ENVIRONMENTAL
EXPERTISE
FROM THE
GROUND UP

Passive or Active VI Mitigation – The Success and Demise of Each

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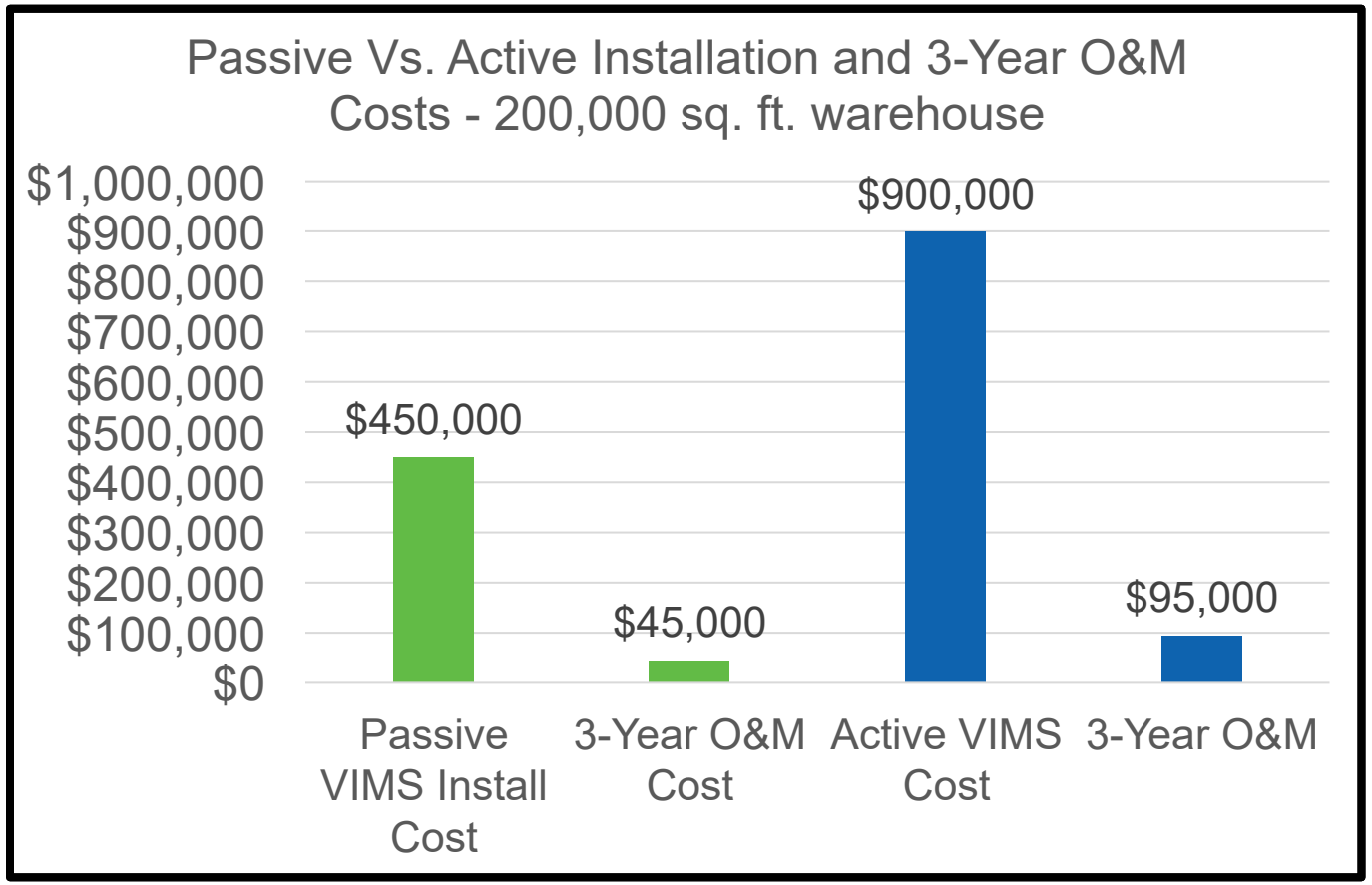
Passive Vapor Intrusion Mitigation

Pros/Success

- Large building VI risk management at long-term reduced costs
- Regulatory approval on passive approach
- Award winning innovative projects possible due to cost savings

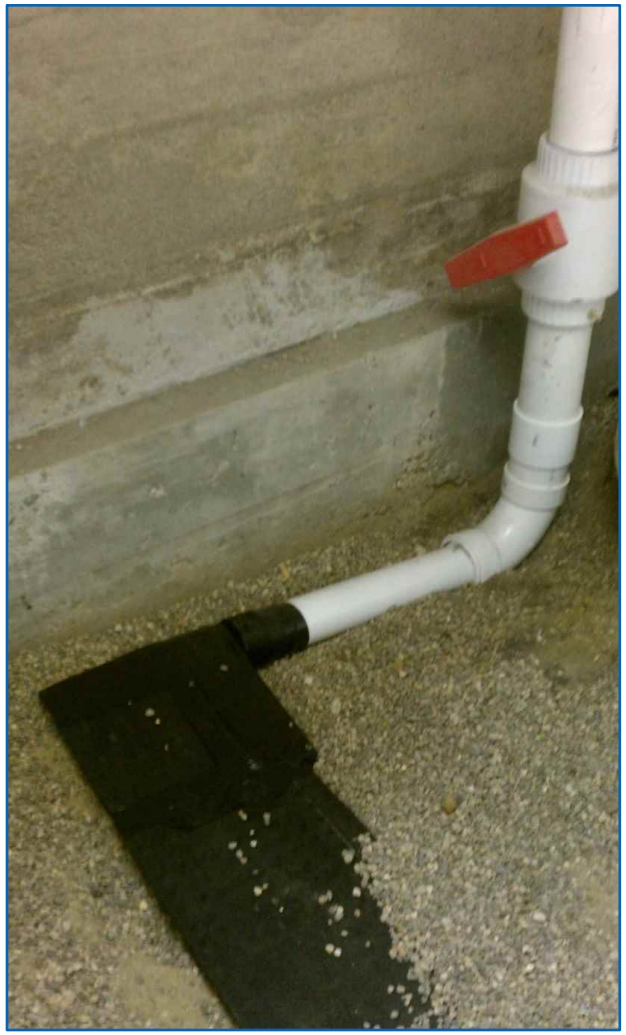
Passive Pro

Cost Comparison Table



Cost savings of half a million dollars!

Passive Pro



The Phoenix Awards
Recognition for Excellence in Brownfield Redevelopment

Award-winning passive site

Passive Vapor Intrusion Mitigation

Cons/Issues

- Lack of venting design(s) for actual conversion to active
- Large costs to retrofit active system after passive system install
- Damaged vapor barrier during construction, added costs to repair
- Improperly installed vapor barrier or inadequate vapor barrier
- Inadequate overall design and oversight for passive installation

Damaged vapor barrier by third party contractors

Passive Cons

Damaged concrete above barrier

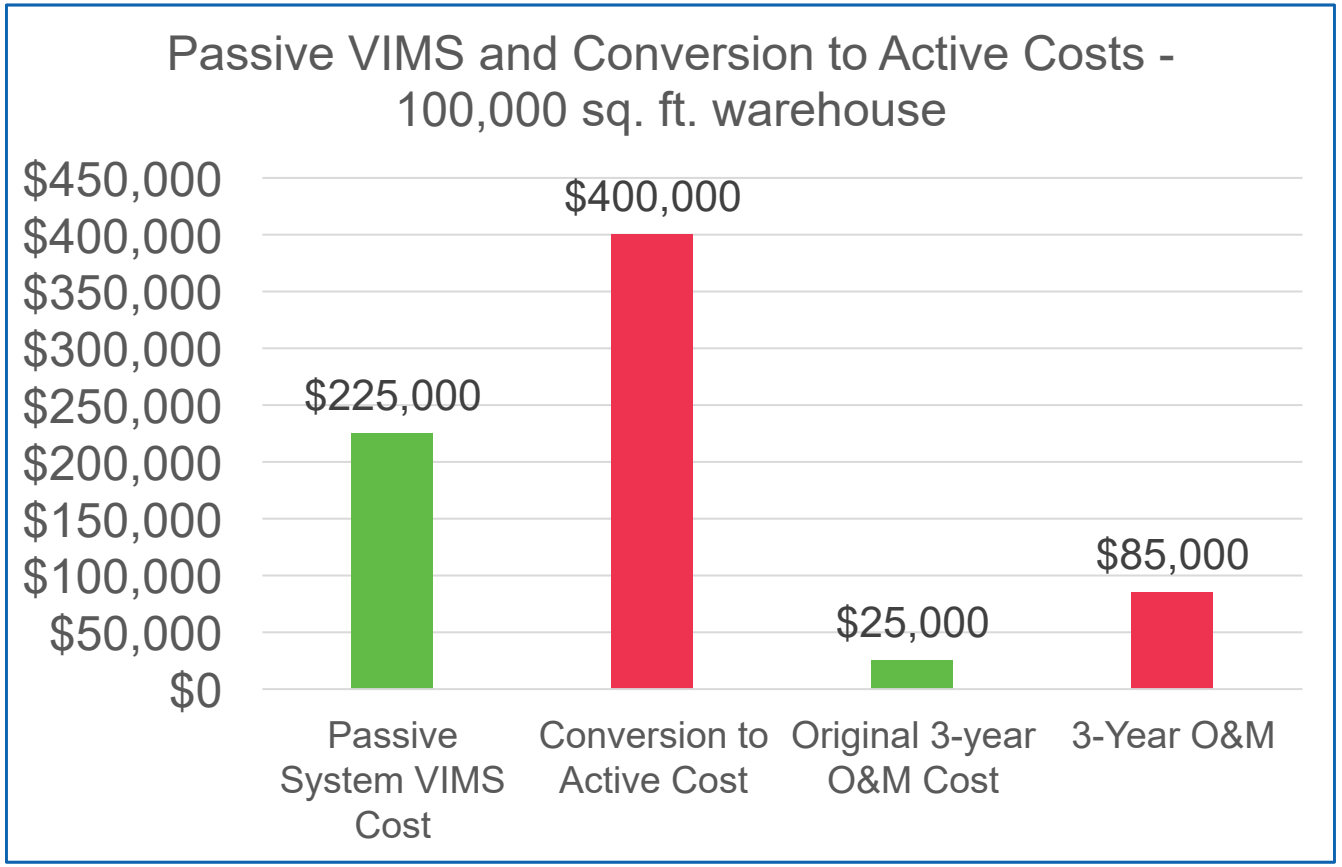
Damaged barrier with rebar

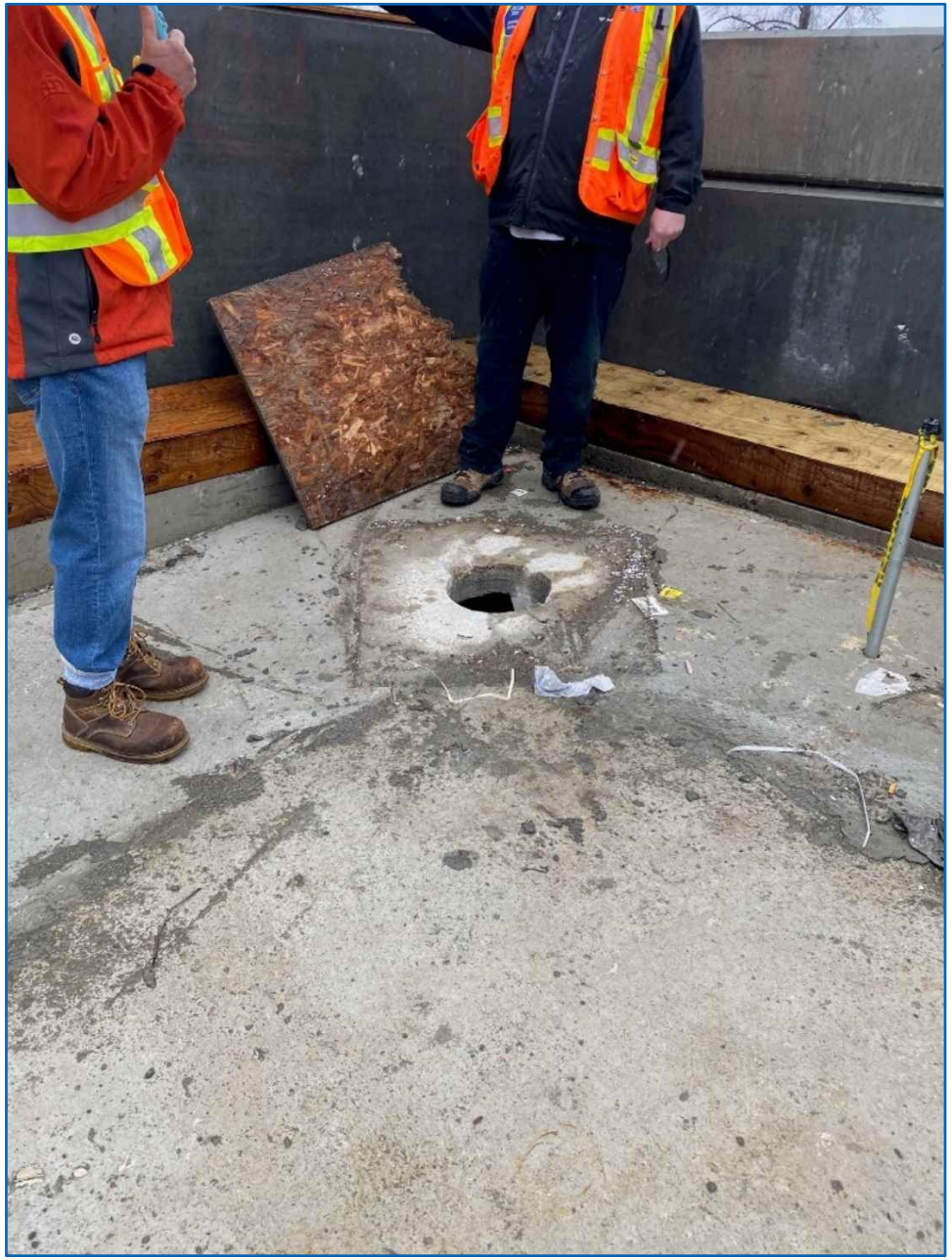
Damaged vapor barrier

Retrofit trench to convert from passive to active

Passive Cons

Cost Table showing increase





Cost increases from passive to active system

Active Vapor Intrusion Mitigation

Pros/Success

- VI protection at significantly contaminated sites
- Active systems can be great Methane mitigation with appropriate active mitigation and methane monitoring installed and maintained concurrently
- State and local municipality approval(s)

Active Pro

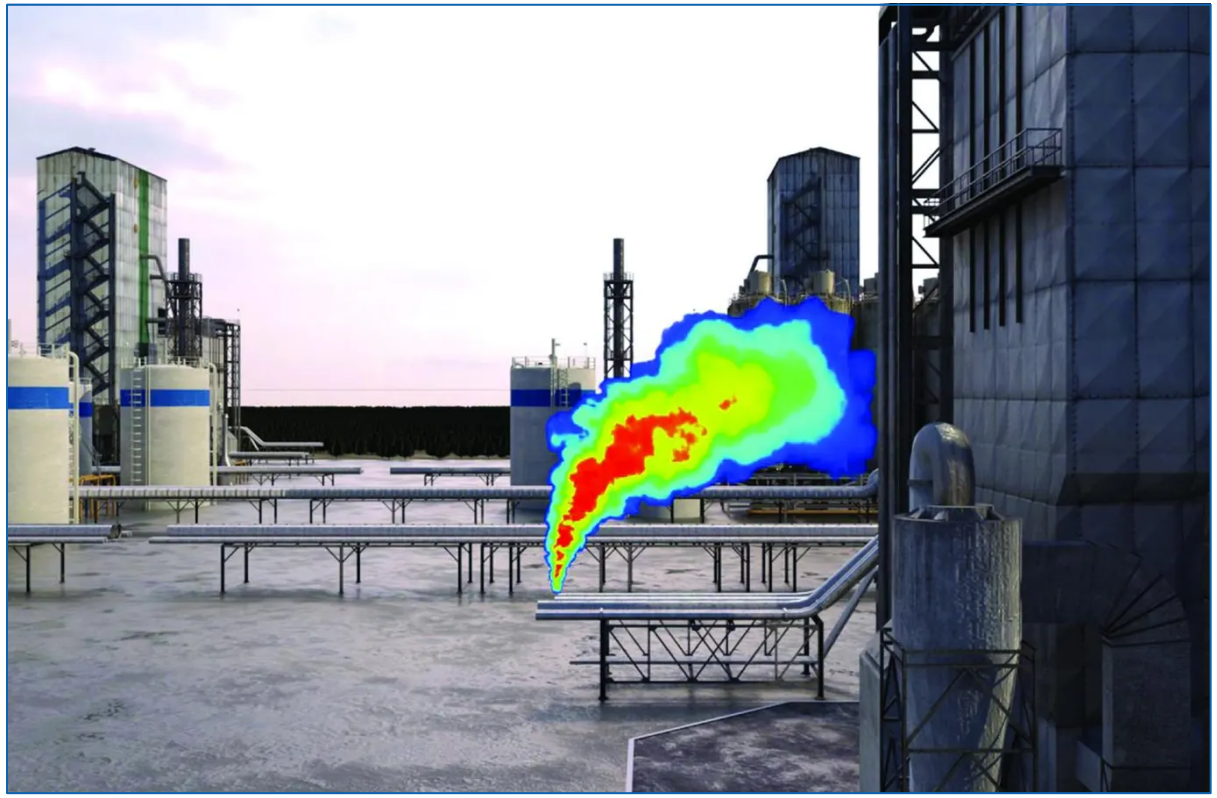
Properly designed active systems can eliminate VI risk at significantly contaminated sites

Methane monitoring built in with active systems is very effective at eliminating VI risk

Active Vapor Intrusion Mitigation

Cons/Issues

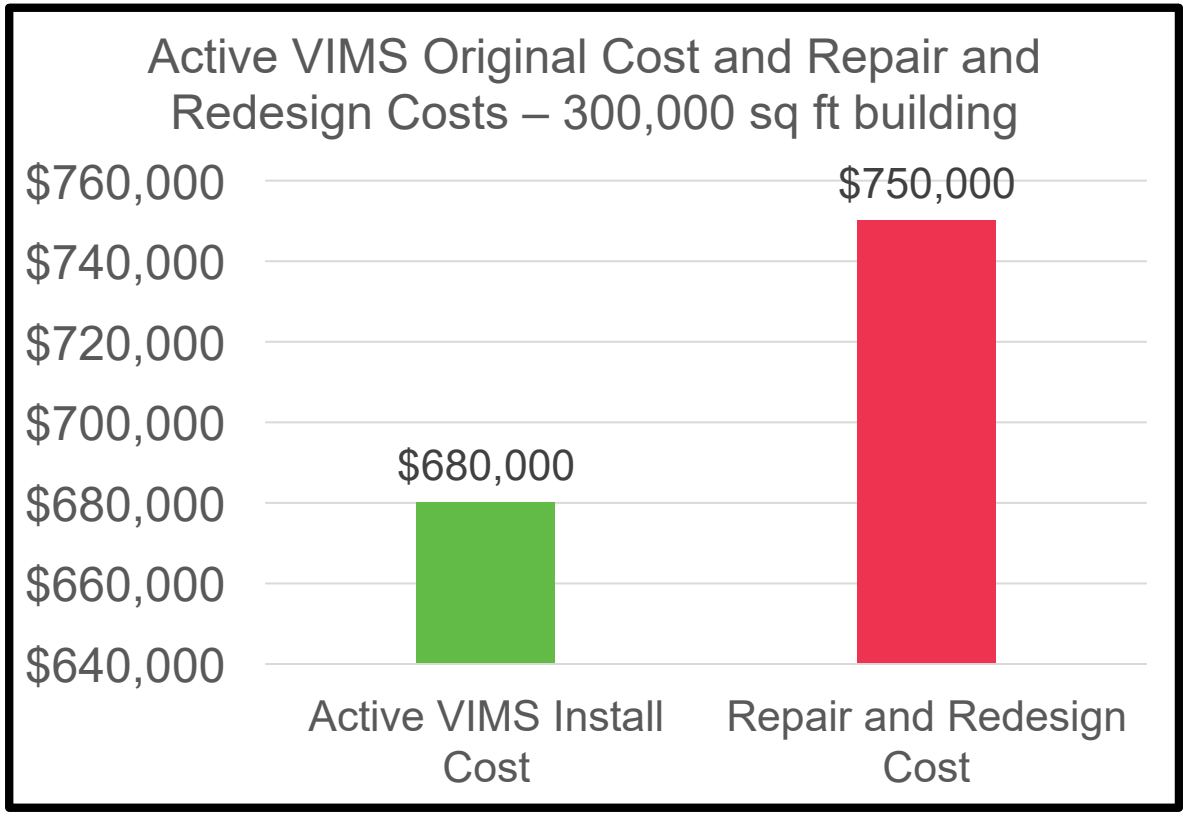
- Lack of accurate O&M for active systems, alarms, and responses
- Actual costs accrued for system repair or additions
- Building occupant down-time due to system or power failure
- Follow-up on system operations post installation 1-year, 2-year, and beyond and the lack of initial design to move active system to passive if possible. Therefore, unnecessary extended costs for O&M for active system



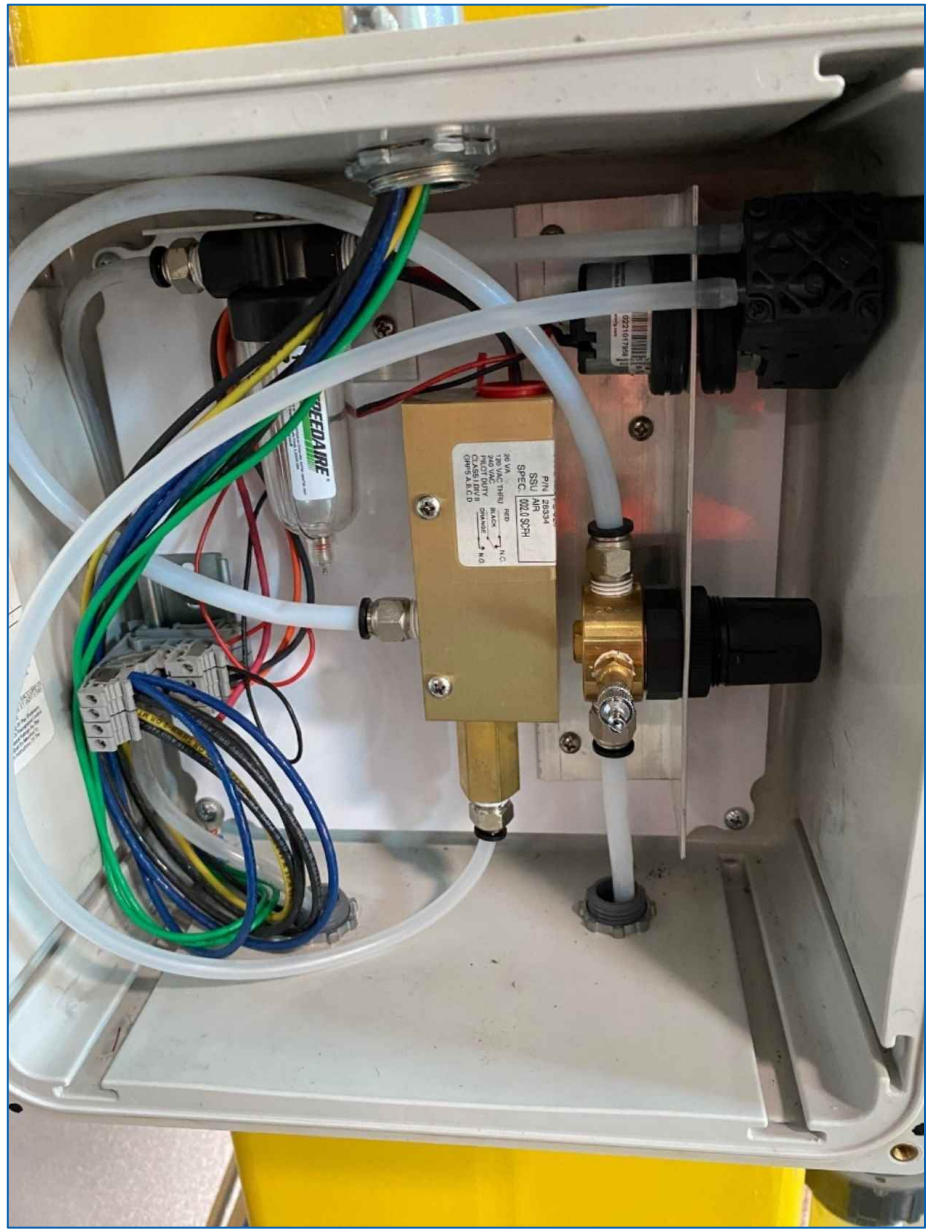
Active exhausts too close to intakes, or above ambient and flammable thresholds

Active Cons

Cost Table showing increase



Cost increases due to poor design of active system. Repair and redesign doubled the overall costs of the system



Active Cons

Inaccurate O&M or training for onsite staff resulting in damaged system(s)

Active system not designed for methane correctly and risks acute/flammable exposures

Monitoring systems not protected and damaged by occupants.

Conclusions

Overall both passive and active systems are effective at reducing and/or eliminating the VI Risk to a building structure. However, there are pros and cons for each system based on:

- Building type
- Design and accurate CSM
- Type and level of contaminant
- O&M details and schedules
- Regulatory requirements
- Lack of decommissioning or exit strategies for systems planned into the overall design initially
- The overall general quality of the installation for these systems

Each system should not be “cookie-cutter” with design, oversight, O&M, etc. The consultants and regulators need to look at the sites individually, as each post their own risks.