Multi-tenant buildings present a unique set of challenges when water intrusion breaches the envelope. The mix of below grade and above grade exposures, active tenant occupancy, and varied substrate conditions means that a one-size-fits-all approach rarely works. Through years of fieldwork, I've learned that each project demands careful diagnosis, a clear scope, and a practical sequence of fixes. The aim is not just to stop leaks but to restore the building's resilience, curbing moisture migration while minimizing disruption to tenants. The cases below draw from a range of subtropical climates, wind driven rain events, and the typical degradation paths that show up in concrete structures, from efflorescence and concrete spalling to rebar corrosion and hydrostatic pressure behind curtain walls.

The journey from symptom to remedy begins with a precise leak investigation. In several buildings, attic and basement moisture tests revealed that water was not simply penetrating through a single failed joint but moving through a complex path along the building envelope. In some instances, vapor barriers and air barriers had not been properly detailed at expansion joints, allowing moisture-laden air to bypass the primary protection and condense within wall cavities. In other cases, the problem originated at excavation depth, where inadequate below grade waterproofing and drainage board details allowed hydrostatic pressure to push water into elevator pits and parking structures. Across the board, the decision to pursue remedial waterproofing hinged on a robust understanding of how water moved through each element of the building envelope, from plaza decks to balcony coatings, and from sheet membranes to fluid applied membranes.

Case A explores a multi-tenant complex that sits along a busy street with a plaza deck and a subterranean garage. The complex experienced a slow, persistent dampness that tenants noticed as a cool draft near expansion joints and a faint odor of damp concrete on lower floors. The initial steps involved a thorough leak investigation: a combination of moisture testing and limited relative humidity testing in wall assemblies, plus a non-destructive infrared scan to identify thermal anomalies around failed joints. The results pointed toward water migrating through a plaza deck waterproofing system that relied on a sheet membrane, but with critical defects at expansion joints and drain connections. The plaza deck sat above an occupied garage. When rain was heavy, hydrostatic pressure would push water through the deck and into the underlying structure, finding path of least resistance into the parking level and elevator pit.

The scope of work here combined remedial waterproofing with a careful reconstruction of joint details. The contract called for removing compromised portions of the deck surface, replacing failed drainage components, and installing a more resilient joint system. The team chose a balanced approach: a sheet membrane under the deck surface layered with a fluid applied membrane at critical transitions, coupled with a robust drainage board beneath the deck to carry water away from the structure. On the joints, they installed silicone sealant backed by a backer rod with a precise bond breaker, ensuring both movement accommodation and long-term seal integrity. The repair included targeted vapor barrier and air barrier details around penetrations that were identified as moisture pathways, along with re-waterproofing of the parapets and parapet-to-deck transitions.

Two lists help summarize the practical choices that emerged from this case. First, the essential sequence of execution:

- Confirm the path of water using targeted moisture testing and limited destructive testing at the balcony and deck interfaces.
- Remove compromised materials in the deck surface and replace with improved drainage components and a more robust waterproofing system.
- Install a sheet membrane beneath the deck surface and a fluid applied membrane at critical joints and transitions.

- Re-establish expansion joint details with properly cut joints, flexible sealants, and backer rods sized for movement.
- Add moisture control layers such as a vapor barrier in interior cavities where condensation risk existed, and ensure the air barrier details align with the envelope design.

Second, the key materials and interfaces to monitor during performance:

- Drainage board performance under elevated loads and residual water pressure.
- The durability of silicone sealant and the integrity of the backer rod.
- Compatibility of the fluid applied membrane with the sheet membrane and with the concrete substrate.
- The condition of the water stops and scuppers that feed into the drainage system.
- The long-term behavior of the expansion joints under freeze-thaw cycles and constant foot traffic.

Case B centers on a midrise building with a substantial above grade element where a combination of balcony coatings and a traffic coating system faced rapid wear. Tenants reported damp spots along balconies after heavy rain and a faint efflorescence on interior corridor walls adjacent to the exterior wall assemblies. The investigative phase showed that the balcony coating system had begun to delaminate at curved transitions and near ornamental rail posts. The source was twofold: first, a lack of proper moisture testing during the selection phase allowed a high-performance coating to be chosen that did not tolerate the subtropical humidity and wind driven rain in the specific exposure; second, gaps in the expansion joints at the balcony floor and the wall interface created small channels for moisture migration. With the weather window short and the building running at near-full occupancy, the project team had to balance speed with thoroughness.

The remedy for this building mixed a high-quality traffic coating with a reinforced balcony coating system and a refined expansion joint treatment. The implementation started with surface preparation to remove loose coatings and to expose the substrate for mechanical adhesion. A moisture tolerant primer was applied, followed by a two-part polyurethane or epoxy-based coating system designed to resist abrasion and chemical exposure from de-icing salts and urban runoff. Where joints existed, expansion joints were refreshed with a silicone sealant buttressed by a backer rod that accommodated wide movement. The balcony surfaces themselves received a resilient topcoat with a skid-resistant texture that remained faithful to the coating’s performance in warmer months. Importantly, the team added a drainage strategy at the balcony plane with a small slope toward scuppers and integrated a drainage board where the substrate allowed, ensuring that any small amount of captured moisture would be drained away rather than migrating into wall assemblies.

This case underscores a few practical trade-offs. The selection of a heavy-duty traffic coating delivered durable wear resistance, yet it demanded careful surface preparation and rigorous condition of the substrate. The financing and schedule constraints prompted a tolerance for accelerated cure times, which meant relying on vendors with strong track records and meticulous field oversight. The result was a more robust balcony system that could sustain continual exposure to subtropical rain and wind, with concrete spalling and efflorescence issues addressed as part of the remediation rather than treated as separate maintenance items.

Case C shifts the focus to a parking structure and elevator pit that presented a different risk profile. The facility had a history of water seepage that manifested primarily during storm events when groundwater pressure rose around the foundation wall. The problem was not only surface leakage but a broader issue of hydrostatic pressure pushing water into the structure through capillaries in the concrete. In this setting, a dual strategy proved effective: first, a below grade waterproofing approach that included a bentonite membrane or a sheet membrane carefully lapped with the outer shell, and second, a robust interior waterproofing plan that protected the elevator pit and other critical penetrations. For a structure facing hydrostatic pressure and wind driven rain, the choice between negative side waterproofing and positive side strategies had to be weighed with the real

operating conditions. The building lay in a subtropical climate, and the moisture regime involved high humidity plus frequent rain, with seasonal heat that stressed coatings and membranes differently from cooler climates.

The remedial plan deployed a layered solution. On https://robertaaronsbctkk.contently.com/ the exterior, the pavement area and exposed walls received a proper vapor barrier and an air barrier layer to reduce inward moisture flux and to encourage controlled drainage toward the drainage plan. A combination of a drainage board and a membrane layer was installed to manage any residual water pressure. In the elevator pit and adjacent spaces, the team used a combination of sealants, backer rods and mechanical anchors to stabilize joints, then employed a silicone sealant for long-term movement and resistance to UV exposure. The joint details between the wall and the pit had to accommodate movement without creating new leakage channels. The final result was a more resilient enclosure that reduced the chance of water migrating into mechanical spaces and tenant areas.

The case illustrates the value of a careful assessment of below grade waterproofing in the context of a busy building with dynamic loads and frequent occupancy. It also highlights the importance of continuity between exterior and interior waterproofing systems. The interplay between a drainage board, ballast or coping details, and a robust vapor barrier ensures that moisture does not accumulate behind finished surfaces where oxidation and corrosion could begin to accelerate. Elevator pits, in particular, demand special attention because moisture inflow can complicate equipment reliability and maintenance scheduling. A well-designed remedial plan for these spaces must address both surface-level leaks and hidden pathways that water might follow along conduits, rebar congestion and old capillary breaks.

The practical takeaways from Case C emphasize a few core practices that have proven effective across projects with similar exposure. First, exhaust every pathway for moisture, from cracks and joints to penetrations around conduits and railings. Second, plan for a cohesive system that combines below grade and above grade elements, so that drainage, vapor barriers and air barriers work as a single envelope rather than as separate add-ons. Third, ensure that membrane interfaces are seamless at transitions and that the chosen materials can tolerate the thermal and humidity cycles typical of a subtropical climate. Fourth, treat elevator pits and other equipment spaces as critical components of the envelope that deserve dedicated protective measures and ongoing inspection.

The value of thorough testing and staged implementation cannot be overstated. Water testing and moisture testing, including targeted tests like ASTM E1105 for sealant performance and ASTM F2170 for moisture in concrete via in-situ probes, provide objective metrics to guide decisions. Where moisture levels are uncertain, temporary sealants and test joints can help reveal how water paths behave under rain events and how quickly interior spaces respond. In practice, test results inform the sequence of repairs. If a joint shows ongoing movement after the initial cure, the backer rod and sealant system may need adjustment to accommodate the actual movement range. If the surface shows rising humidity in indoor spaces after partial remediation, it may indicate that additional vapor barriers or air barrier detailing are required behind finishes.

Across all these cases, the role of a capable waterproofing contractor is central. The best teams blend technical knowledge with field pragmatism. They know when to insist on a certain membrane type or joint solution, and when field conditions dictate a more flexible approach. They understand the balance between speed and thoroughness, particularly in buildings where tenants must remain in place during repairs. They recognize that a plaza deck or balcony is not just a surface to be coated but a critical element in the building’s long-term performance. A well-executed project ends up with fewer tenant complaints, a reduction in moisture-related maintenance calls, and a structure that stands up to the demands of a challenging climate.

In practice, a few guiding principles have emerged from these and other projects. First, verify the root cause before selecting a remedy. It is easy to mistake symptom for cause when a damp corridor, a smell of mildew, or a

rising humidity reading is observed. A careful diagnostic approach - combining moisture testing, leak tracing, temperature readings, and a review of the substrate condition - helps ensure that the selected system addresses the actual leakage path. Second, design for compatibility and long-term performance. Materials must bond well with concrete, tolerate movement at expansion joints, and resist the chemical and physical wear associated with traffic coatings and outdoor exposure. Third, plan for ongoing maintenance and inspection. A waterproofing system is not a one-and-done fix; it requires routine checks of joints, sealants, and drainage components to avoid small issues becoming large problems.

The outcomes in these cases demonstrate a spectrum of successes and lessons. In Case A, the combined membrane approach and upgraded joint details delivered a measurable reduction in water intrusion during successive storms. In Case B, the balcony coatings with reinforced joints stood up to higher foot traffic and returned a dry interior corridor along the balcony line, with only minimal maintenance needed in the first two winters after completion. Case C showed that a strong below grade waterproofing strategy paired with a robust interior protection plan reduced water migration into elevators and mechanical spaces, even during months with the heaviest rainfall. Each project reinforces the idea that the most durable systems are those designed with the building's unique exposure in mind, rather than simply applying a standard package.

The overarching theme is that multi-tenant buildings demand a careful blend of science and field experience. A good waterproofing contractor will not only specify products that meet performance criteria but also tailor installation sequences to the building's lifecycle and occupancy patterns. This includes coordinating with tenants to minimize disruption, scheduling minor interior work during off hours, and communicating clearly about the expected performance and maintenance needs after completion. The right approach creates a resilient envelope that protects life safety and preserves value at the same time.

For building owners and managers, the most practical way to navigate these projects is to set expectations early and maintain a clear line of sight to the overall goal: a watertight shell that keeps moisture from damaging structural elements, finishes, and mechanical systems. That means insisting on a thorough diagnostic phase, a logically sequenced remediation plan, and solid documentation of materials, joints, and test results. It also means recognizing that some fixes are foundational and must be completed before others can deliver their full performance. A robust below grade solution helps ensure that water never becomes a threat at the heart of the building, while well-planned above grade protections keep rain from driving into living and working spaces.

As one project manager put it after a long season of rain and inspections: the difference between a good repair and a great repair is the degree to which the team anticipates the next weather event. Planning for the next storm means selecting membranes with proven resistance to wind driven rain, ensuring proper adhesion of coatings to varied substrates, and detailing joints to accommodate movement without creating fatigue points. The result is less moisture risk, safer and drier interiors, and a stronger building more capable of withstanding the climate it calls home.

In the end, the story of rectifying water intrusion in multi-tenant buildings is a story of meticulous care and disciplined execution. It's about listening to tenants, diagnosing accurately, and choosing systems that endure. It's about the quiet work behind the scenes - the careful cleaning of joints, the precise placement of a backer rod, the patient cure of a sealant, the methodical testing that confirms a seal is holding. It is this mix of hands-on craft and thoughtful design that allows a building to remain comfortable, safe, and durable, even under the pressure of heavy rains and relentless use.