

825 Site Visit - Aug 19, 2021

Thursday, August 19, 2021 8:03 AM

- 07:50: Meet on-site: NGG: Michael Shannon; The Dextra Group: Kurt Batsel; AECOM: Holly Holbrook
- Meet Colin Scanlon - Apple Lease manager: cscanlon@apple.com / Apple, Real Estate & Development
Mobile: 510.290.7726
 - HVAC - not sure how operating
- Pre-arrange Site Visit Agenda:
 - The sub-slab depressurization system that was installed underneath the site building to vent vapors to the atmosphere.
 - The building's concrete slab and cracks that were sealed to prevent vapor intrusion. As well as any building concrete slab penetrations (e.g., from pipes or seams in the building).
 - Past indoor air sampling locations.
 - The location where contaminated soil was excavated from underneath the building.
 - The spaces between the walls of the three sections of the buildings that were sealed in 2014-2015.
 - The emulsified vegetable oil in-situ bioremediation system.
 - The location of groundwater monitoring wells.
- Holly: 4 HVAC zones 1st floor
 - Can't access vent riser pipes - no ports
- Building Elevator Maintenance:
 - Elevator shaft in GW in a pvc sleeve.
- IA-4: Open area in front of elevator.
- Matt: Roof, West Bldg Vents are exactly 10' from HVAC, just meeting code. Not great for VOCs bc venting into hvac. Would be better / need to extend 10' high.
- Matt: Roof, East bldg stack issues. Vents too close to chiller. Cut too low.
- Photo. PVC pipes in in service room; unk source. Suspect drain from roof (it's flat). Around pipe openings sealed (good). Room is has hvac air (good).
- Older concrete floor cracks well sealed. Photo examples.
- SS-05 under carpet (photo). Identified by Apple. Right SS diameter, but grout sealed. Seems mislabeled as SS-5 location not shown here in 2016 VI rpt. Matt: Seal sub slab ports. Not abandoned properly. Rusted. Use brass and SS. Reinstall or abandon. Seal and can redrill if needed. Don't need a permanent SS port.
- SS-4 (photo) not poured well.
- Room 12-19 has drain. Room under negative pressure -4. It's hvac well balanced. Sample this room bc of drain and neg pressure.
- Matt: Room 12-14 (w/saw?) pressure 5.6 pascals. Has positive pressure. Would sample in hallway because has lower pressure. Otherwise sampling vent air.
- Justin with Apple, part of tour. Rooms are supposed to be warm, but have high turn over. Bldg has turn over. Didn't change for COVID. On 24 hrs because do thermal testing overnight.
- IA-2. Environmental room. Raised floor.
- Cube office work area IA-7: 3 pascals lower than hallway.
- IA-8 Has a higher pressure. Unlikely to be an issue here.
- IA sample where pressure is lower
- Need to look at past SS concentrations
- IA-9: Bathroom neg pressure. -15.7 pascals. Drain has no measurable flow, but the drain cover are too small to get tubing down. Can't feel flow. EPA assumption is all drains leak, but not representative.

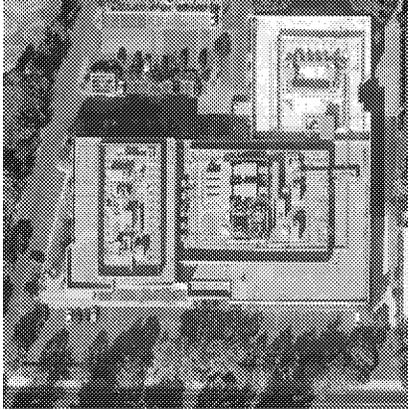
Negative means air comes in to roof.

- SS-3 (Photo): Cannot locate SS-10 and SS-11. Indoor building layout has had changes (?) since 2015. AECOM will look at their records.

- Matt / EPA Comments:
 - EPA samples with hvac off because venting changes with economizers and season and we can't control for those future scenarios.
 - 4 stacks need to be extended. Ok per code but not COCs. Main bldg is under chiller stack, not even sure how extend.
 - Be nice to get the HVAC test and balance reports to know where to sample. Want economizers to be closed and heater on. Usually in January.
 - Want HVAC off for worst case short-term exposure scenario.
 - Destroy the indoor SS ports.
 - Crack inspection documentation.
 - Locate the indoor SS missing ports.
 - Apple is operating bldg (HVAC) perfectly. Pressure right. But, long term we have no control over.
 - Recommend cages around ladders to roof.

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Vapor Intrusion Assessment 825 Stewart Drive, Sunnyvale



General

Passive subslab depressurization systems (SSDs) were installed on the three connected buildings at 825 Stewart Drive prior to installation of a building ventilation system. It appears that the mechanical design of the HVAC system applied the standard 10-foot distance between building exhaust vents and HVAC intakes to the SSD exhaust for the west and main buildings. The HVAC system upgrades also included features that limited air flow from the SSD vents on these buildings. It is recommended that these impacts to the SSD operations be mitigated.

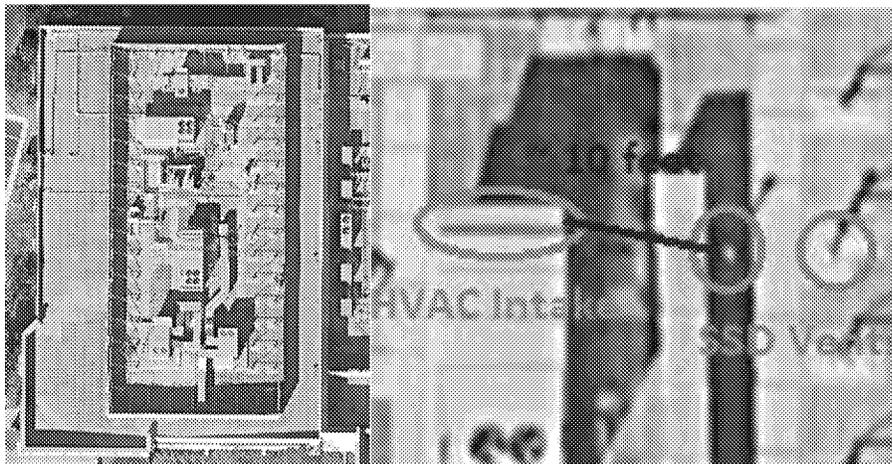
It was also generally noted that:

- SSD vent pipes are not accessible inside the buildings.
- Active, balanced ventilation systems were observed, and the buildings appear to maintain a positive pressure in regularly occupied spaces. Test and balance information for the HVAC systems is requested to confirm this.
- Exposed, sealed concrete was present throughout much of the buildings.
- Subslab sampling ports, left in place, have not been regularly sampled or maintained and several could not be located. It is recommended that these be located and maintained or decommissioned.

West Building

The west building is two stories with an approximately 15,000 square foot footprint. The west building houses the main entrance lobby for the building which is open to the second floor. The building elevator is also present towards to rear of the lobby area. The following were noted:

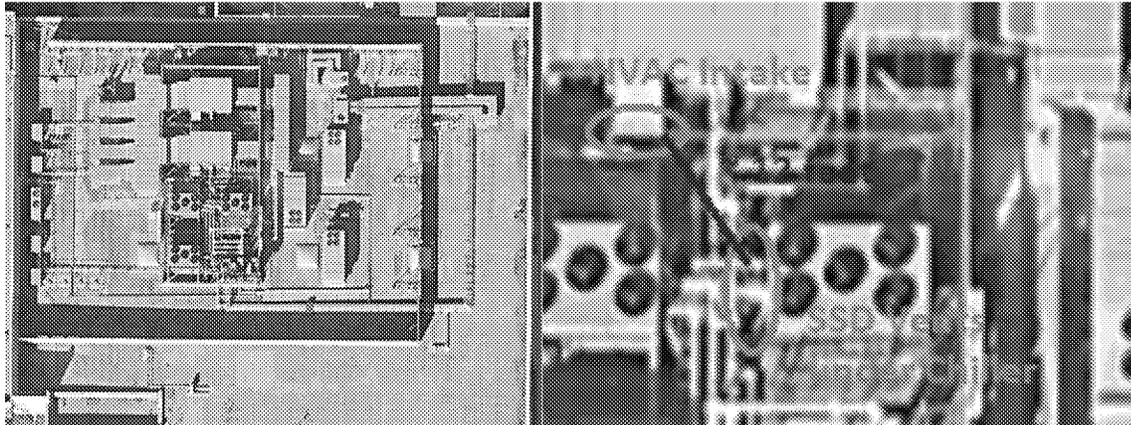
- Significant, visible slab cracks, gaps and penetrations had been sealed.
- There was positive pressure between the lobby and outside of approximately 1.5 pascal during the visit.
- The elevator pit and penetrations appear to be sealed from the subsurface. The elevator is a typical piston type low rise elevator. The piston housing remains a potential pathway for vapor entry, as it penetrates deep into the subsurface (typically these are twenty feet or more deep).
- The SSD vents on the roof are not significantly elevated above the roof (~ 3 feet) and are sheltered from wind.
- A main HVAC intake is approximately 10-feet from the western SSD vent. It is recommended that the vent stacks be reconfigured to avoid vapor intake from the HVAC.



Main Building

The main building is one story with an approximately 30,000 square foot footprint. The building is divided into office spaces and test areas and the building pressure appear to have been balanced to accommodate the various building uses. The following were noted:

- There was positive pressure between the break room and outside of approximately 6 pascals during the visit. Office areas adjacent to this break area had pressures of approximately 2 to 3 pascals lower and the adjacent men's restroom had a pressure of 16 pascals lower than the break room area. It is recommended that sampling take place in both office spaces, where building pressure is lower than the break room area.
- The SSD vents on the roof are under the building chiller plant piping and are within 12-feet of a ventilation system intake. There is not significant air flow near the SSD vent stacks and it is likely that the SSD vents are not functioning as intended and vapors could be building up on the roof near the HVAC intake.
- Generally, the slab had been sealed, however some large test equipment is bolted to the slab and it is unclear if any of these installations penetrate the slab.



North Building

The north building is one story with an approximately 14,000 square foot footprint. The following were noted:

- There was positive pressure between the rear hall and the outside of 4 pascals.
- Several subslab ports could not be located.
- The SSD vents on the roof are approximately 25 feet from the nearest HVAC intake and they were relatively unobstructed by HVAC and roof structures.

