that a periodic inspection is performed

5. SUB-SLAB DEPRESSURIZATION SYSTEM PERFORMANCE MONITORING

5.1. Monthly Monitoring

5.1.1. Inspect each fan vacuum indicator to verify that value, indicated by a mark on the gauge, has not changed significantly from the position of the mark. Gauge is inspected by observing the level of colored fluid.

5.1.2. Record the observed measurement for each fan vacuum indicator on form labeled "SSD System Vacuum Gauge Record". Store all forms in the facility maintenance office.

5.1.3. Inspect visible components of SSD system in vicinity of gauge for degraded condition.

5.1.4. Investigate and report any gauge reading that deviates significantly from its historical average, or any degraded condition of visible components. For reporting, call MITIGATION TECH at 585-637-7430.

5.2. Annual Inspection

5.2.1. Conduct a visual inspection of the complete System (e.g., vent fans, piping, warning devices, labeling)

5.2.2. Inspect all components for condition and proper operation;

5.2.3. Identify and repair any leaks in accordance with Sections 4.3.1(a) and 4.3.4(a) of the NYS DOH VI Guidance (i.e.; with the systems running, use smoke sticks to check for leaks through concrete cracks, floor joints and at the suction points; any leaks will be resealed until smoke is no longer observed flowing through the opening).

5.2.4. Inspect the exhaust or discharge point of each exhaust fan to verify that no air intakes have been located within 10 feet

5.2.5. Conduct pressure field extension testing (to ensure that the system is maintaining a vacuum beneath the entire slab). Perform at least one differential pressure reading for each building slab section enclosed by a separate footer

5.2.6. Interview appropriate building occupants seeking comments and observations regarding the operation of the System

5.2.7. Check to see that the circuit breakers controlling the circuits on which the soil vapor vent fans operate are labeled "Soil Vapor System"

5.3. Annual Certification of Effectiveness

5.3.1. Upon completion of the tasks outlined in section 5.2 above, the installing contractors shall submit a Certification of Effectiveness document, stating that the SSD system continues to perform to the purpose for which it was designed.

6. SUB-SLAB DEPRESSURIZATION SYSTEM MAINTENANCE

6.1. Routine Maintenance

6.1.1. Perform procedures as specified in sections 5.2 and 5.3

6.1.2. There are no routine component replacement procedures; Replace components upon findings of damage or failure

6.1.3. All routine and non-routine maintenance activities should be documented and reported to the agencies, as appropriate

6.2. Non-Routine Maintenance

6.2.1. Non-routine maintenance may also be appropriate during the operation of the mitigation system. Examples of such situations include the following:

6.2.2. It is determined through inspection or notification by others that the warning device indicates the mitigation system is not operating properly

6.2.3. the mitigation system becomes damaged

6.2.4. the building has undergone renovations that may reduce the effectiveness of the mitigation system.

6.2.5. Activities conducted during non-routine maintenance visits will vary depending upon the reason for the visit. In general, building-related activities may include examining the building for structural or HVAC system changes, or other changes that may affect the performance of the depressurization system (e.g., new combustion appliances, deterioration of the concrete slab, or other significant changes). Depressurization system-related activities may include examining the operation of the warning device or indicator and the vent fan, or measurement of the extent of sub-slab depressurization. Repairs or adjustments should be made to the system as appropriate.

Certification

I hereby certify that the SSD System at this location is installed properly and is effective in achieving its above stated purpose.

Nicholas E. Mouganis EPA listing # 15415-I; NEHA ID# 100722

RADON FAN SPECIFICATIONS

RadonAway™
The world's leading radon fan manufacturer

RP Series

Radon Mitigation Fan

All RadonAway™ fans are specifically designed for radon mitigation. RP Series Fans provide superb performance, run ultra-quiet and are attractive. They are ideal for most sub-slab radon mitigation systems.

Features

- Energy efficient
- Ultra-quiet operation
- Meets all electrical code requirements
- Water-hardened motorized impeller
- Seams sealed to inhibit radon leakage (RP140 & RP145 double snap sealed)
- RP140 and RP260 Energy Star® Rated
- ETL Listed - for indoor or outdoor use
- Thermally protected motor
- Rated for commercial and residential use

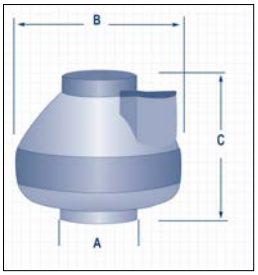
MODEL	P/N	FAN DUCT DIAMETER	WATTS	MAX. PRESSURE"WC	TYPICAL CFM vs. STATIC PRESSURE WC				
					0"	.5"	1.0"	1.5"	2.0"
RP140*	23029-1	4"	15-21	0.8	135	70	-	-	-
RP145	23030-1	4"	41-72	2.1	166	126	82	41	3
RP260*	23032-1	6"	50-75	1.6	272	176	89	13	-
RP265	23033-1	6"	91-129	2.3	334	247	176	116	52
RP380*	28208	8"	95-152	2.3	497	353	220	130	38

*Energy Star® Rated

Made in USA with US and imported parts

ETL Listed

All RadonAway inline radon fans are covered by our 5-year, hassle-free warranty



Model	A	B	C
RP140	4.5"	9.7"	8.5"
RP145	4.5"	9.7"	8.5"
RP260	6"	11.75"	8.6"
RP265	6"	11.75"	8.6"
RP380	8"	13.41"	10.53"

For Further Information Contact

9/12
P/N 02008