Thornton Tomasetti

Complex Engineering For Property Cases

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COURSE DESCRIPTION:

Early engineering assessment of complex property cases can avoid costly reassessments and lengthy disputes. Engineering evaluation can determine pre-existing conditions versus event-related distress, which will facilitate the dispute resolution including getting ahead of common issues raised by insurance claims adjusters leading to claim denials. Early evaluation of potential building code upgrades/changes can assist with analysis of potential reserves, future engineering challenges, and extensive litigation.

WHY ARE ENGINEERS INVOLVED IN PROPERTY CASES?

Property disputes always involve the "built environment", and **engineers have unique expertise** that can provide answers to complex cases.

The typical property disputes are the following:

- First party insurance claims
- Construction defect claims
- Construction surety bond claims
- Subrogation

PROPERTY CASES IN FLORIDA

Property disputes can arise for almost any reason, but in Florida they almost always involves **water intrusion or water-related damage**.

Water damage will typically trigger the following:

- Construction defect claims
- Claims due to wind-related events
- 558 Notice / Turnover Claim

WHAT IS A COMPLEX CASE?

A case is “complex” when there are **a lot of variables to consider**.

Lots of separate buildings under one policy.

- Condominium associations / 558 Notice
- Authorities
- Institutional/Government Entity Policies

WHAT IS A COMPLEX CASE?

A case is “complex” when there are **a lot of variables to consider**.

Multi-faceted claim involving lots of building components

- Not only roofs, but also windows, doors, interiors, adjacent structures, etc.

EXAMPLES OF WATER DAMAGE TO BUILDING COMPONENTS

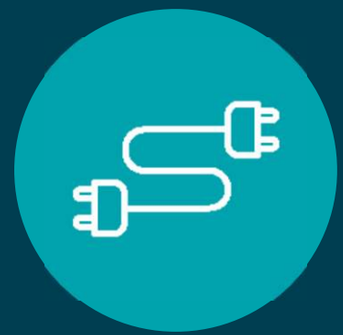
WINDOWS

DOORS / SLIDING GLASS DOORS

SHUTTERS & GUARDRAILS

EXTERIOR FINISHES

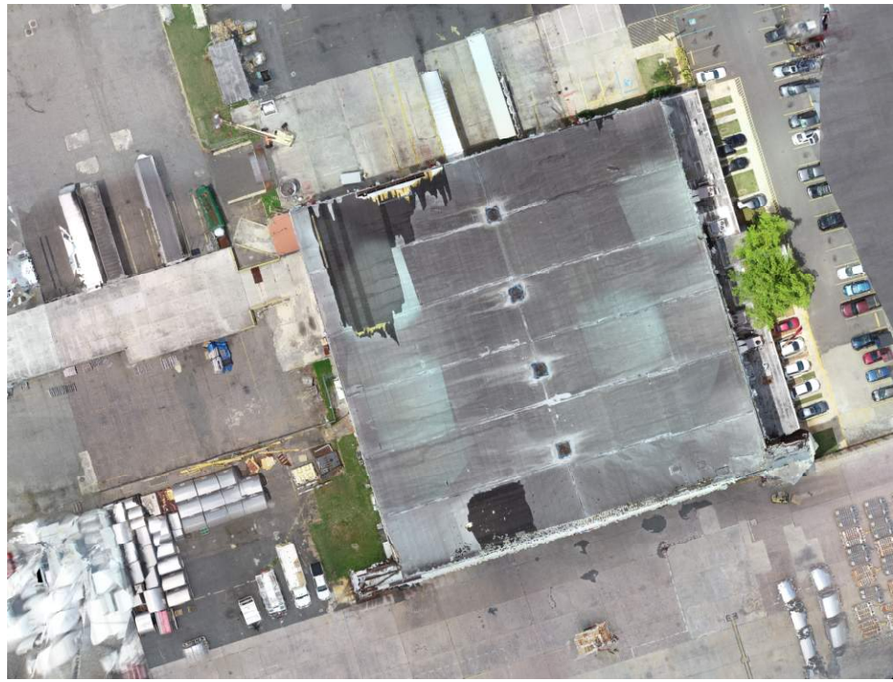
MECHANICAL EQUIPMENT



ELECTRICAL SYSTEMS

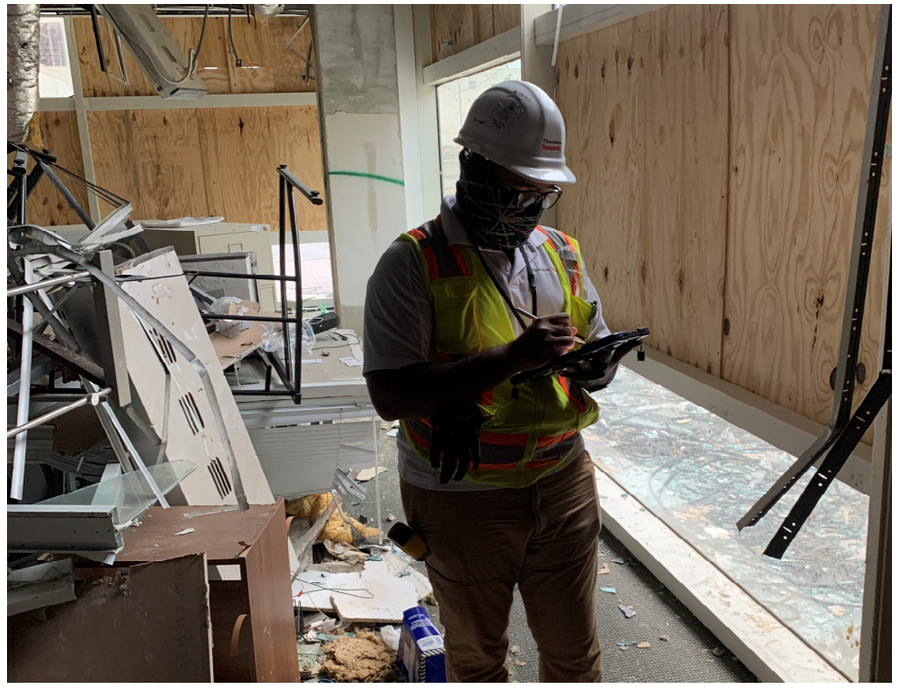
EXAMPLES OF WATER-RELATED DAMAGE TO BUILDING COMPONENTS

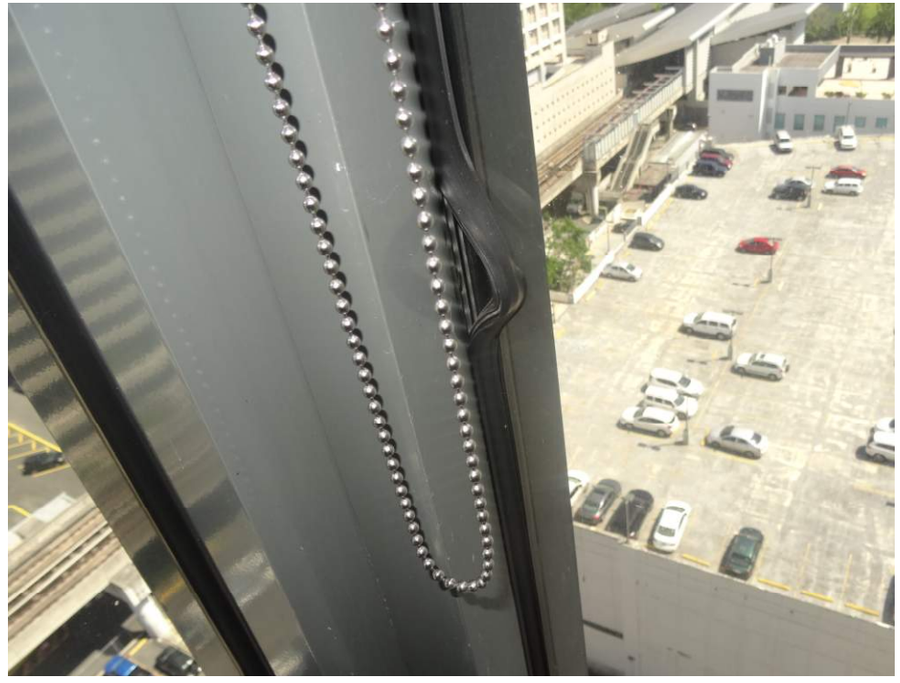
Roofs



EXAMPLES OF WATER-RELATED DAMAGE TO BUILDING COMPONENTS

Windows



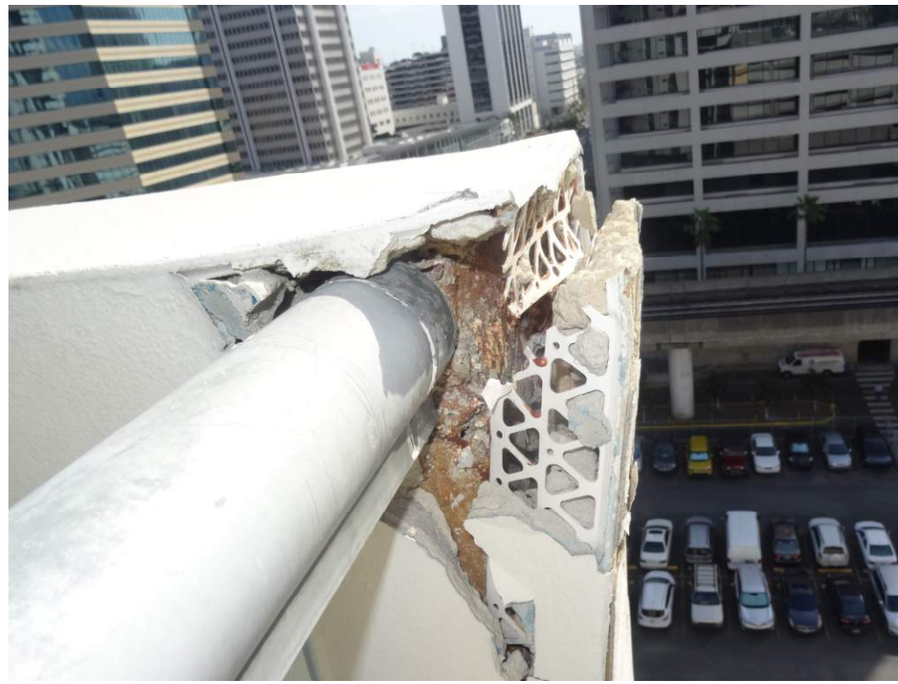


EXAMPLES OF WATER-RELATED DAMAGE TO BUILDING COMPONENTS

Doors / Sliding Glass Doors

EXAMPLES OF WATER-RELATED DAMAGE TO BUILDING COMPONENTS

Shutters and Guardrails



EXAMPLES OF WATER-RELATED DAMAGE TO BUILDING COMPONENTS

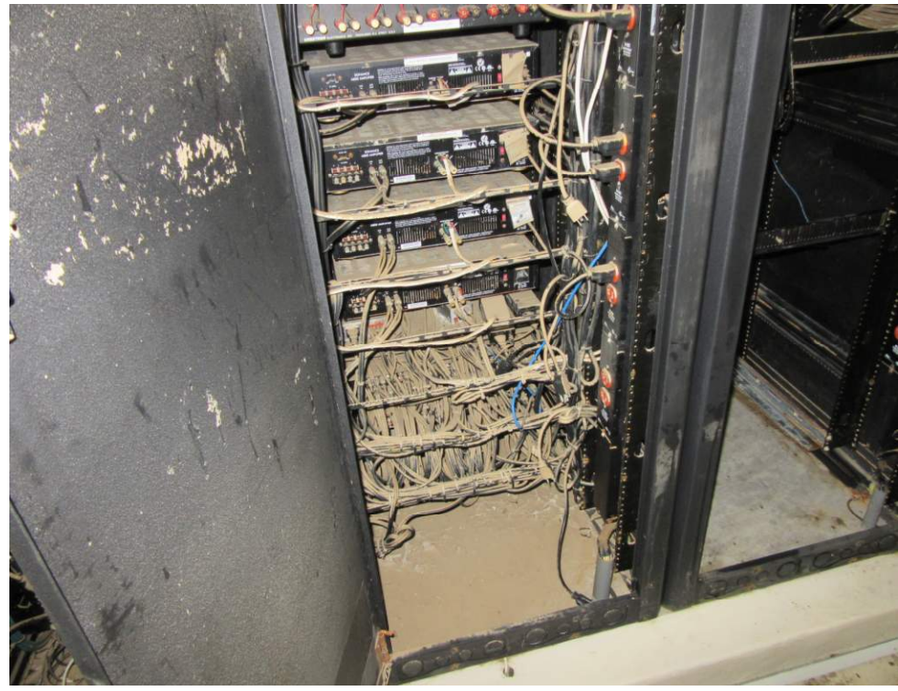
Exterior Finishes

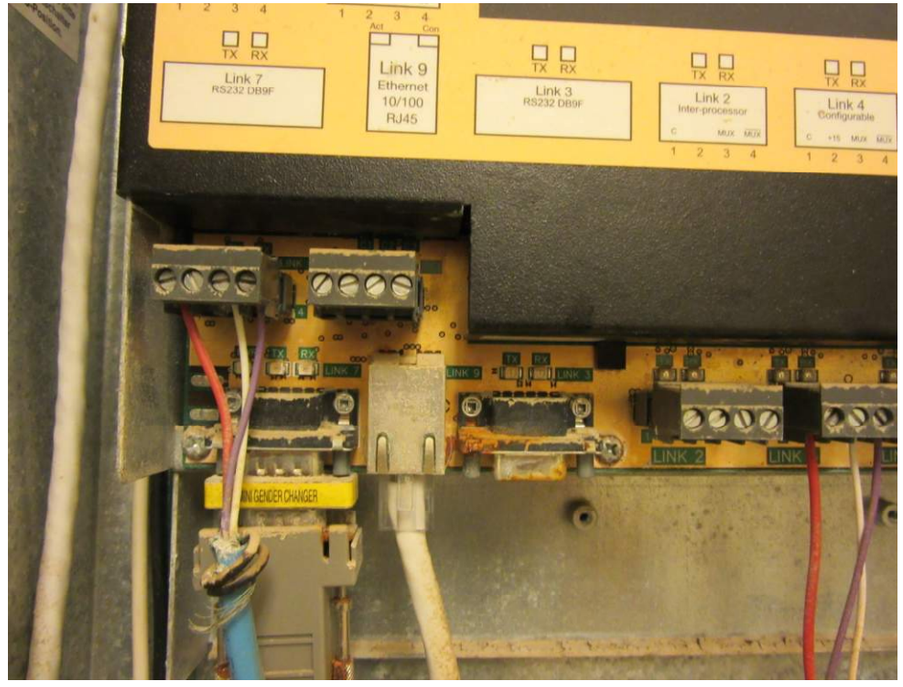
EXAMPLES OF WATER-RELATED DAMAGE TO BUILDING COMPONENTS

Mechanical Equipment

EXAMPLES OF WATER-RELATED DAMAGE TO BUILDING COMPONENTS

Electrical Systems





WHY IS WATER DAMAGE SO PROBLEMATIC?

Florida is a **harsh environment because of water**. The beautiful coastlines bring regular humidity, rainfall, and powerful windstorms, all of which are harmful to buildings.

Water is the necessary ingredient that causes:

- Material degradation
- Biological growth (mold)
- Corrosion
- Efflorescence

HOW ENGINEERING CONSULTANTS CAN HELP RESOLVE CLAIMS

Advantages for Engineering Engagement

1. Identify **pre-existing conditions vs. event-related damage** before evidence disappears
2. Identify potential **building code** ordinances or law
3. Help **set cost expectations** for the involved parties
4. A **thorough investigation report** can nip problems in the bud

HOW ENGINEERING CONSULTANTS CAN HELP RESOLVE CLAIMS

Non-Destructive Assessment

Aerial documentation by **drones**

HOW ENGINEERING CONSULTANTS CAN HELP RESOLVE CLAIMS

Non-Destructive Assessment

Comparison with **Historical Images**

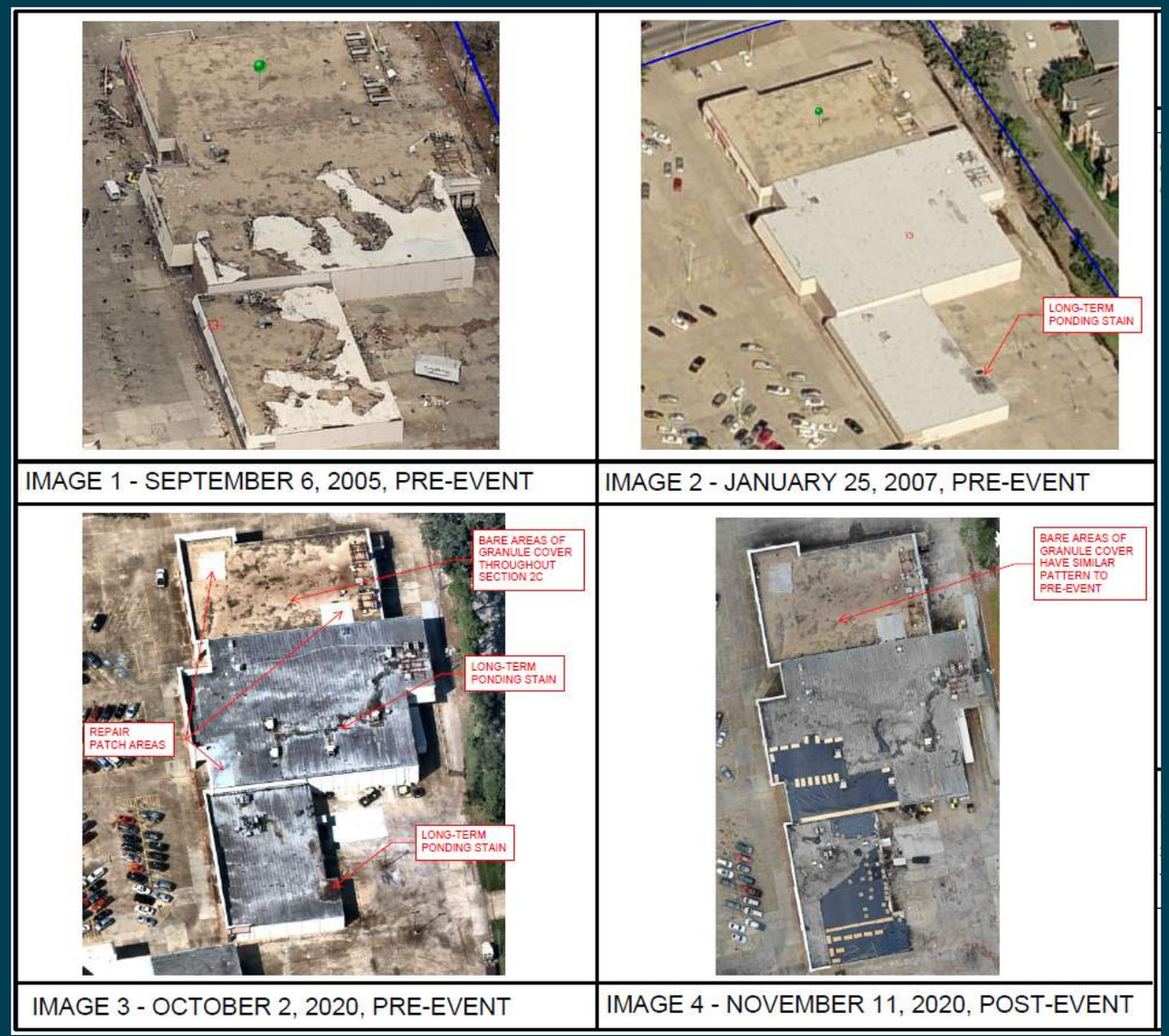


IMAGE 1 - SEPTEMBER 6, 2005, PRE-EVENT

IMAGE 2 - JANUARY 25, 2007, PRE-EVENT

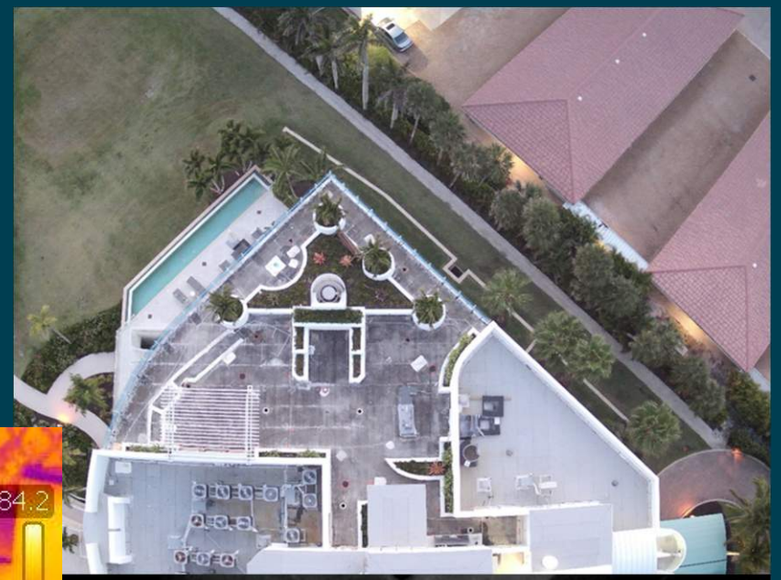
IMAGE 3 - OCTOBER 2, 2020, PRE-EVENT

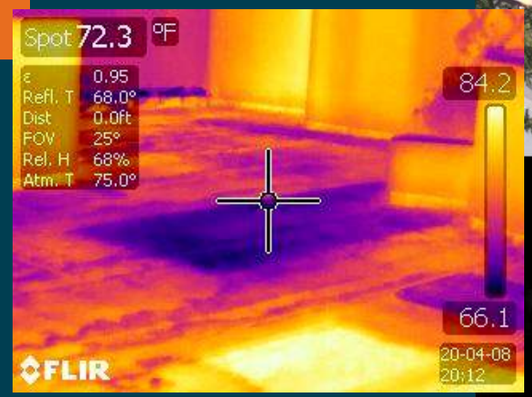
IMAGE 4 - NOVEMBER 11, 2020, POST-EVENT

HOW ENGINEERING CONSULTANTS CAN HELP RESOLVE CLAIMS

Non-Destructive Assessment

Thermal imaging to find trapped moisture

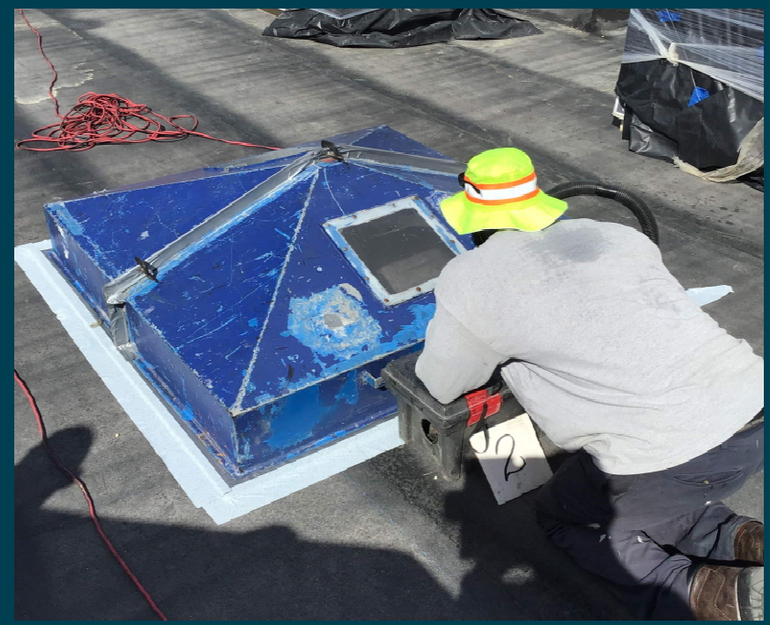




HOW ENGINEERING CONSULTANTS CAN HELP RESOLVE CLAIMS

Destructive Assessment

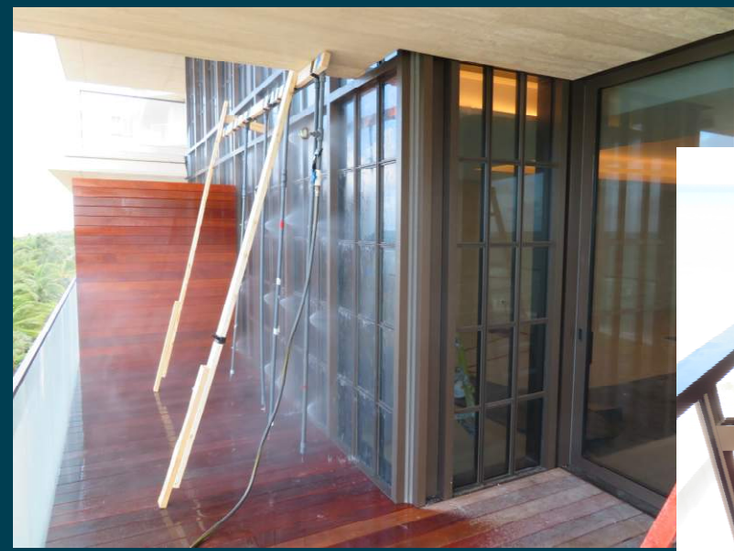
Verify material adhesion with **uplift testing**



HOW ENGINEERING CONSULTANTS CAN HELP RESOLVE CLAIMS

Destructive Assessment

Determine source of intrusion using **water testing**



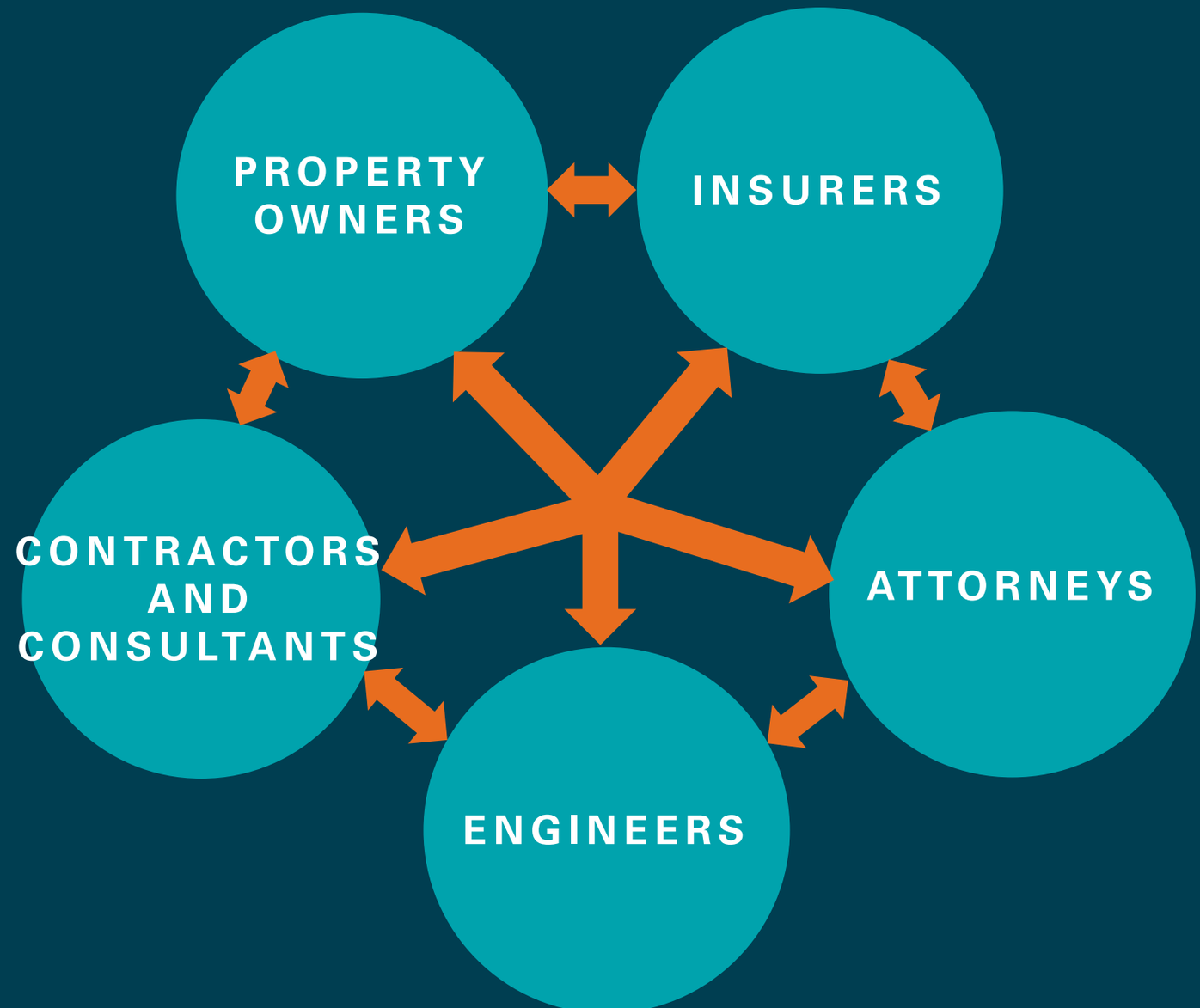
HOW ENGINEERING CONSULTANTS CAN HELP RESOLVE CLAIMS

Destructive Assessment

Open **probes** in the building to investigate

ALL PARTIES NEED TO WORK TOGETHER EARLY

- Avoid costly rework and reassessments
- Avoid time wasted on communication / coordination between parties



TYPICAL WATER DAMAGES UNRELATED TO AN EVENT

1. Inadequate **long-term maintenance** of the property, particularly to the building envelope. Properly documented maintenance/repair history is very helpful for disputes.
2. Cracks/separations that allow **long-term corrosion** of embedded steel and other metal building components.
3. Fenestrations **not properly secured** before hurricane.
4. Long-term fenestration moisture intrusion through **deteriorated gaskets, seals, etc**.
5. Condensation on ductwork due to normal HVAC operation.
6. Immediate **moisture damage** due to lack of power and increased humidity.
7. Failed **expansion joints** that allow water penetration to the interior.

COMMON ISSUES THAT COULD CAUSE CLAIM DENIALS

Inadequate long-term maintenance to the building envelope

COMMON ISSUES THAT COULD CAUSE CLAIM DENIALS

Corrosion to embedded steel from long-term cracks

COMMON ISSUES THAT COULD CAUSE CLAIM DENIALS

Fenestrations **not properly secured** before hurricane.

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COMMON ISSUES THAT COULD CAUSE CLAIM DENIALS

Fenestration
moisture intrusion
through gaskets,
seals, etc.

COMMON ISSUES THAT COULD CAUSE CLAIM DENIALS

Condensation on ductwork

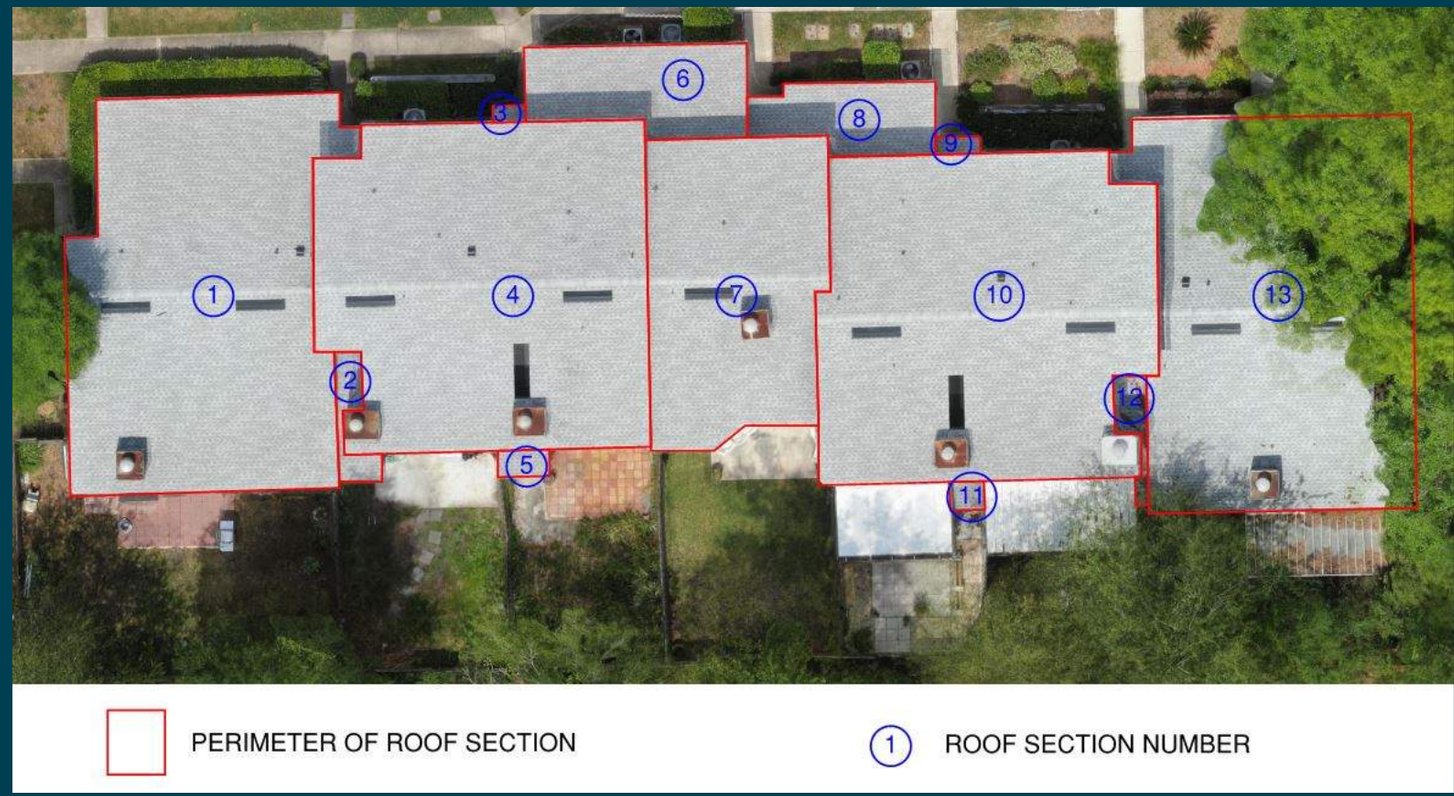
COMMON ISSUES THAT COULD CAUSE CLAIM DENIALS

Water intrusion from
failed expansion joint

CODE MYTHS AND TRUTHS

Remember, codes vary widely based on jurisdiction

- **Florida 25% Roof Rule**
  - How it applies to new vs. old roofs
  - Roof section vs. Roof system



CODE MYTHS AND TRUTHS

Remember, codes vary widely based on jurisdiction

- **Florida - Repairs vs Alteration Levels**
  - "Substantial structural damage"
  - Fenestrations aren't structural
  - Code requirements for repair vs replacement – current code or historical?
  - Mech/elec upgrades – how do they apply to code
- **Repairs: Betterments vs. Code Required Upgrade**
  - Make sure repairs are appropriately accounted for to avoid lengthy disputes about betterment vs. code requirement.

If anyone is making a claim based on "code requirements" – ***Trust BUT verify***

Conclusions and Q&A

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FLORIDA OFFICE LOCATIONS

With three offices in Florida, including Tampa, Fort Lauderdale and Miami, we can provide timely response to your requests.

In addition, we have **over 50 other offices** and **1,500 employees** that can meet your needs.

We are where you are.

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FOCUSED EFFORTS

HURRICANES

EARTHQUAKES

HAIL

PETROCHEMICAL EXPLOSION

OFFSHORE INDUSTRIAL

SOIL STABILITY

FIRE

INFRASTRUCTURE

Here’s how.

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