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Vapor Intrusion: Pathways to Liability

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Agenda

- Background on Vapor Intrusion
- Regulatory Schemes and Guidance
- Due Diligence
- CERCLA
- RCRA
- Common Law
- State Claims
- Prior Site Closures
- Managing potential liability

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What is Vapor Intrusion?

- Vapor intrusion is an indoor air quality condition that occurs when volatizing chemicals migrate from polluted soil and/or groundwater in the form of vapors into overlying buildings.
  - Requirement: Subsurface contamination (soil and/or groundwater)
  - Requirement: Pathway to building/structure (permeable soils, cracks/fractures, utility lines, sumps)
- For purposes of ASTM Standards – not from naturally occurring substances.
- Can create a risk for building occupants
  - Health risks
  - Safety risks

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What is Vapor Intrusion?

- Can occur at a variety of properties:
  - Industrial properties
  - Dry cleaners
  - Gas stations
  - Landfills
- Common COCs:
  - Chlorinated solvents: TCE and PCE
  - Petroleum hydrocarbons: benzene, ethyllbenzene, toluene and xylene

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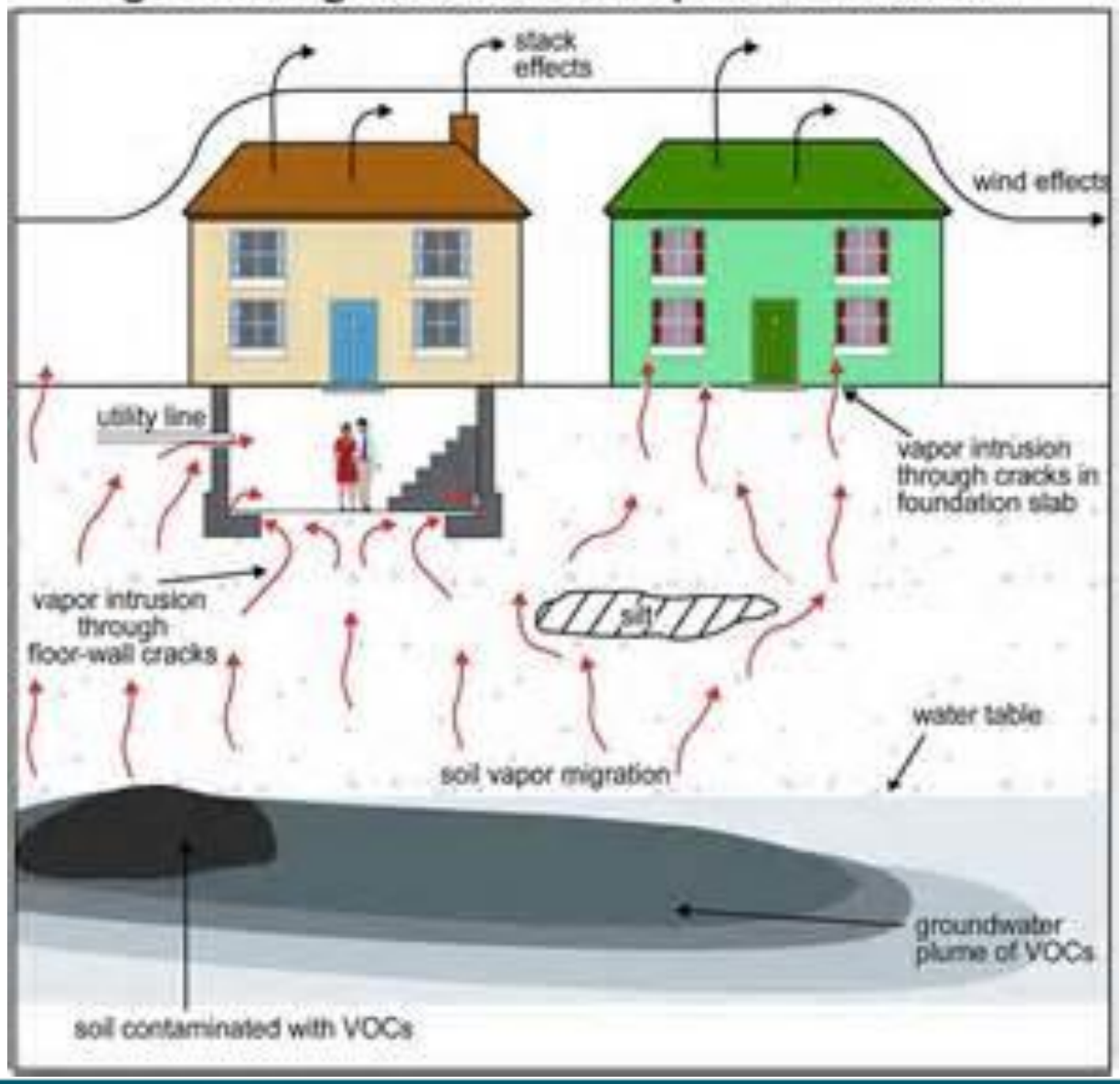
How does it work?

- Pressure-driven flow
  - **Building underpressurization**
    - Stack Effect
    - Wind loading
    - Ventilation systems
    - Barometric pressure
  - **Diffusion through cracks**

Figure 1. Migration of Soil Vapors to Indoor Air



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Factors Affecting VI

- Source Characteristics
- Soil or groundwater
- Concentration and location
- Biodegradability
- Soil Characteristics
- Air permeability, moisture content, surface cover
- Building Construction
- Foundation type (basement, slab-on-grade, etc.)
- Foundation openings (crack size)
- HVAC system, air exchange rate
- Depressurization

Why Worry About Vapor Intrusion?

- Considerable amount of time spent indoors
  - Average person drinks 2 liters of water per day
  - BUT, the average person inhales 20,000 liters of air per day!
- Some science suggests that inhalation is a sensitive pathway for human exposure
- No practical alternatives
- Complicated → unknowns → difficulty assessing risk
- Vapors can accumulate in dwellings or occupied buildings to levels that may pose short-term or long-term safety hazards, and/or health effects
- Because of this health concern, VI can pose an economic risk to development projects and long-term liability

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Why Worry about Vapor Intrusion? Potential Impacts

- Suitable property usage
- Abatement costs
- Tort liability
- Property value reductions
- State and federal requirements

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Vapor Intrusion Regulations in Flux

- Competing state and federal vapor intrusion rules
  - Over 30 states with individual state-specific vapor intrusion rules
  - Draft /Final EPA guidance for public comment in April 2013
    - *OSWER Final Guidance for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Sources to Indoor Air*
    - *Guidance For Addressing Petroleum Vapor Intrusion At Leaking Underground Storage Tank Sites* (2013 Petroleum VI Guidance).
- Science constantly evolving
- Pace of legal regulation is slow
- Complicated subject matter difficult to neatly address in regulations

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Vapor Intrusion Regulations in Flux

- Wisconsin
  - Wisconsin DNR has a number of guidance documents on vapor intrusion, including sub-slab vapor sampling procedures. See RR-986 (July, 2014).
  - WDNR case closure requirements under Spill Statute: Case Closure form specifically requires responsible party to assess for vapor migration pathway
  - Depending on vapor intrusion risk, case closure may require a vapor mitigation system or other specific vapor protection.
  - Both the DNR and the Dept. of Health Services/Division of Public Health (DHS/DPH) are responsible for vapor intrusion. DNR's RR Program oversees investigation and cleanup of all contaminant pathways, including vapor intrusion. DHS/DPS – and local health departments – responsible to protect human health, residential & non-residential sites.

Due Diligence - ASTM E1527-13

- ASTM E1527-13 All Appropriate Inquiries ("AAI") standard – one component necessary to potential rely on certain defenses to CERCLA liability, including the bona fide purchaser defense
- Vapor is now a recognized pathway in ASTM E1527-13 – Revised definition of "migrate" refers to movement of hazardous substances or petroleum in any form including "vapor in the subsurface"
- Consideration of vapor is now explicitly required (use of ASTM E2600-10 is not mandated)
- However, industry has anticipated the change for several years and many consultants were already reviewing vapor intrusion.
- Practical Examples
  - Retail/commercial; schools; residential

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Environmental Liability Framework

- **Generally: Environmental liability is strict, joint and several, and runs with the land.**
- Many people don't realize that…
  - … a purchaser/lessee/operator of contaminated property can be held liable, *even though they are not responsible for contaminating the property at issue.*

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Types of Environmental Liabilities - CERCLA

- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund)
  - Federal statute that applies to any release of hazardous substances at a facility.
  - Liability can be asserted against Potentially Responsible Parties (PRPs):
    - The current owner or operator of a facility;
    - A past owner or operator of a facility at the time the hazardous substances were disposed of;
    - The person who arranged for hazardous substance disposal; and
    - The transporter of hazardous substances to the facility.

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Types of Environmental Liabilities - CERCLA

- CERCLA Goals:
  - Effectuate timely cleanup
  - Allocate responsibility for clean-up costs
- Joint and Several liability
- Damages – Recover of costs of response
  - Typically allocated between PRPs
- Injunctive Relief
  - Not available for private parties
  - Available to USEPA under Section 106 Order
- Attorneys' fees – generally not recoverable

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Types of Environmental Liabilities – CERCLA Citizen Suits

- CERCLA Citizen Suit Elements
  - Site is CERCLA facility
  - Defendant is PRP
  - There was a release that caused plaintiff to incur response costs consistent with NCP
- CERCLA Citizen Suit Damages
  - Response costs and attorneys fees
- Statute of Limitations
  - 3 years (removal actions)
  - 6 years (remedial actions)

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Types of Environmental Liabilities - CERCLA

- Statutory Defenses to CERCLA
  - **Innocent Landowner**. Must prove that contamination was caused by 3rd party with whom purchaser has no contractual relationship and "all appropriate inquiry" was performed. (Cannot have prior knowledge.)
  - **Bona Fide Prospective Purchaser.** Avoids CERCLA Liability if all appropriate inquiry performed, disposal onsite took place before date of purchase and appropriate care exercised with respect to any discovered contaminants. (Prior knowledge okay).
  - **Contiguous Property Owner.** Avoids CERCLA liability for neighbors whose property is contaminated by the offending property.

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Types of Environmental Liabilities - CERCLA

- Statutory defenses are great…
- But consider…
  - What happens if you buy some contaminated property and can establish a defense… but the original "polluter" is long gone or is judgment proof…
- YOU STILL OWN CONTAMINATED PROPERTY!

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Types of Environmental Liabilities – RCRA

- The Resource Conservation and Recovery Act (RCRA)
  - "Cradle to Grave" statute designed to govern the generation, identification, storage and disposal of hazardous waste.
  - No private cause of action for a cost recovery claim under the statute, but citizen suits may be asserted against any party for any release of hazardous wastes that current pose endangerment to health and environment.
- Remedies under RCRA:
  - Injunctive relief
  - Attorneys fees
- Jurisdiction – federal court
- Citizen suits – Two Options

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RCRA Citizen Suit – Ongoing RCRA violations

- RCRA § 7002(a)(1)(A): authorizes citizens suits against
  - Any person (including the U.S.)…
  - Who is alleged **to be in violation** of any RCRA requirement (permit, standard, regulation, condition, requirement, prohibition or order)
- Current violations only

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RCRA Citizen Suit – Endangerment

- RCRA § 7002(a)(1)(B): authorizes citizens suits against
  - Any person…
  - Who has contributed or is contributing to past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste …
  - That may present an imminent and substantial endangerment to health or the environment
- Past or present actions if danger is ongoing

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RCRA Citizen Suit - Endangerment

- What is "imminent and substantial endangerment"?
  - Is subsurface contamination or sub-slab sampling above state screening levels sufficient?
  - Or is evidence of migration into a structure at certain levels required?
  - Does the use of property matter in this analysis?
  - Courts differ on what evidence is required
  - Examples:
    - *Leese v. Lockheed Martin*, 2014 WL 3925510 (D.N.J. Aug 12, 2014)
    - *Forest Park National Bank & Trust v. Ditchfield,* 881 F. Supp. 2d 949 (N.D. Ill. Jul. 24, 2012).

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Types of Environmental Liabilities – Common Law

- Common law causes of actions such as public and private nuisance, trespass, strict liability, ultra hazardous activity.
  - Criteria for proving claims are same or less burdensome than criteria for proving CERCLA or RCRA claims and remedies can be more expansive. Often, these are added to CERCLA/RCRA claims in the same complaint.
  - Common law causes of action can sometimes be pre-empted by state or federal law.

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Types of Environmental Liabilities – State Claims

- State “baby Superfund” laws
- Other state environmental laws such as the Wisconsin Hazardous Substance Spill Law, Section 292.11, Wis. Stats.
  - Party in “possession or control” of the hazardous substance that has been discharged into the environment is responsible party
  - Owner is in “possession or control” even if didn’t cause contamination

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Types of Environmental Liabilities – Prior Site Closures

- Impacted sites were previously closed under standards that did not consider vapor intrusion.
- Risk that sites may be reopened to address vapor intrusion.
- Sites may have No Further Action type closure, but anticipated uses need to consider vapor intrusion risk.

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Managing Vapor Intrusion Liability Risks: Step One

- Step One: Due Diligence to find the problem
  - Phase I ESA
  - Vapor Encroachment Assessment
  - Subsurface Investigations
  - Soil gas testing

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Managing Vapor Intrusion Liability Risks: Step Two

- Step Two: Abatement
  - If due diligence efforts identify vapor intrusion problem, then abate.
  - Options:
    - Source removal
    - Use Restrictions
    - Barriers/venting or other technologies

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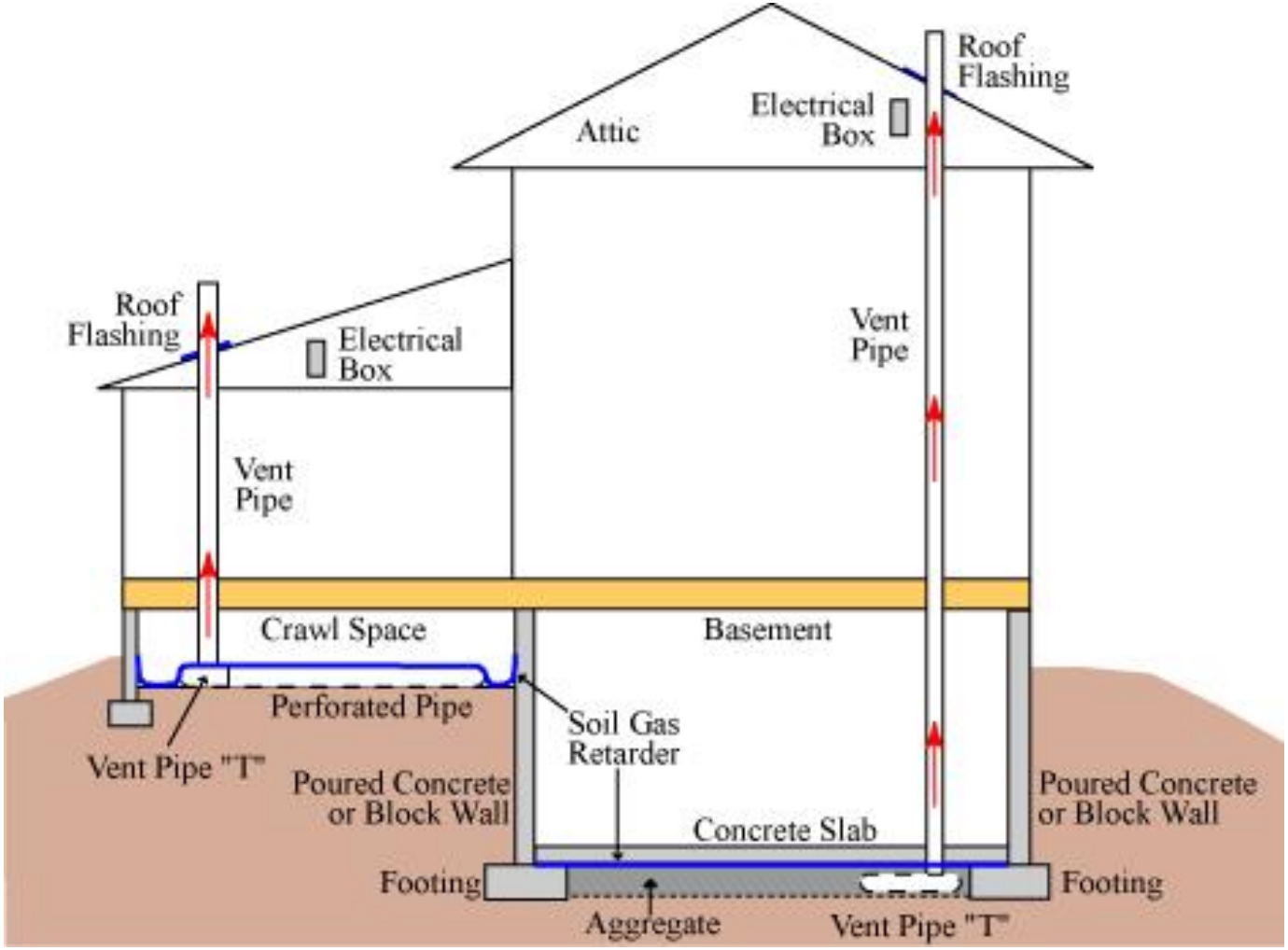
Passive Vapor Intrusion Mitigation Methods:

- Sealing openings involves filling in cracks in the floor slab and gaps around pipes and utility lines found in basement walls. Concrete can be poured over unfinished dirt floors.
- Installing vapor barriers involves placing sheets of “geomembrane” or strong plastic beneath a building to prevent vapor entry. Vapor barriers are best installed during building construction, but can be installed in existing buildings that have crawl spaces.
- Passive venting involves installing a venting layer beneath a building. Wind or the build-up of vapors causes vapors to move through the venting layer toward the sides of the building where it is vented outdoors. A venting layer can be installed prior to building construction as well as within existing buildings. It is usually used with a vapor barrier.

Tier 4 - Mitigation Solutions



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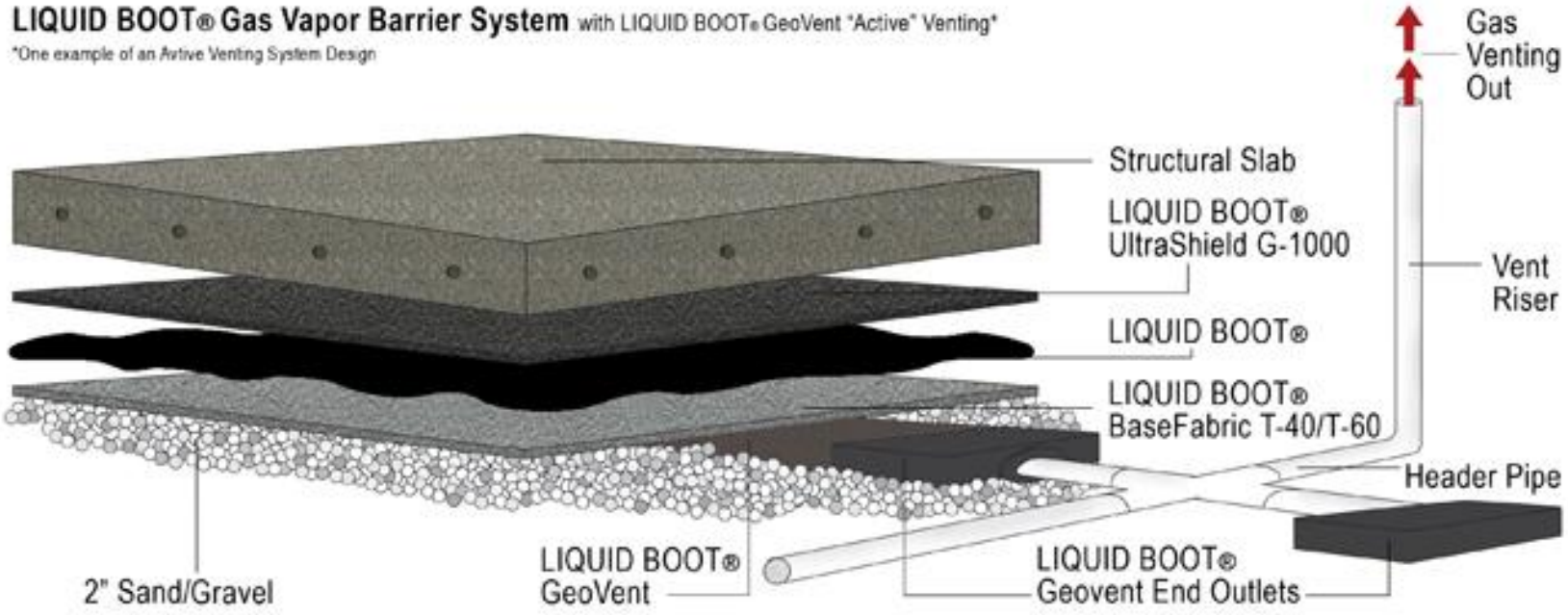
LIQUID BOOT® Gas Vapor Barrier System with LIQUID BOOT® GeoVent "Active" Venting*

*One example of an Active Venting System Design



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Active Vapor Intrusion Mitigation Methods:

- Sub-slab depressurization (SSD) involves connecting a blower (an electric fan) to a small suction pit(s) dug into the slab in order to vent vapors outdoors. (Most common method.)
- Building over-pressurization involves adjusting the building's heating, ventilation, and air-conditioning system to increase the pressure indoors relative to the sub-slab area. This method is typically used for office buildings and other large structures.

*Note that active systems require ongoing operation and maintenance (O&M) costs.

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Managing Vapor Intrusion Liability Risks: Step Three

- Step Two: Allocation of liabilities
  - Contract remedies
    - Indemnities
    - Escrow/holdbacks
    - Pre-closing conditions
  - Environmental insurance for tort claims or future remediation

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Thank you!

Questions?

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