PASSIVE MITIGATION CHECKLIST

Details and types of passive mitigation can be reviewed in the Passive Vapor Intrusion Mitigation Systems Fact Sheet. The primary passive technologies that are the focus of this design checklist are passive barrier systems, epoxy floor coatings, passive sub-slab venting systems, and aerated floors void space systems. These technologies are detailed in their respective technical information sheets. This checklist focuses mainly on design checklist considerations for new construction. Passive mitigation systems are most commonly used within new building construction. Passive mitigation systems can also be implemented within existing buildings. For existing buildings, removal of the floor slab may be necessary to allow installation of some passive mitigation systems. Alternatively, some passive vapor intrusion mitigation systems can be installed above existing floor slabs, such as an aerated floor, epoxy floor coating, or passive vapor barrier membrane.

Passive Mitigation System Design and Documentation

- Will the building of interest have an effective venting layer to install perforated piping within, or equivalent sub-slab ventilation plenum system? ☐Yes ☐No ☐N/A
- Does the system design incorporate an open aerated floor ventilation plenum? ☐Yes ☐No ☐N/A
- Has the aerated floor structure been approved by a structural engineer? ☐Yes ☐No ☐N/A

Selection of System Materials and Methods

- Were total building footprint, foundation type, and under-slab compartments (created by haunches, thickened slab, or elevation changes) considered when selecting under-slab ventilation and aeration materials and methods? ☐Yes ☐No ☐N/A
- Have monitoring points (e.g., embedded through-slab probes, riser airflow monitoring points) been included in the design? ☐Yes ☐No ☐N/A
- Has depth to groundwater been considered (along with management methods as warranted, such as dewatering)? ☐Yes ☐No ☐N/A
- If waterproofing is required, is the selected waterproofing product also designed to mitigate vapor-forming chemicals, and is it included in the design? ☐Yes ☐No ☐N/A

- Have system and monitoring components and locations been included in the system design drawing set? The design (e.g., spacing, number, sizing of piping) of ventilation components should consider the vapor intrusion conceptual site model and the overall building design (e.g., foundation system) to effectively mitigate the affected areas of the building. For example:
  - vent piping diagrams
  - vent stack piping
  - exhaust pipes supported and secured in a permanent manner
  - horizontal piping runs are sloped downward or designed to drain condensation into the ground beneath the slab
  - quality assurance/quality control checks required by manufacturer or recommended for passive barriers (a smoke test, pressure test, or other test may be recommended)

  ☐Yes ☐No ☐N/A

- Was an evaluation conducted to determine whether this mitigation system is a preemptive or precautionary measure (i.e., investigation through multiple lines of evidence did not suggest that a current vapor intrusion pathway is complete)?

  ☐Yes ☐No ☐N/A

- When selecting a passive barrier, were membrane thickness, chemical resistance, adhesion to concrete, transmission rates and/or diffusion coefficients for contaminants of potential concern, puncture resistance, tensile strength, and elongation considered?

  Note: These parameters should be documented in design specifications and plan.

  ☐Yes ☐No ☐N/A

- Has a warranty from the passive barrier manufacturer been included in the design?

  ☐Yes ☐No ☐N/A

Regulatory Confirmation Prior To Installation and Commissioning

- Have all applicable codes and permits been identified and included in the design?

  ☐Yes ☐No ☐N/A

- Is regulatory body (federal/state/local) approval required for the mitigation design prior to construction?

  ☐Yes ☐No ☐N/A

- Does your state, municipality, and/or governing regulatory body require approval of an operations, maintenance, and monitoring (OM&M) plan prior to construction?

  ☐Yes ☐No ☐N/A

- If the goal of the passive mitigation system design is to allow for conversion to an active system, are mechanical and electrical provisions and monitoring points included in the design to activate the system, if needed?

  ☐Yes ☐No ☐N/A

- Have all stakeholders been notified of the planned system and necessary OM&M plan?

  ☐Yes ☐No ☐N/A

System Installation and Commissioning

- Is there a schedule for system installation to be inspected by a competent/experienced person during construction? ☐Yes ☐No ☐N/A
- If a membrane or other coating product was applied, has the membrane been tested in accordance with the manufacturer's requirements (e.g., smoke testing, coupon sampling)? ☐Yes ☐No ☐N/A
- After completion of installation, are there procedures planned to verify that the components are operating in accordance with design criteria? ☐Yes ☐No ☐N/A
- Have post-system installation verification performance metrics (e.g., sub-slab vacuum, sampling) been considered and included in the design plan, if needed? ☐Yes ☐No ☐N/A
- Has continued monitoring been considered during the design phase either in the work plan or as part of an OM&M plan? ☐Yes ☐No ☐N/A

Regulatory Confirmation Post-Installation and Commissioning

- Have system installation and commissioning specifications been included in the design plan? ☐Yes ☐No ☐N/A
- Have stakeholders been notified of the system to be installed and the OM&M plan requirements? ☐Yes ☐No ☐N/A
- Does the system require a deed amendment or land use restriction? ☐Yes ☐No ☐N/A