

Vapor Intrusion & Mitigation

Passaic County Board of Realtors Presentation

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Presentation Topics

- ❖ **Introductions**
- ❖ **What is Vapor Intrusion?**
- ❖ **How is Vapor Intrusion Mitigated?**
- ❖ **Vapor Mitigation System - Design/Construct/Maintain Process**
- ❖ **How do Vapor Intrusion Mitigation Systems compare to Radon Systems?**

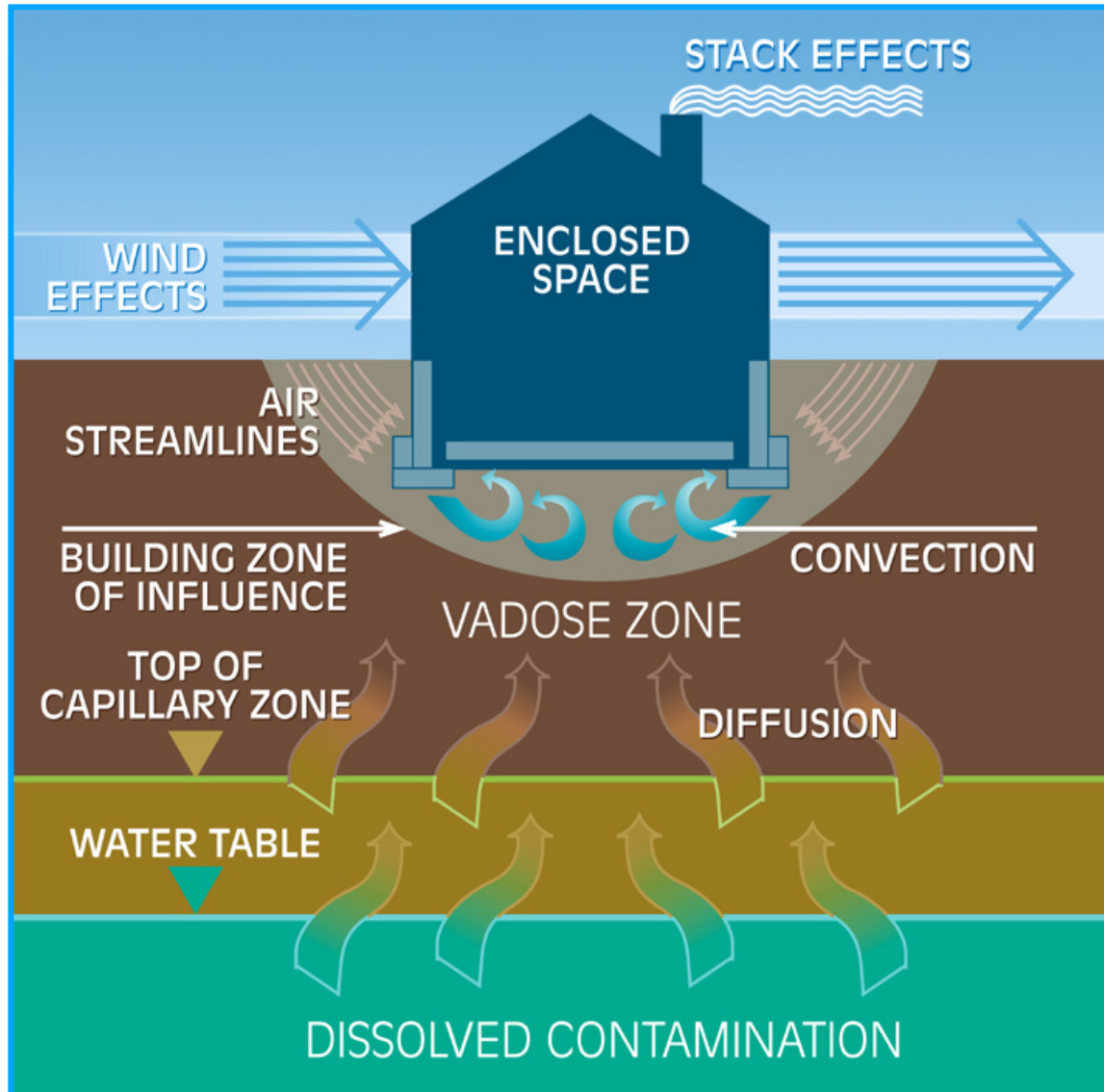
Introductions

- ❖ **65 Years of Employee Ownership**
- ❖ **Multi-faceted Engineering/Construction Firm**
- ❖ **Leading National Firm in Vapor Intrusion**
 - Involved in nation's largest vapor intrusion site (NY)
 - 80 currently active vapor intrusion projects
 - Over 1,200 mitigation systems installed to date
 - 65 engineers, scientists, technicians & constructors full-time in vapor intrusion work



Vaprotect[®]
360° VI RESOURCE

What is Vapor Intrusion?



Vapor Intrusion Mitigation

❖ Why is it Important?

- Remove pathway
- Protective measure even if vapor intrusion is not currently occurring

❖ How is it Accomplished?

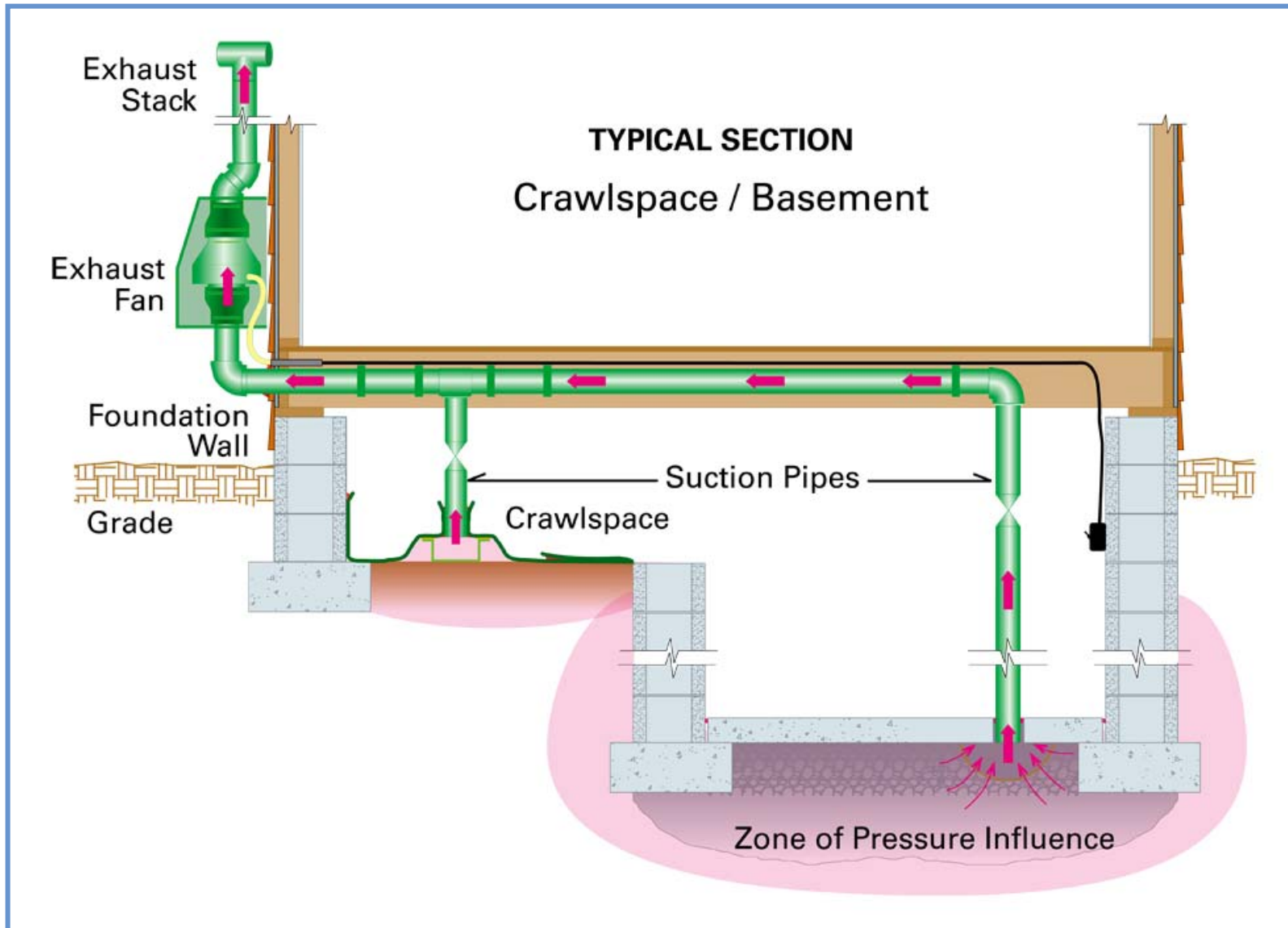
- Seal off openings
- Intercept vapors under slab (depressurization)

❖ Does it Clean the Indoor Air?

- No, only prevents soil gas from entering
- Indoor household products still exist



Typical Depressurization Mitigation System



Vapor Mitigation System – Design/Construct/Maintain Process

- ❖ **Design Testing** (coordinate schedule with property owner)
 - Drill holes in slab, test with vacuum
 - Determine number and location of suction points, pipes, fan & exhaust
- ❖ **Prepare Engineering Design Drawing** (property owner signature)
- ❖ **Obtain Building Permit** (coordinate with local building department)
- ❖ **Construct/Commission** (coordinate schedule with property owner)
 - Test depressurization
 - Record system pressures
- ❖ **Electrical Inspection** (coordinate with local inspector)
- ❖ **Quarterly/Annual Inspections** (coordinate schedule with property owner)

Vapor Intrusion Compared to Radon

❖ Similarities

- Enters building same way
- Mitigation techniques

❖ Differences

- Radon mitigation systems are typically commodities (competitively bid)
- Vapor mitigation systems are engineered to each building (design testing)



Mitigation System Comparisons*

Item	"Typical" Radon System	Vapor Intrusion System
Performance Criteria	Reduce indoor air levels	Depressurization across slab
Design Approach	Guidance document driven	Developed from diagnostic testing
System Components	One suction point per 1,500 ft ²	# Points defined by engineering design to achieve performance criteria
	Often 1 fan per structure	# Fans defined by engineering design to achieve performance criteria
Area of Depressurization	Unknown; pressure testing not usually completed	Across area of slab; verified through pressure testing
Treatment of Slab	Seal major cracks	Addressed during design (e.g., sealing)
Treatment of Walls	Typically none	Addressed during design (e.g., sealing)

* Based on O'Brien & Gere experience

Mitigation System Comparisons*

Item	"Typical" Radon System	Vapor Intrusion System
Inaccessible Crawlspace	Often not considered	Addressed during design (e.g. venting)
Treatment of Dirt Floors	Often not considered	Addressed during design (e.g., liner)
Commissioning Testing	Often not completed	Inspection of installation to meet protocol requirements
		Verification of performance criteria (communication testing)
		Leak testing of floors & pipes
Operation & Maintenance	Repairs as necessary	Routine inspections
		Repairs as necessary
		Verification of performance criteria

* Based on O'Brien & Gere experience

Additional Information

- ❖ **www.pomptonlakesworks.com**
 - Copy of today's presentation available on this website
 - Links to other web pages (e.g., regulatory agencies)

- ❖ **Pompton Lakes Works Remediation Project Information Ctr**
223 Wanaque Avenue (lower floor), Pompton Lakes, NJ
10:00 am ~ 6:00 pm Monday thru Friday

THANK YOU

