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ICRI 2023 Fall Convention

Marina Place Condominiums Rehabilitation – Water Intrusion and Structural Strengthening

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Learning Objectives

1. Introduction to Water Intrusion Assessments
2. Construction Documents
3. Adapting to Unforeseen Conditions
4. Proper Communication



Project Introduction

Location: Dunedin, Florida

Key Geographic Feature: On Gulf of Mexico

Building Description:

Constructed Circa 1983

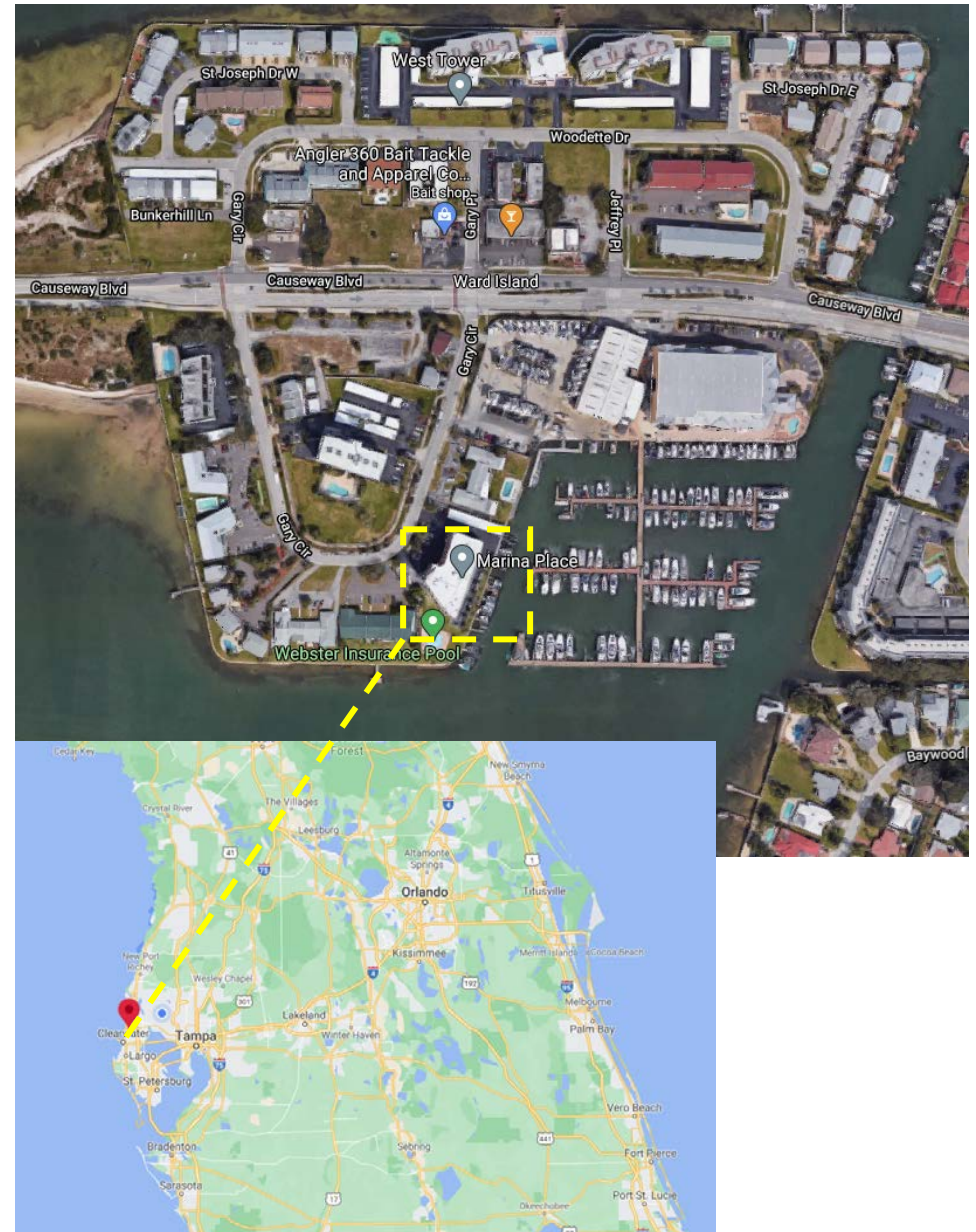
7-Story Condominium

Cast-in-Place Concrete Slabs

CMU Walls

Stucco Clad Façade

Punched Windows and Triple Sliders
at Balconies



Project Introduction



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Water Intrusion Assessment



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Background Information

Typical Living Room Layout



Background Information



Leak at Southeast Corner in Ceiling



Leak in Middle of Living Room in Ceiling



Water at Inside Face of Exterior CMU Wall

November 12, 2020, Day After Hurricane Eta made landfall in the Tampa Bay Area

Background Information

Exterior Issues

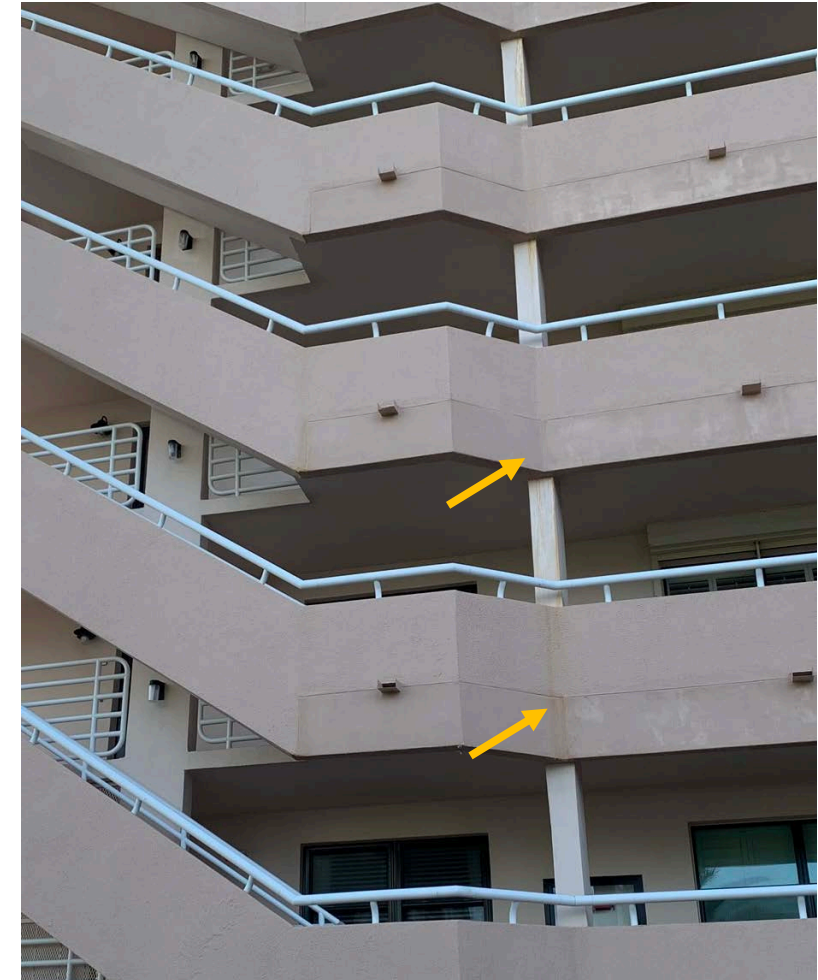
- Cracks and Spalls in CMU
- Stucco Cracks
- Blistering Wall Coating
Pockets of Water



Background Information

Exterior Issues

- Concrete Spalls Under Coating
- Rust Staining Under Railings/Parapet Walls



Field Work Planning

- Existing Document Review
- Initial Visual Assessment
- Tactile Review Utilizing a Boom Lift
- Destructive Testing
- Water Testing
- “Go with the Flow”
 - Be Prepared to Adapt on the Fly
 - Limited Time and Budget On-Site
 - Reprioritize Your Plan as Needed

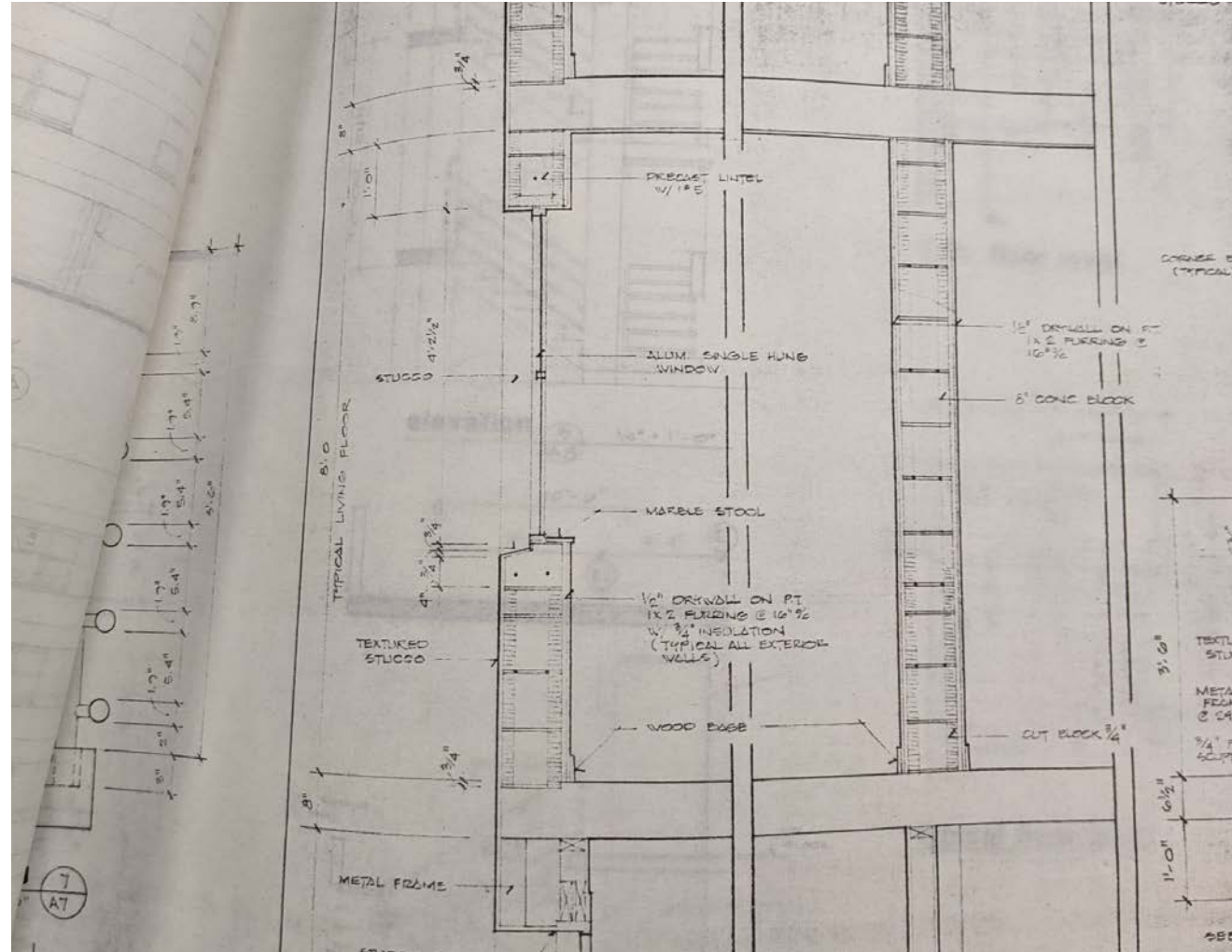


Field Work

1. On-site Document Review
2. Walk the Building Perimeter
3. Initial Observations - Interior
4. Initial Observations - Exterior
5. Water Testing
6. Destructive Testing



On-Site Document Review

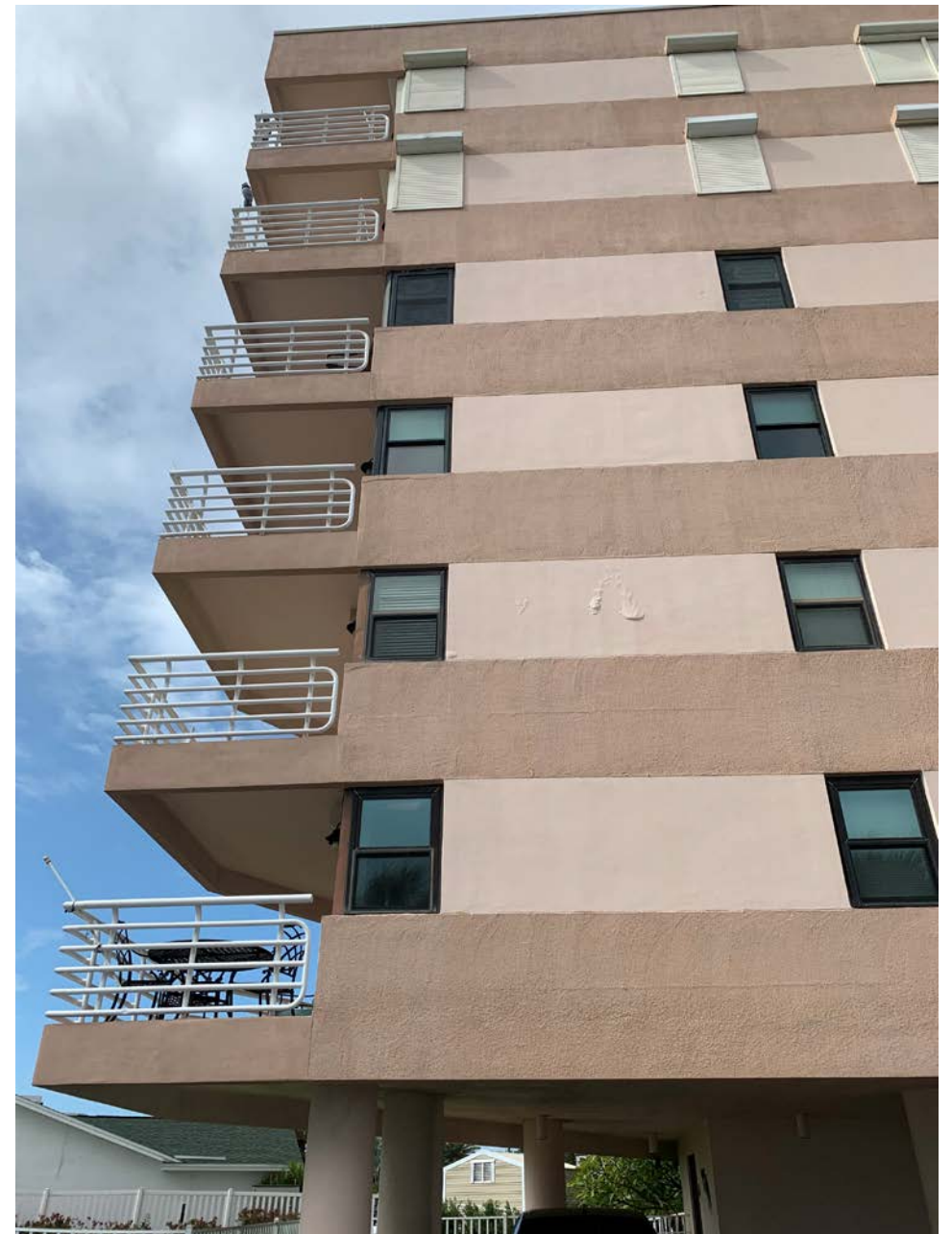


Walk the Building



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Walk the Building



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Initial Observations – Interior

What was pointed out by the client?



Initial Observations – Interior

Where are the signs of issues? Did the client miss anything?



Initial Observations – Interior



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Initial Observations – Interior



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Initial Observations – Interior



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Initial Observations – Interior



Did we learn anything that may affect our planned investigation?

Initial Observations – Exterior



Initial Observations – Exterior



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Initial Observations – Exterior



Did we learn anything that may affect our planned investigation?

Water Testing



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Water Testing



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Water Testing



Hurricane Eta



Water Testing

Water Testing



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Destructive Testing



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Destructive Testing



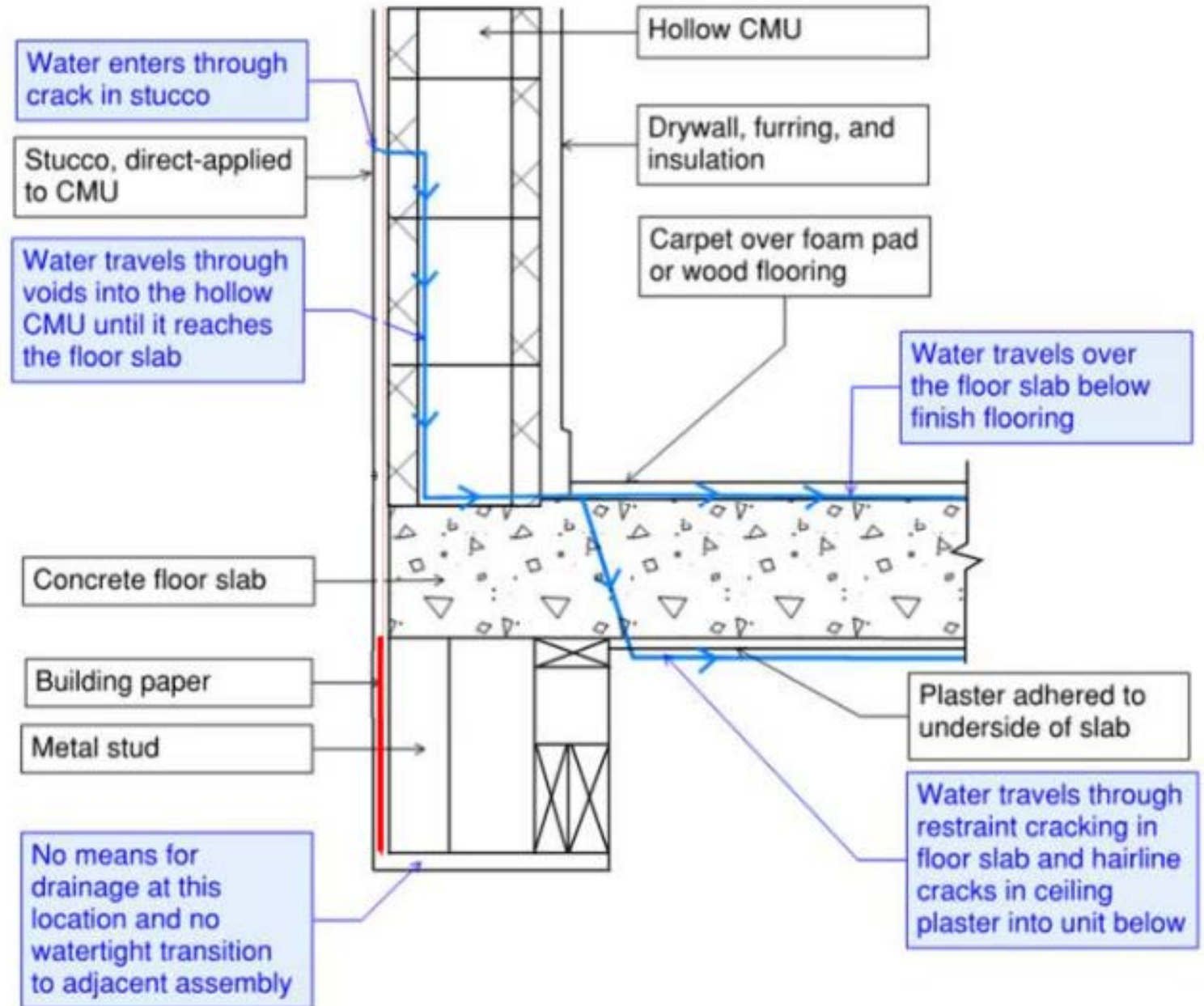
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Destructive Testing



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Findings



Destructive Testing



Destructive Testing



Destructive Testing



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Destructive Testing



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Preliminary Recommendations

- Remove and replace all cement plaster with 3-coat stucco
- Provide new drip flashing
- Replace all joint sealants
- Windows: TBD
- Roofing repairs
- Replace all guardrails
 - Phased
- Concrete spall repairs
- Epoxy injection of interior slabs



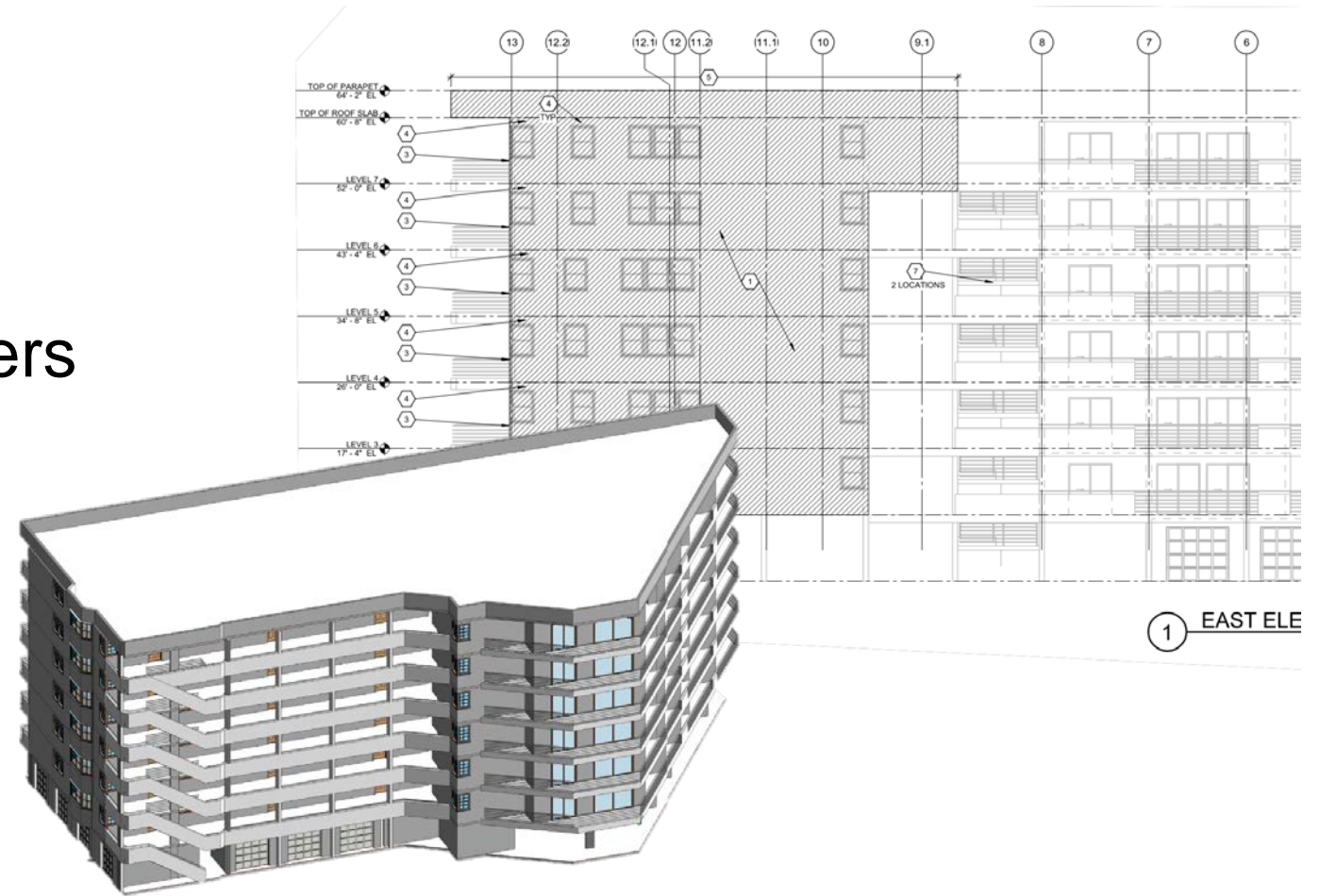
Assessment Tips

- Learn from Others' Mistakes
- Properly Scoped Investigation
- Persistence and Patience
- Listen (Client, residents, etc.)



Construction Documents

- Clearly define scope
- Project specific details
- Specify proper materials
 - Work with manufacturers
- Competitive bids
- Permitting



Construction Administration

- Submittal review
- Site visits
- Quality control
- Budget tracking
 - Pay application review
- Schedule tracking
- Punch list



Unforeseen Conditions



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Structural Strengthening



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Structural Strengthening



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Construction Complete



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Communication

- Meetings with the owner
- Main point of contact from each party
- Weekly construction meetings
 - Meeting minutes
- Construction Field reports



Teamwork



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Questions?

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