



THE RESTORATION GROUPSM

Understanding the Importance of the Total Building Envelope

When problems occur on the outside of a building, they always occur in the roof, right? Wrong. The roof is a vital part of a building envelope, but there are other components which also play a vital role in maintaining watertight integrity for the building: wall systems, joints, flashings, openings (windows, doors, etc.), and water protection systems. All of these components need to function properly together in order for the facility to retain watertight integrity.

Why Building Envelope Components Fail

There are two main reasons why these components fail. The first is a consequence of deferred maintenance. Weatherproofing systems often have anywhere from a three- to a twelve-year service life, which means that the systems need to be cleaned or removed and reapplied or reinstalled

on a set schedule. Unfortunately, this does not always occur at the optimum time interval. Water enters the other components, causing damage to those components and damage to insulation, interior finishes, equipment, etc. If left unattended, it can also result in deterioration of the building and loss of structural integrity.

The second reason these components fail is because of deficiencies of original construction. This problem is becoming very prevalent as building construction is fast-tracked to meet deadlines or when shortcuts are taken to meet budgets. This can lead to deficiencies in the three elements of the construction pie: design, materials, and workmanship. In design, not enough time is taken to properly ensure all systems will function properly together. Material failure can occur if materials are used simply because they are readily available or less expensive. Workmanship, when rushed to meet deadlines or when a contractor needs to cut costs, can miss the details which are vital to the systems' proper performance.

The Restoration Process

StructureTec's Restoration Group has extensive experience in all aspects of building envelopes. We employ professional engineers with extensive knowledge and experience in the remediation field. Our process for correcting problems begins with a visual observation of the conditions. This can be enough to determine the problems

Watertight integrity is essential for the entire building envelope, not just the roof.



Why Building Components Fail

Consequences of Deferred Maintenance

- Water/Moisture Infiltration
- Weather Barrier Breaches
- Damage to Insulation/Interior Finishes
- Damage to Equipment
- Deterioration
- Structural Distress

Deficiencies of Original Construction

- Design
- Materials
- Workmanship

■ Understanding the problem and designing a solution to remediate the existing structure require extensive knowledge and experience. **The Restoration GroupSM** offers this knowledge and experience, along with a dedication to quality and customer satisfaction. ■



BENEFITS

Delivers thorough solutions through oversight by Professional Engineers

Provides attention to detail and practical experience in remediation

Ensures long-lasting solutions through designed redundancy in the remediation systems

Presents appropriate outcome through extensive attention to evaluation

Meets client's needs and requirements through multiple remediation options

on some buildings. Some problem areas, however, require further investigation through exploratory analysis. This may mean making temporary openings in the building to see what is happening beneath the surface. Leakage testing and monitoring equipment are also used. These steps are all a part of the **Evaluation Phase**.

When the cause of the problem has been analyzed and determined, the project moves into the **Design Development Phase**. Restoration projects are unique in that there are often several options for remediation available to solve the problem. Generally, the difference in solutions depends on how long the solution will last and how much redundancy is built in. The longer lasting the solution, the less repeat maintenance will be required. The more redundancy, the more protected the building. When a sealer or coating reaches

the end of service life, having drainage capacities built into the system will prevent leakage until the sealer or coating is reapplied. The longer lasting the solution and the more redundancy, the more expensive the solution generally is. This Design Development Phase is when priorities and budgets are weighed to meet the needs of our clients.

During the **Construction Document Phase**, the remediation system is written with all of the specific detail and requirements into the legal document which will be used for bidding or negotiation. This step is crucial for ensuring that the solution which was designed is the one the contractor will adhere to. During the **Bidding/Negotiations Phase**, StructureTec assists the owner with obtaining qualified bids from qualified contractors.

The **Construction Review and Administration Phase** (or Field Quality Assurance Phase) is when StructureTec monitors field activities and coordinates all administrative requirements. Workmanship is a crucial element of the construction pie and consistent monitoring is necessary to ensure that all questions are answered promptly and that the designed system is applied completely and correctly.

Conclusion

In conclusion, The Restoration Group's process has a proven track record for identifying building envelope problems and developing solutions which will correct the issues and meet the needs of the client, ensuring the highest return on investment. ■

Total Building Envelope Management SolutionSM

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