

RETRO-COAT HELPS SPEED REAL ESTATE TRANSACTION

**CASE STUDY:
Vapor Intrusion Effectively
Mitigated at Former Landfill Site**





OVERVIEW

An office building located on the San Francisco Peninsula was left vacant for multiple years. The building is located on top of a capped landfill which is a known methane producer. After a recent change in ownership, it was important for the new owner to make the necessary improvements to the building so that new tenants could move in quickly. One of these improvements was to update the vapor mitigation system to ensure the tenant's safety from any harmful vapor intrusion.

The owner enlisted the expertise of Langan to update the vapor mitigation system. Langan proposed using Retro-Coat Vapor Intrusion Coating System because of its proven resistance to harmful vapors and its durability. The owner was thoroughly pleased with this application because it accomplished two goals with a single product: it mitigated the harmful vapor intrusion and provided a durable coating for the floor of the basement level. Retro-Coat's multi-functionality saved the site owner time and money.

HIGHLIGHTS



Retro-Coat functioned as a vapor intrusion mitigation membrane as well as a long-lasting coating for the basement level, accomplishing two of the owner's goals with one product.



Retro-Coat was chosen as the most feasible and effective treatment due to compatibility with pre-existing methane mitigation system components.



Retro-Coat is resistant to harmful methane gas intrusion and is a wearing surface, meaning no additional concrete protection is necessary.



The updated vapor intrusion mitigation system allowed for the new tenants to move in quickly.



Retro-Coat is applied without any odor and cures quickly, reducing building downtime.

PROJECT TIMELINE

1965-1985

The current site was constructed from bay fill activities



1985

Partial MMS installed during initial building construction



2017

Langan worked with Tenant to determine appropriate membrane improvements; Langan obtained regulatory approval for proposed MMS updates



2018

MMS improvements completed; Langan obtained regulatory approval, enabling temporary occupancy by Tenant



2019

Site improvements will be completed including updating the pre-existing vapor intrusion system



BACKGROUND

The building was built in 1985 and was originally a corporate office. After the original tenants moved out, the building remained vacant for years, despite being located in a sought-after area near the San Francisco Bay.

The new owner worked with Langan to update the vapor intrusion mitigation system so that new tenants could move into the building. Langan found that the older building had very limited plans with little detail regarding the current vapor intrusion mitigation

system. After further investigation, they found that the building had some sub-slab venting, a membrane layer, a mechanical blower in the basement, and an old wind turbine on the roof. Langan considered updating the membrane with a new system but discovered that the membrane only covered portions of the slab. This led them to propose a vapor intrusion coating system, specifically Retro-Coat, to the building owner. This was the most feasible option in terms of design and the most practical option for the owner who already planned to coat the basement floors.



Retro-Coat™
Vapor Intrusion Coating

2017

Retro-Coat chosen as site vapor intrusion mitigation system

TREATMENT APPLICATION

STEP
1

PREP AND FILL

First, the concrete was cleaned and abraded. Then, Retro-Coat caulk was applied to seal any areas of possible penetration.



STEP
2

APPLY PRIMER

Once the area was sealed and prepared, the Retro-Coat Primer was applied at 6 mil.



STEP
3

APPLY RETRO-COAT

After the primer dried, Retro-Coat was applied in two 10 mil coats using a squeegee and back-roll method.



STEP
4

SEAL

Once Retro-Coat dried tack-free, the self-priming sealer was applied. This was applied at a 160 square feet/gallon coat. Due to the fast curing time, this project was completed quickly, allowing the tenants to move in on a prompt timeline.



RETRO-COAT RESULTS

Retro-Coat consists of chemically resistant materials which will protect this structure from the threat of contaminant vapor intrusion, specifically methane gas. Retro-Coat finishes to a high gloss, easy-to-clean surface that is impervious to vapor and moisture transmission. Additionally, Retro-Coat withstands foot traffic and industrial settings. It was significant to have a highly durable coating system in place because the tenants plan to use the basement level to house large computers and heavy technological equipment.

The site owner has been very pleased with the outcomes from Retro-Coat. The building's basement level has a highly durable coating and most importantly, the vapor intrusion mitigation system is now highly effective.

Retro-Coat[™]
Vapor Intrusion Coating

TECHNOLOGY

Retro-Coat Vapor Intrusion Coating consists of chemically resistant materials which protect existing structures from the threat of contaminant vapor intrusion. Retro-Coat was developed by experienced vapor intrusion specialists and is proven to resist the most aggressive chemical vapors. This technology acts as a protective barrier eliminating the need to remove the existing slab and when combined with *in situ* treatment, it can greatly lower remediation costs.

Retro-Coat™

Vapor Intrusion Coating

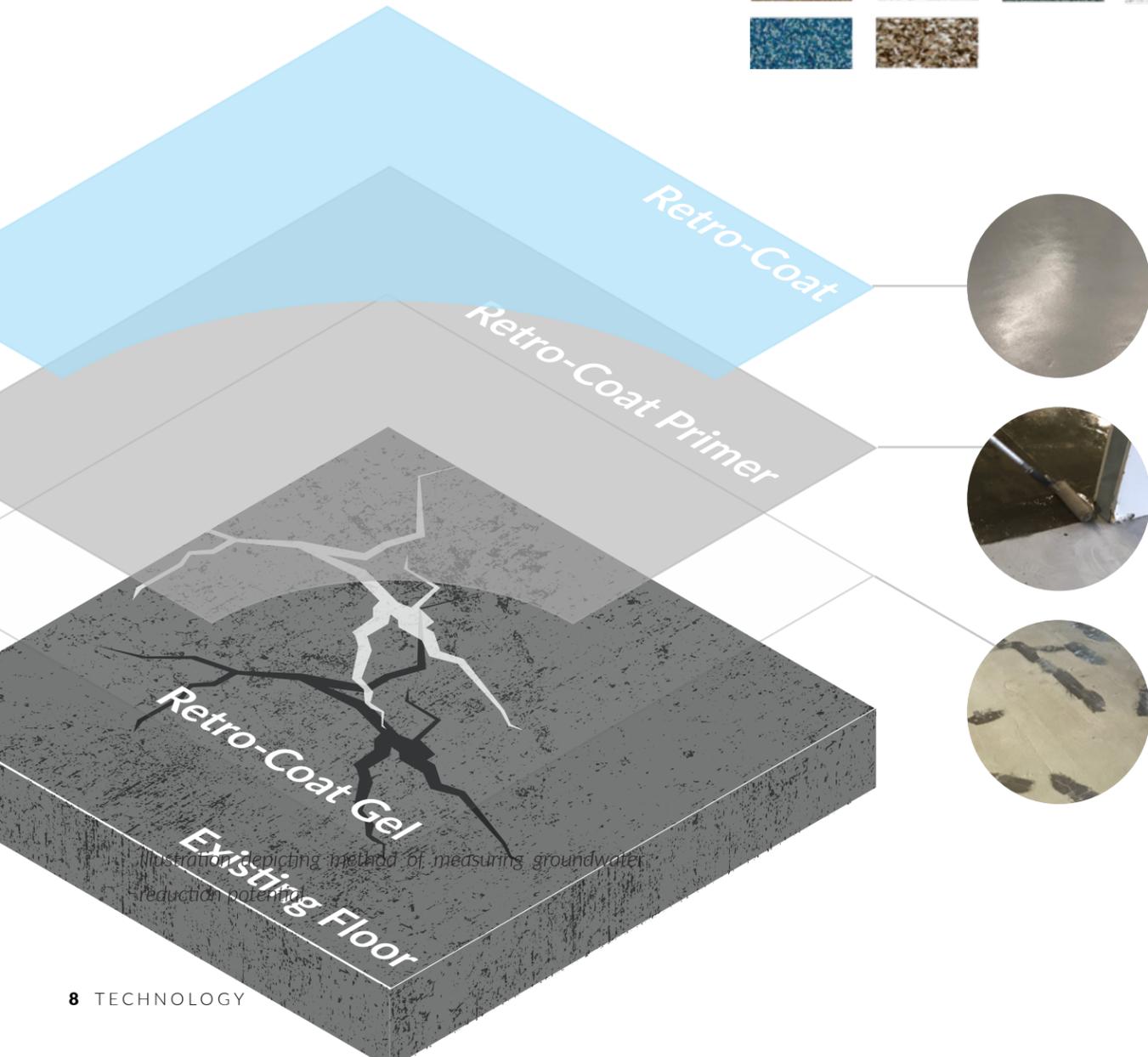
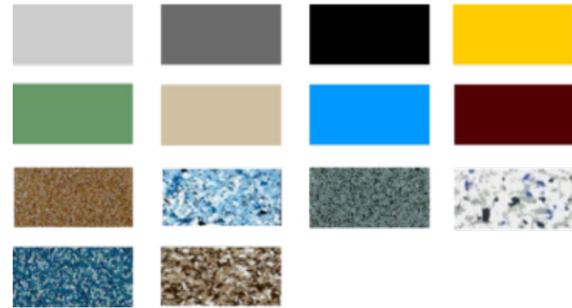


Illustration depicting method of measuring groundwater reduction potential



ABOUT LANGAN

Langan provides an integrated mix of engineering and environmental consulting services in support of land development projects, corporate real estate portfolios, and the energy industry. Their clients include developers, property owners, public agencies, corporations, institutions, and energy companies around the world.

Contact Information:



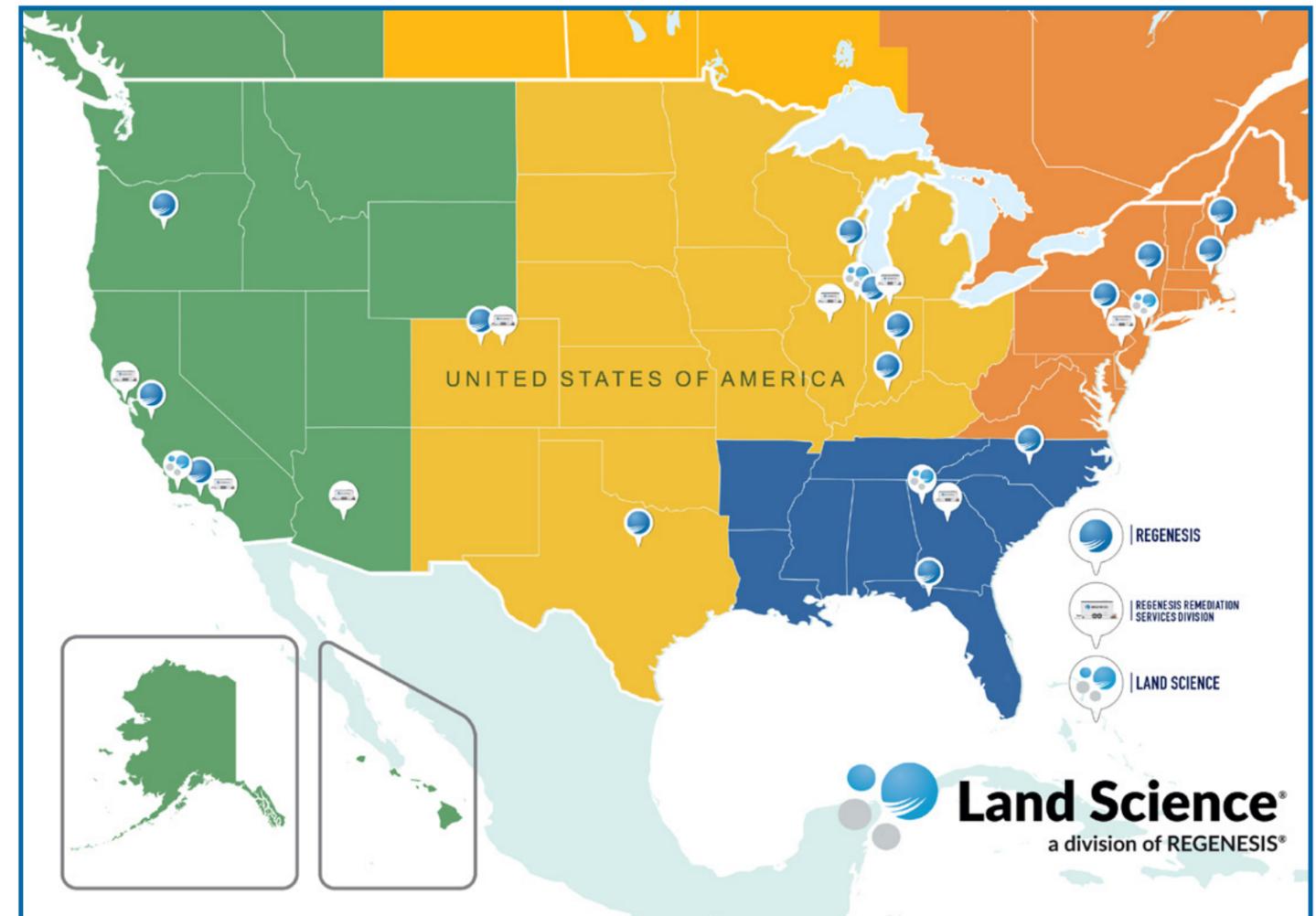
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Land Science Is Ready To Assist You In Determining The Right Solution For Your Site



Land Science Technologies for Vapor Mitigation Success

Retro-Coat™ Vapor Intrusion Coating

Vapor intrusion can cause significant uncertainty for building owners. Retro-Coat™ provides a simple and proven solution to a complex problem. Applying Retro-Coat can provide a building owner with long-term assurance that the vapor intrusion risk has been successfully mitigated, while at the same time, reducing the overall mitigation cost and avoiding the need to alter the building's foundation.

Geo-Seal® Vapor Intrusion Barrier

Geo-Seal® is a patented composite membrane system combining the advantage of chemically resistant high-density polyethylene (HDPE) and the benefits of spray-applied membranes. Accepted by state environmental agencies across the country and used by the US Navy, US Air Force, New York School Construction Authority, Fortune 500 companies and leading environmental firms world-wide.

Vapor-Vent™ Vapor Collection System

Vapor-Vent™ is a low profile vent system that can be used in lieu of slotted PVC pipe. The speed of installation and the proximity of the vent to the barrier provide cost savings and performance benefits compared to other technologies.

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