



# **Webinar: Avoid Costly Problems**

Assessing and Restoring Complex  
Building Envelope Systems

# Agenda

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## Building the Team for Project Success

**Chris Barger**

Senior Construction Consultant, CCA

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## Case Study at White Cliffs Condo II

**Glenn Grassi**

President, White Cliffs Community II Association

3

## Panel Discussion

**Eric Churchill**, Executive Vice President, SPS

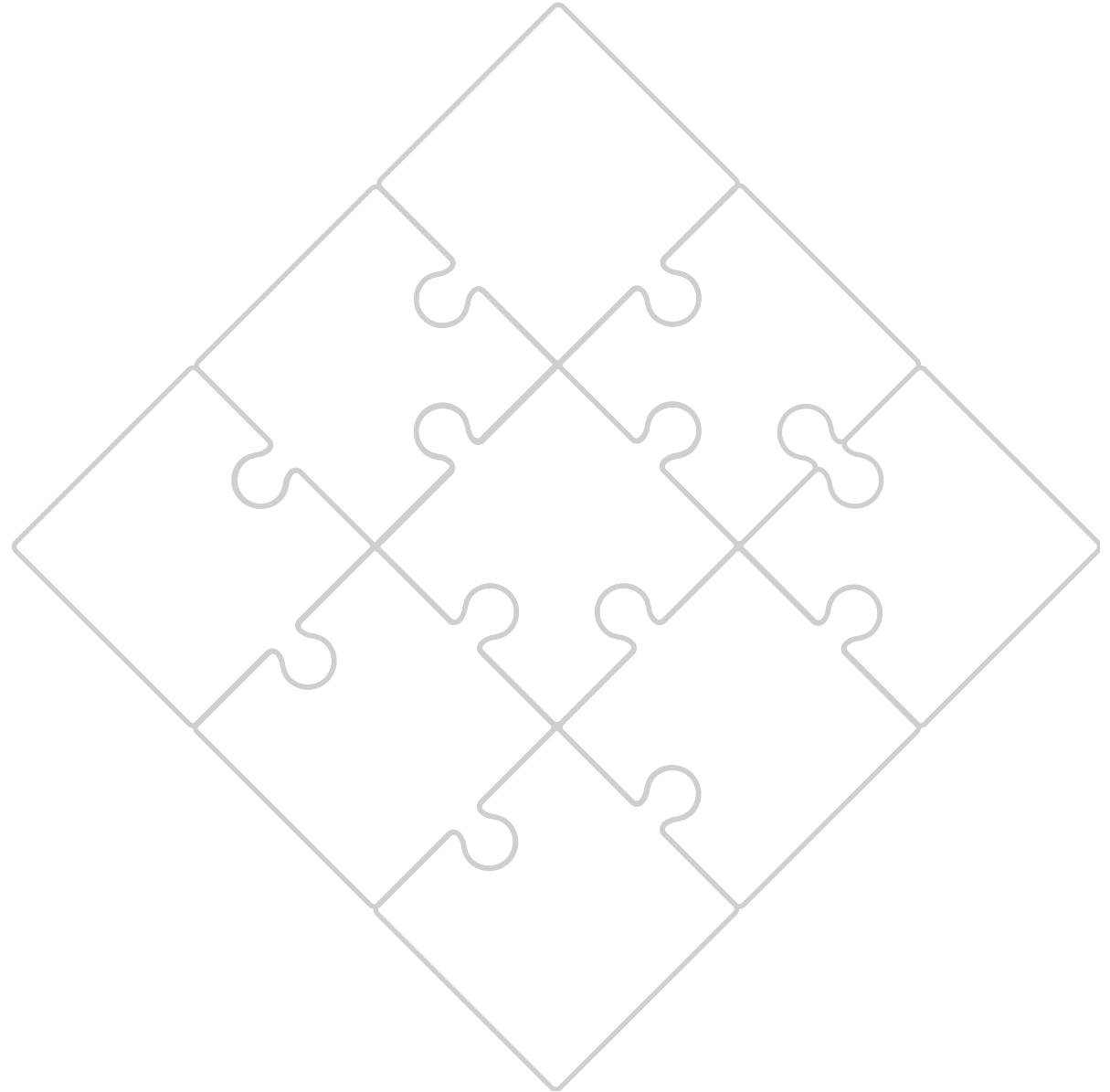
**Greg Hoyt**, Senior Structural Engineer, CCA

# Building the Team for Project Success

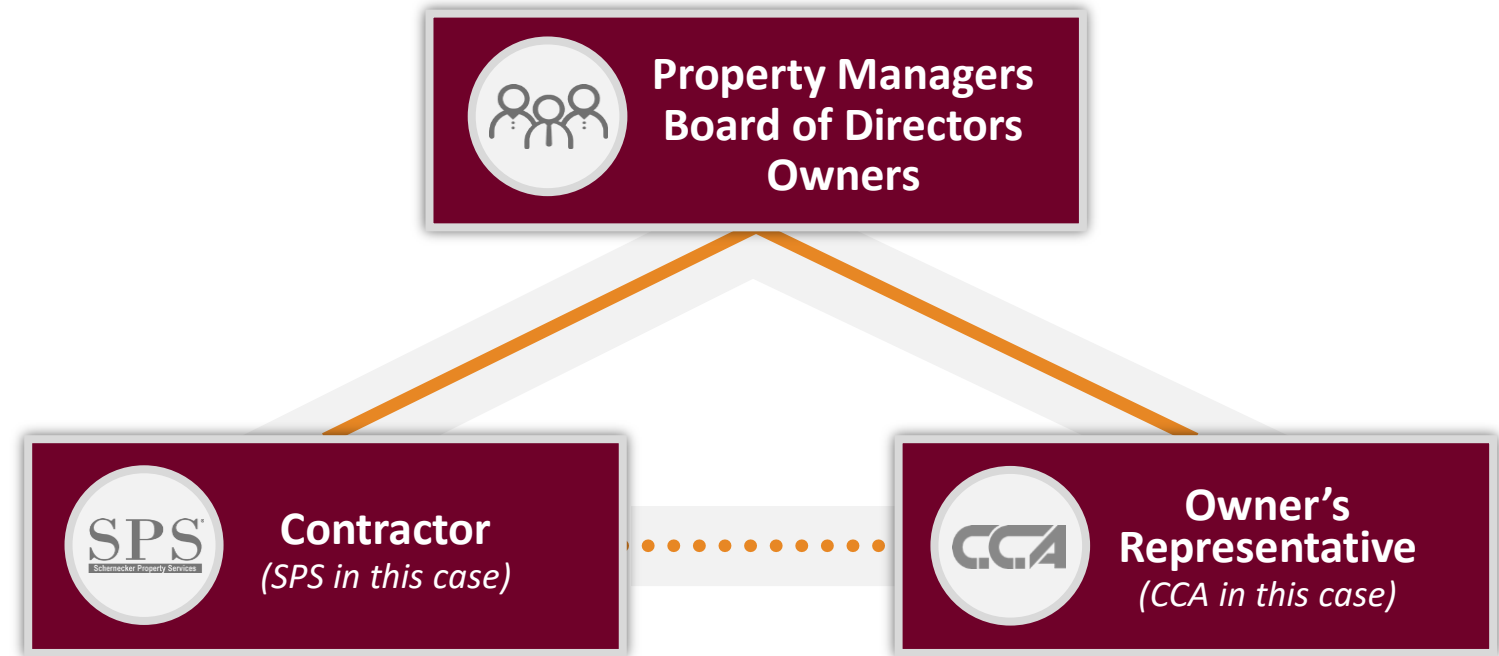
# The Project Team



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# Case Study at White Cliffs Condo II

# White Cliffs Country Club

Located in **Plymouth Massachusetts** at the edge of a 140 foot high cliff overlooking Cape Cod Bay and the Atlantic Ocean.

There are **367 condo units** divided into **6 condominium associations** controlled by separate condo boards





# Condominium II Association – Twin Woods

Condo II consists of **three buildings**,  
**8 units in each**

The units were constructed in 1985  
and are **35 years old**

Winter **storm winds can reach**  
**90 miles per hour** and challenge  
the integrity of the buildings



# Board of Trustees

Five-member Board of Trustees

Little or no experience in maintenance or construction

Interior ceiling and wall stains



# Original Construction 1985

- Poor quality
  - Roofing had no membrane or step flashing integrated with siding
  - Windows were not properly sized to the rough openings
  - Windows were not properly sealed or insulated
  - Deck attachments were not properly sealed and waterproofed





# All Things Change In Time

Over the years, **leaks have developed** causing severe interior damage

Window seals have **dried up and crumbled**

Window and door mechanisms have **corroded and rusted shut** due to the salt air

Nail heads securing the siding have **rusted away**



# Historical Mistakes

- 1995 a vinyl siding layer was place over the origin wood clap board
- 2003 a second layer of roof was added to the first without being integrated with the siding





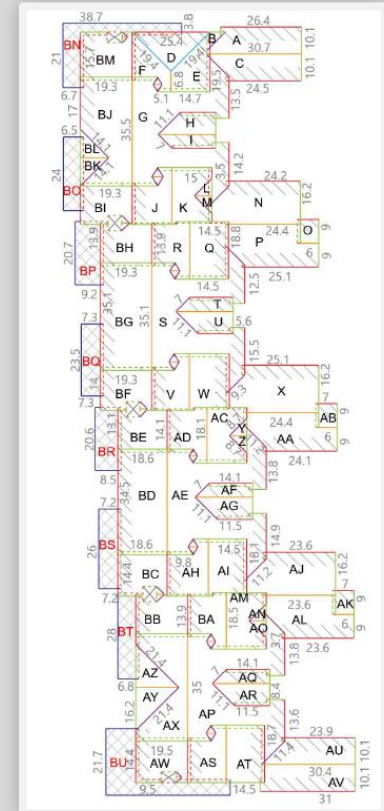
# Complex Roof Configuration

Each building has **65 individual roof sections**

There are **200+ edges of roof** that intersect walls and chimneys

The waterproof material for the roof must continue onto the walls

Adding the **second roof** at a cost of **\$95,000** did nothing to resolve the edge leaks



# Proper Integration Between Roof and Siding



Waterproof membrane must transition from horizontal to vertical surfaces and integrate with the wall's weather resistant barrier.

# Proper Sealing of Walls



Inside and outside wall corners are sealed with taped

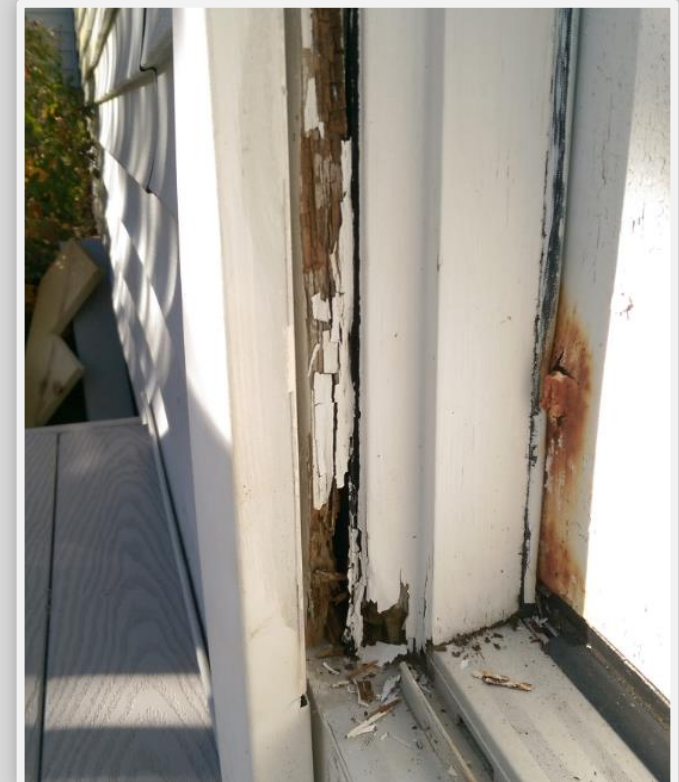
House wrap is applied as a continuous barrier around corners



# Structures Deteriorate Due to Poor Maintenance

Wooden deck structures have **deteriorated with age**

Steel doors are **constantly rusting**

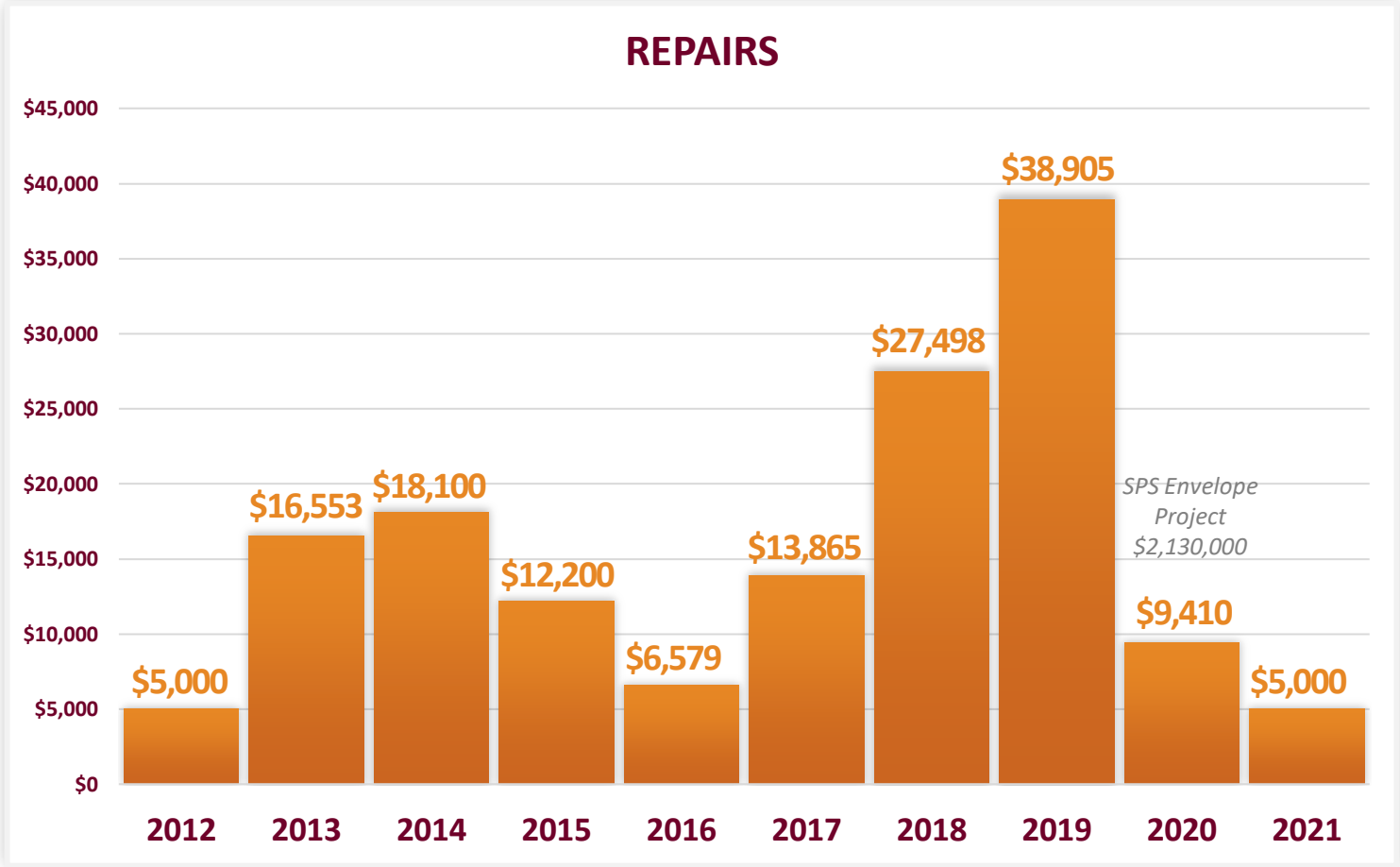


# Direct Impact on Homeowner

Ice dams are a constant cause of **interior ceiling and wall damage**



# Yearly Maintenance Costs Kept Raising



# Strategic Approach

- ✓ Research previous projects at White Cliffs
- ✓ Meet with SPS to discuss a step by step approach to the solution
- ✓ Meeting with unit owners and discuss the plan
- ✓ Secure bank financing
- ✓ Team up with an architectural engineering company, CCA
  - Permits, Scope of work definition, Price verification and Structural modification
- ✓ Bring in a legal team to review contracts
- ✓ Acquire builders risk insurance

# The Finished Product

## Modern materials are now the standard

- Windows are made entirely of vinyl and are energy efficient windows with stainless steel hinges
- Composite doors that will not rust
- High quality rubberized self-sticking roof underlayment provide a water-tight seal
- Composite decking and vinyl railings do not require painting
- All trim work is made of low maintenance composite material
- All screws holes are sealed with composite plugs
- Vinyl siding that is resistant to high winds

Not one exterior surface requires painting



# Panel Discussion

**How do we know we have a problem if  
we can't see it?**



# What if everything looks good?



**Looks good**



**Potential failure  
(thermographic imagery)**



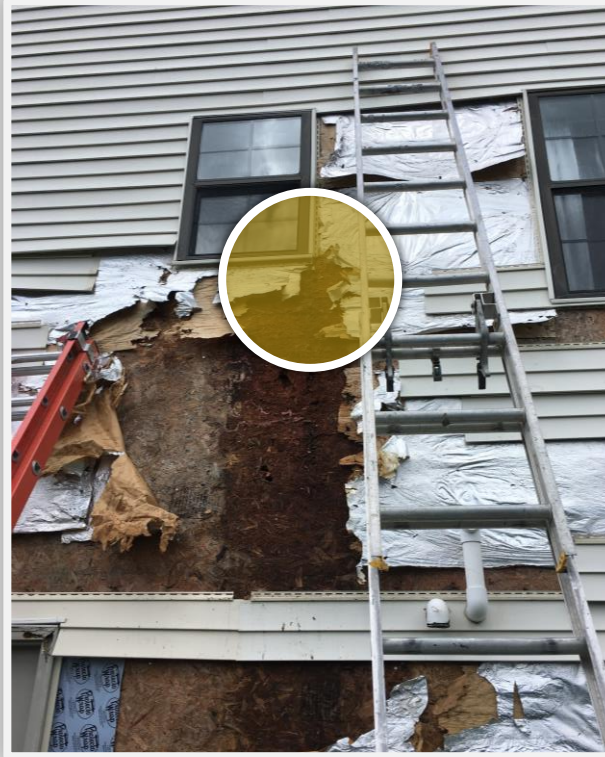
**Verified envelope failure**



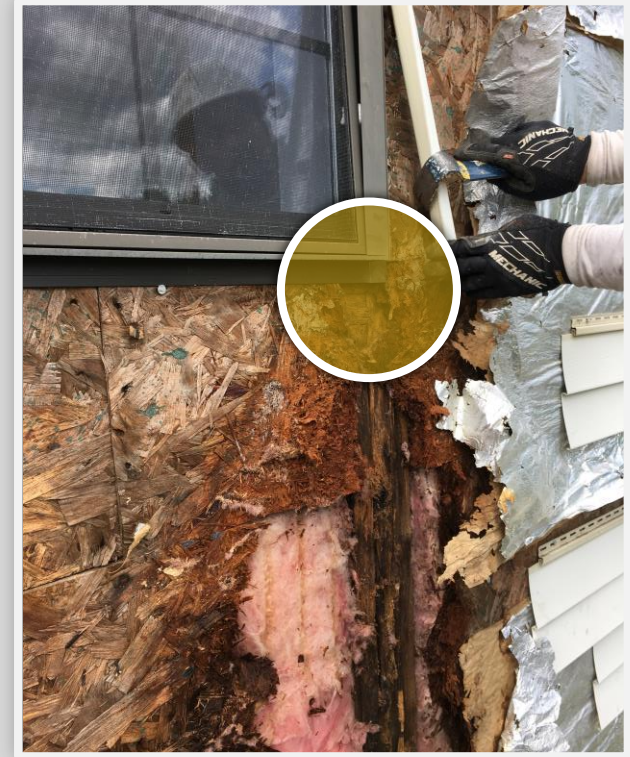
# How do we address ongoing failures?



Previous repair performed, Note: different shades of vinyl siding.



Major rot due to leaking window and lack of rough opening flashing.



Resulting sheathing and framing rot due to lack of flashing at window.

# What can happen if we do not investigate?





**What should we consider if we wanted to complete a project in phases?**

**What are the most common failures  
at the junction of the envelope and  
decks or balconies?**

**Why is it a good idea to have an engineer on the project?**

**What happens if we wait and build up reserves to pay for the work?**

**What's the best way to convince the  
condo community to buy into an  
envelope project?**

**What is the best way to bring homeowners, who are responsible for windows & doors, into funding the restoration project of the building?**



**How can we be sure the projected  
scope is accurate?**

# Questions?

# What Happens Next?



**Email with slides, recording, an Envelope Project Checklist**



**If you need hands-on support, our experts can help you evaluate your envelope challenges:**

- Roof, deck or balcony failures
- Water intrusion into the wall cavities
- Price verification and scope validation
- Bid process
- Construction management

**Contact John Tripp, Director of Business Development, CCA  
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