Preparing Buildings for Wildfire Resiliency in 2025 and Beyond

3C-REN Energy Code Connect Regional Forum

Tuesday, November 4, 2025 | 10:00am – 2:30pm

Agenda

10:00 – 10:20	**Sign-In & Introductions** *Danica Resurreccion, 3C-REN & Mindy Craig, BluePoint Planning*
10:20 – 10:35	**AB 130, N-29-25 & How the Energy Code Loves Home Hardening** *Andy Pease, In Balance Green Consulting*
10:35 – 10:50	**Fire Hardening for Existing Structures** *Ryan Cullinen, Allen Construction*
10:50 – 11:05	**How Wildfire-Resilient Home Design Impacts Firefighting Strategies** *Chris Olmstead, Santa Barbara County Fire Department*
11:05 – 11:20	**Back On Their Feet: Helping People Rebuild Amidst Disaster & Recovery** *Mike Horgan, Cairn Collaborative*
11:20 – 11:50	**Q&A / Panel Discussion**
11:50 – 12:00	**Closing Slides & Survey**
12:00 – 1:00	**Networking and Lunch**

Post-Forum Site Tour *

1:00 – 1:30	**Travel to Tour Venue** County of Santa Barbara Emergency Operations Center & Regional Fire Communications Center | ***4408 Cathedral Oaks Road, Santa Barbara, CA***
1:30 – 2:30	**Building Tour**

PREPARING BUILDINGS FOR WILDFIRE RESILIENCY IN 2025 AND BEYOND

3C-REN Energy Code Connect Regional Forum |Speaker Biographies

Andy Pease

Principal, Architect & LEED AP, In Balance Green Consulting

Andy, an Architect and LEED AP, is focused on optimizing green building strategies, including LEED certification and water conservation. She has helped dozens of clients through a green building process using integrated design, daylight and water use analysis and other strategies to maximize efficiency.

Ryan Cullinen

Principal & Certified Passive House Tradesperson, Allen Construction

Ryan, Principal at Allen Construction and Certified Passive House Tradesperson, has over 20 years of experience building high-performance homes. After his father lost his home in the 2017 Tubbs Fire, he became dedicated to advancing fire-resilient, energy-efficient design. He has helped homeowners rebuild after the Thomas Fire and debris flows and continues to share his expertise as a speaker and former board member of the Santa Barbara Contractors Association. He lives in Goleta with his family in their net-zero home.

Chris Olmstead

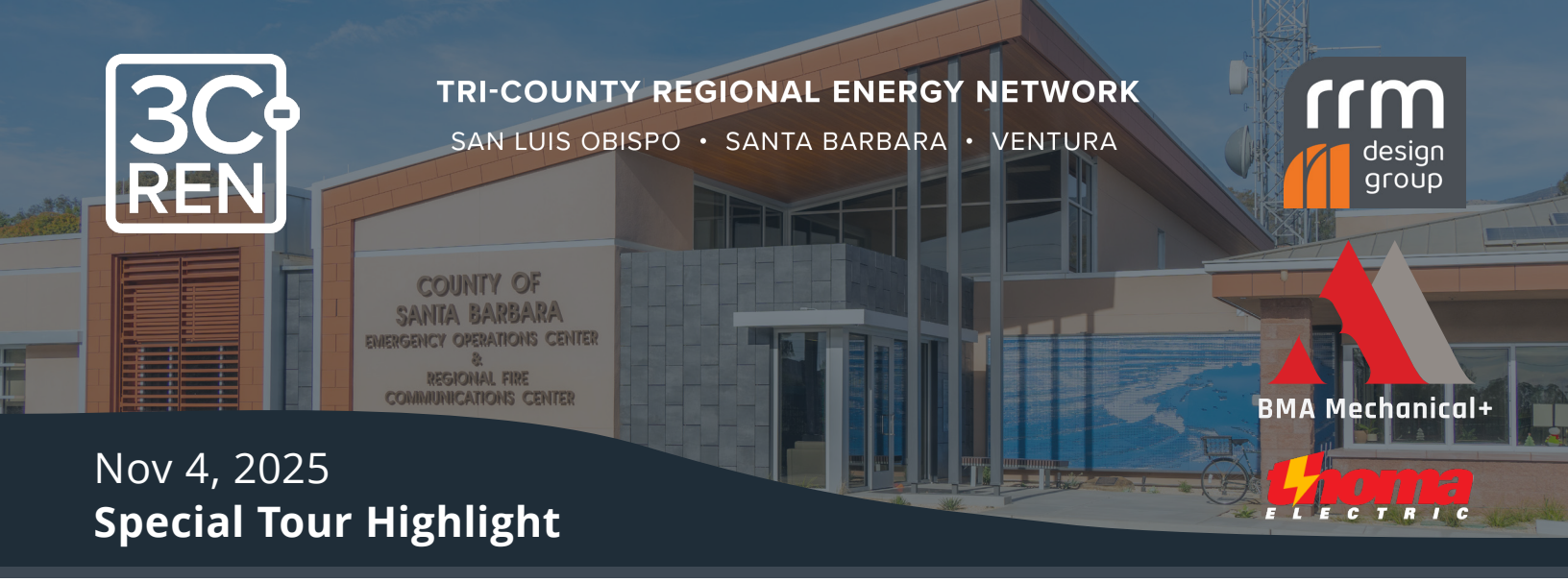
Fire Captain, Santa Barbara County Fire Department

Chris Olmstead, Fire Captain with the Santa Barbara County Fire Department, has over 30 years of experience in fire service and emergency response. As Supervising Captain for the Planning and Engineering Section, he leads fire code reviews and safety inspections to ensure compliant, resilient development. A licensed Fire Protection Engineer with a Master's from Cal Poly San Luis Obispo, Chris combines deep technical knowledge with decades of frontline experience to advance community fire safety.

Mike Horgan

Builder & Passive House Consultant, Cairn Collaborative

Mike is a licensed builder in California and Massachusetts, as well as a certified Passive House Consultant. Mike specializes in bringing building practices, methods, and theories to real life applications for architects, designers, and other builders. Specialties include life-cycle cost analysis, building envelope, and morequestions about the Energy Code from designers, builders, and enforcement agencies statewide.



TRI-COUNTY REGIONAL ENERGY NETWORK

SAN LUIS OBISPO • SANTA BARBARA • VENTURA

Nov 4, 2025

Special Tour Highlight

Engineering Resilience

Net Zero Dispatch Center with Wildfire Safety Features

Santa Barbara County Emergency Operations Center & Regional Fire Communications Facility

*A Santa Barbara County Zero-Net-Energy / Zero-Net-Carbon** building, this state-of-the-art regional dispatch hub sets a new benchmark for sustainability and resilience. Designed in alignment with the County's ***Zero Net Energy Ordinance***, this facility presented unique design challenges, successfully addressed through strong collaboration and a deep understanding of project goals by the design and engineering teams.

The project expanded the existing facility with 10,676 SF of seamlessly integrated new construction to create a secure, high-performance communications center that serves fire, and emergency services. The expansion unifies all seven county fire departments and emergency medical services into one centralized dispatch hub.

Key Spaces

- Main dispatch floor for 24/7 operations.
- Supervisor offices, training rooms, and overflow areas for surge capacity.
- Joint Information Center (JIC) for major incident command and coordination.
- Dedicated server and call center rooms designed for resilience and comfort.

Features

- Backup UPS power to maintain operations during outages.
- Fully redundant HVAC system for reliability and critical cooling.

Wildfire Safety

- Rockwool exterior insulation for exceptional thermal performance and fire resilience.
- Advanced needlepoint bipolar ionization filtration for cleaner indoor air during wildfire events.
- Outside-air shutoff to prevent smoke infiltration.

Net Zero Design

- All-electric building; no fossil fuel systems.
- 288 kW solar PV array integrated into shade structures and parking canopies.
- Battery backup for long-term reliability.

Energy Efficiency

- Daylighting strategies, including tubular daylighting devices, or "Solatubes", reduce lighting loads and support energy goals.
- Flexible mechanical systems optimize energy use and maintain comfort.

Project Teams

Several teams contributed to the project's success, with these firms playing a leading role in delivering the ZNE/ZNC outcomes:

- RRM Design Group, *RRMdesign.com*
- BMA Mechanical+, *BMAslo.com*
- Thoma Electric, *ThomaElectric.com*

**Field Verification In Process*

Net Zero & Energy Efficiency Highlights

Daylighting & Glare Management
The architect conducted daylight studies to design a solution using tubular day-lighting devices, or "Solatubes" and strategic window placement, minimizing glare and providing abundant natural light.

This creates a healthier, more comfortable workspace for 24/7 dispatch operations. This is an innovative improvement over the typically dark, windowless dispatch centers.

Envelope & Internal Loads
High-performance insulation reduces energy loss, while intensive equipment loads and 24/7 operations drove energy demand. Precise architecture–engineering coordination ensured accurate load modeling to meet net-zero energy goals.

All-Electric Design
The facility embraces an all-electric approach, eliminating natural gas and diesel generators to achieve true net-zero carbon performance. This presented an exciting opportunity to innovate.

The team leveraged advanced energy modeling and creative system strategies to make it happen, proving that even high-load emergency service buildings can operate sustainably.

To make the most of available space, the team designed shade structures and parking canopies into energy-producing assets.

Battery Backup
Battery systems sizing required special considerations to account for the planned capacity degradation over the warrantied service life. The design response was intentional battery system oversizing to account for this.

Photovoltaic (PV) Array Sizing
Through detailed energy modeling, the team was able to predict the estimated energy usage which allowed the sizing of this system. The team sized a solar PV system capable of offsetting an annual load of approximately 456,750 kWh.

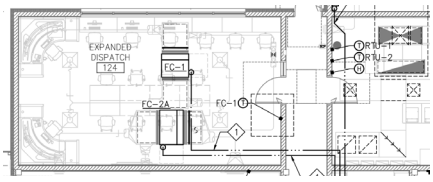
The result: a 288 kW array designed for maximum efficiency, accounting for conversion factors and site conditions.

Wildfire & Emergency Safety Features

Fire-Resistant Envelope
Wildfire resilience is built into the facility's very fabric. The exterior envelope uses non-combustible Rockwool insulation behind a terracotta rain screen, preventing ember intrusion and fire spread. This is especially important in high fire severity zones. The terracotta cladding is both fire-resistant and sustainable, chosen to match the existing building and provide long-term durability.

Redundant Cooling
The server room features two large, 15-ton HVAC package units for 100% redundancy, ensuring uninterrupted cooling for critical equipment even during emergencies.

Reliable Power & Airflow
The Uninterruptible Power Supply (UPS) room is tempered with booster fan coils and designed with hot and cold aisles to optimize airflow and equipment reliability.



Flexible Space Planning
Overflow dispatch and JIC areas allow rapid scaling of operations during major wildfire or disaster events, supporting both routine and crisis communications.

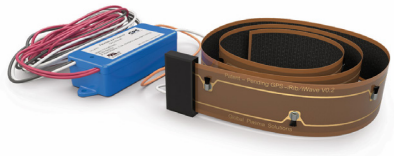
Smoke Protection
A manually controlled rooftop switch lets staff shut off outside air intake during periods of hazardous outdoor air quality as in the event of a wildfire and the associated smoky conditions those can bring. This controllability reduces the impact of a hazardous outdoor air quality event on the overall indoor air quality of the building.

The building exhaust system also continues to run to maintain minimum ventilation.

Air Filtatrion Technology
Every fan coil unit is equipped with ***GPS needlepoint bipolar ionization***.

This advanced system releases charged ions that bind to airborne particles, causing them to cluster together for easier capture by filters.

The result: Cleaner, healthier indoor air quality at all times and increased effective removal of residual smoke infiltration during wildfire events.



Thank you for attending the tour and taking the time to learn about the features that make this project truly exceptional!

rrm design group
BMA Mechanical+
thoma ELECTRIC

Preparing Buildings for Wildfire Resiliency in 2025 and Beyond

November 4, 2025

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TRI-COUNTY
REGIONAL ENERGY NETWORK

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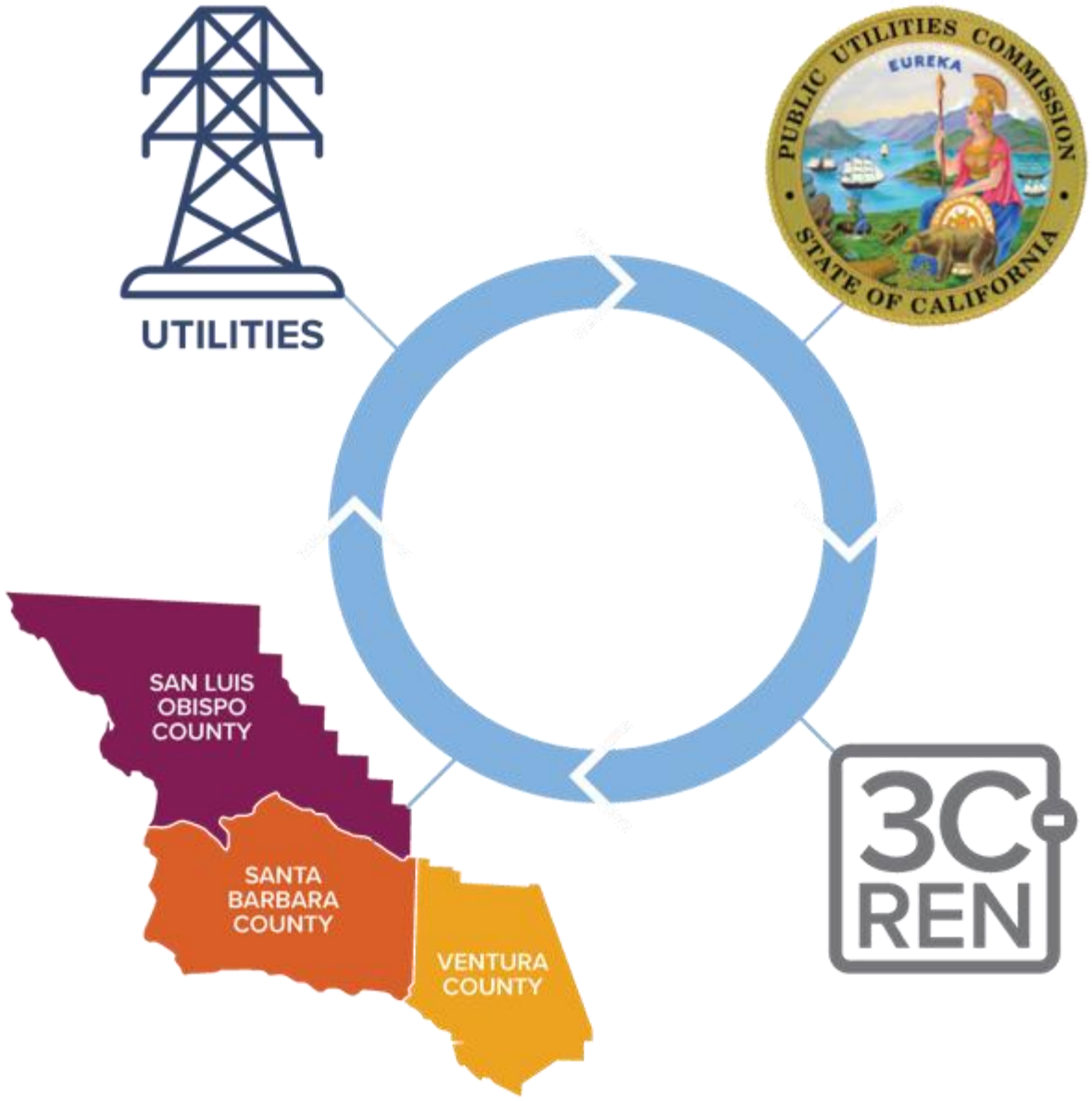
Thomas Fire (2017)
Photo Credits to CAPS Media



Tri-County Regional Energy Network

3C-REN is a collaboration between the tri-counties

Our programs reduce energy use for a more sustainable, equitable and economically vibrant Central Coast

Our free services are funded via the CPUC, bringing ratepayer dollars back to the region

Our Services

Incentives

HOME ENERGY SAVINGS

3c-ren.org/for-residents
3c-ren.org/multifamily

COMMERCIAL ENERGY SAVINGS

3c-ren.org/commercial

Contractors can enroll at
3c-ren.org/contractors

Training

BUILDING PERFORMANCE TRAINING

3c-ren.org/events
3c-ren.org/building

ENERGY CODE CONNECT

3c-ren.org/code

View past trainings at
3c-ren.org/on-demand

Technical Assistance

AGRICULTURE ENERGY SOLUTIONS

3c-ren.org/agriculture

ENERGY ASSURANCE SERVICES

3c-ren.org/assurance

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Forum Moderator

Mindy Craig

BluePoint Planning

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Andy Pease

In Balance Green Consulting

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AB 130, N-29-25 and How the Energy Code Loves Home Hardening

Andy Pease, AIA, LEED AP BD+C – In Balance Green Consulting

November 4, 2025

California Building Standards – Title 24

Part 1 - CA Administrative Code
Part 2 - CA Building Code
Part 2.5 - CA Residential Code
Part 3 - CA Electrical Code
Part 4 - CA Mechanical Code
Part 5 - CA Plumbing Code
Part 6 - CA Energy Code
Part 7 - CA Wildland-Urban Interface Code
Part 8 - CA Historical Building Code
Part 9 - CA Fire Code
Part 10 - CA Existing Building Code
Part 11 - CA Green Building Standards Code
Part 12 - CA Referenced Standards Code

“AB 130 Housing” and the Building Code

Background and Drivers

- California facing a “housing crisis of availability and affordability”
- Changes to building codes could be limiting housing development
- Introduced as AB 306, then folded into AB 130 which covers several building, planning and CEQA legislative changes to support housing.

California LEGISLATIVE INFORMATION

3C REN

AB 130: Pause on the 2028 Code Cycle

2025 Code goes into effect January 1, 2026!

Residential Standards	**2025 Code** Effective 1/1/2026 (No 2028 Residential Code)		**2031 Code** Effective 1/1/2032
Nonresidential Standards	**2025 Code** Effective 1/1/2026	**2028 Code** Effective 1/1/2029	**2031 Code** Effective 1/1/2032

**2028 Code…? May depend on substance and breadth of allowed changes*

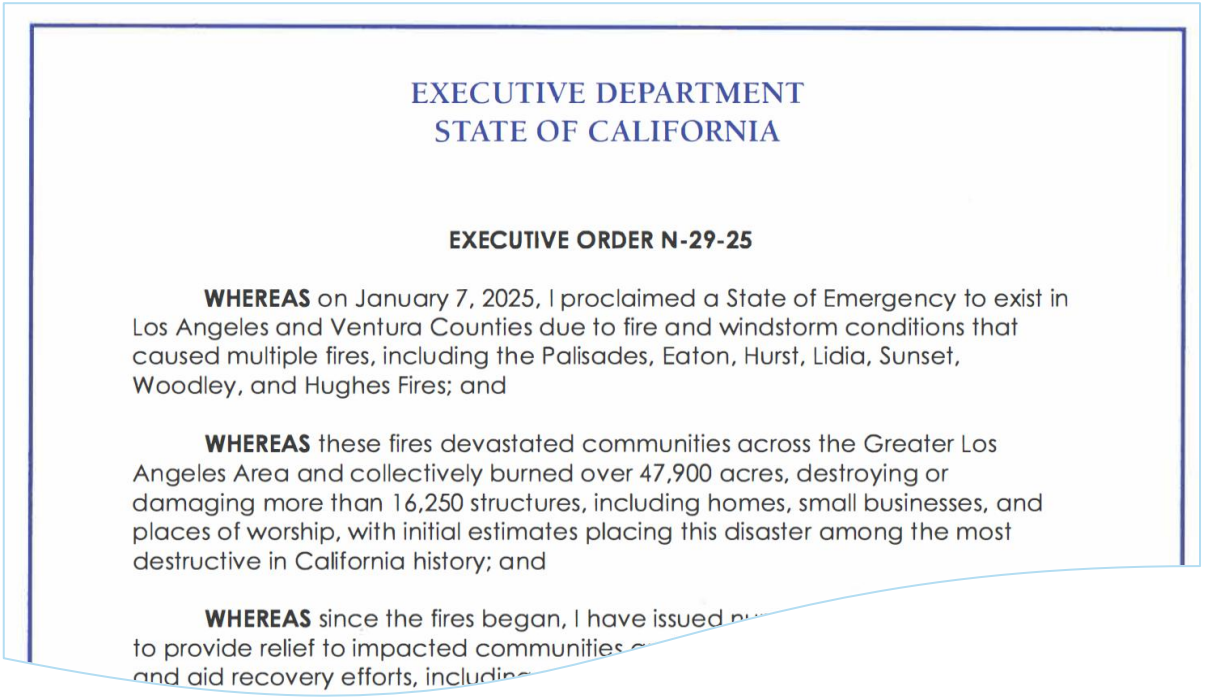
Notes and Exceptions

- Includes all R occupancies, including multi-family, SF, townhomes, etc.*
- No substantive changes for CA for 6 years; administrative clarifications are acceptable
- No local reach codes
  - Exceptions for carry-over of existing reach codes, in place by 9/30/2025
  - Local amendment should "…incentivize all-electric construction and comply with federal law in permitting mixed-fuel residential construction."*
- Exceptions for State Fire Marshal Amendments
- Exceptions for alignment with national model codes

**BSC guidance memo*

N-29-25

- Specific to LA fire rebuilds
- No PV/BESS, but solar ready
- Continue use of 2022 codes (except fire code)
- Limits on zoning restrictions and environmental review requirements



EXECUTIVE DEPARTMENT
STATE OF CALIFORNIA

EXECUTIVE ORDER N-29-25

WHEREAS on January 7, 2025, I proclaimed a State of Emergency to exist in Los Angeles and Ventura Counties due to fire and windstorm conditions that caused multiple fires, including the Palisades, Eaton, Hurst, Lidia, Sunset, Woodley, and Hughes Fires; and

WHEREAS these fires devastated communities across the Greater Los Angeles Area and collectively burned over 47,900 acres, destroying or damaging more than 16,250 structures, including homes, small businesses, and places of worship, with initial estimates placing this disaster among the most destructive in California history; and

WHEREAS since the fires began, I have issued
to provide relief to impacted communities
and aid recovery efforts, includin

AB 368 Energy: building standards: passive house standards.

- Signed into law Oct. 1, 2025
- Directs CEC to:
  - Evaluate the cost-effectiveness of passive house energy efficiency standards
  - Evaluate passive house models compared to Title 24 Part 6
  - Report by July 1, 2028
- Seeing connections with Passive House, Title 24 Energy Code & WUI

The Passive House Network

3C REN

Energy Code & Home Hardening

1. **Air Sealing**: overall envelope strategies to reduce cooling and heating loads AND resist smoke, embers and fire
2. **Windows**: Types for home hardening and energy code allowance for high fire-severity zones
3. **Outside Air**: Occupant control if air quality is bad
4. **Attics and crawl spaces:** Vented and Unvented construction assemblies
5. **Roof-mounted PV panels**: placement and spacing for fire access and appropriate home hardening roof materials and details
6. **Battery systems**: appropriate locations, evolution of battery chemistry to reduce fire hazards

Large voids and narrow cavities can be filled with expanding foam.

Sill Plate Air-sealed at Floor

Insulation and Air Sealing

The Energy Code requires better Insulation, better *installation* and better *air tightness*

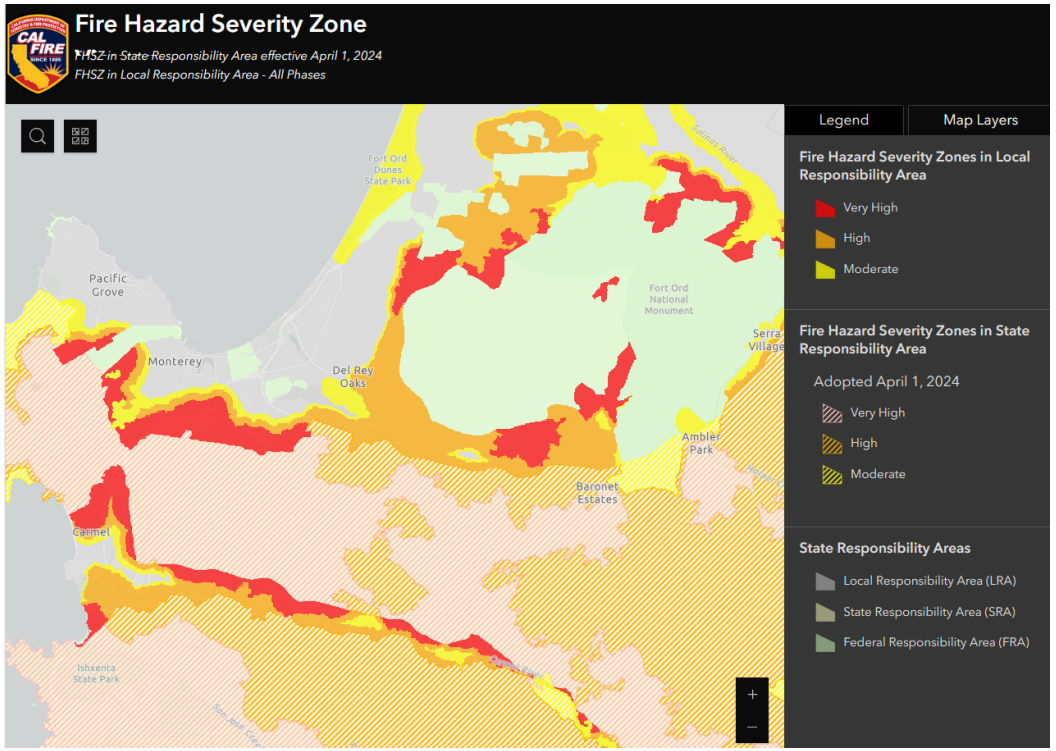
- New Insulation Materials and Standardized Testing
- Higher R-values
- Quality Insulation Installation (QII) w/ 3rd-party verification
- Verification of Air Sealing

Verification: Airtightness Testing

- Verified by a HERS (ECC) Rater
- ACH50 = Air changes / hour at 50 pascals
- Level to achieve:
  - Typ. install: 6-10 ACH50
  - T24: Assumes 5.0 ACH50
  - **T24 Credit: Below 5.0 ACH50**
  - PH: 0.6 ACH50

Windows: Energy Code Exception for WUI

- Energy Code:
  - Mandatory maximum U-factors for windows is U-0.40
  - Concern: Many fire-rated windows have U-factors of U-0.42 or more
- New Energy Code Exception to Mandatory U-factor:
  - In Fire Hazard Severity Zones or WUI Fire Areas, windows and skylights can have higher U-factor



Compliant Windows and Glass Doors

Residential Options:

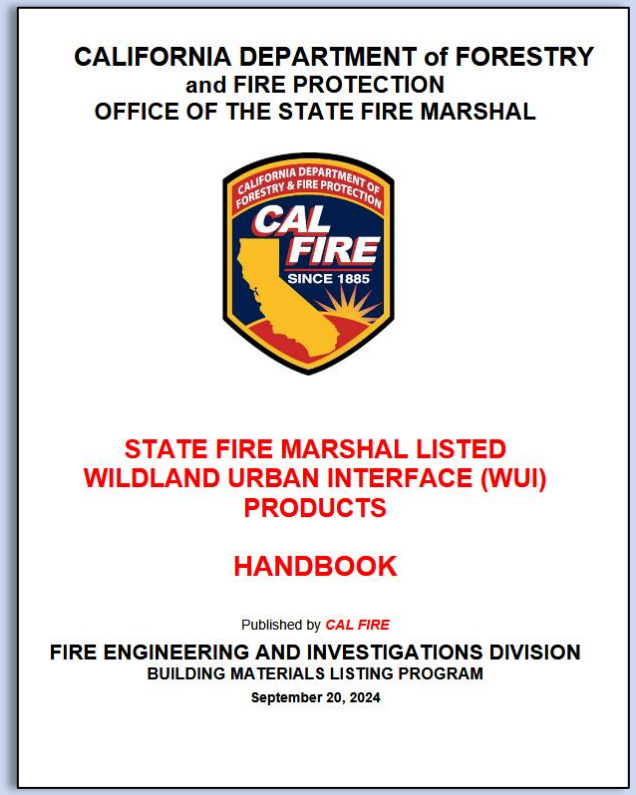
- Dual and Triple Paned Units – w/ thermally broken steel frames:
  - Fire-rated laminated glass
  - Tempered glass with inboard and outboard panes tempered

Commercial Options:

- ¼” Wired Glass in fire-rated assembly
- ¼” Tempered Glass in fire-rated assembly

Thermally Broken Steel Frame for Residential Construction

RIVIERABRONZE
Distinctive Design for Luxury Living



CALIFORNIA DEPARTMENT of FORESTRY and FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL

STATE FIRE MARSHAL LISTED
WILDLAND URBAN INTERFACE (WUI)
PRODUCTS

HANDBOOK

Published by CAL FIRE
FIRE ENGINEERING AND INVESTIGATIONS DIVISION
BUILDING MATERIALS LISTING PROGRAM
September 20, 2024

Energy code requires outside air, and off

- As building envelopes get tighter, the energy code requires mechanical ventilation for outside air
- Outside air fans must have an “off” switch for occupants
- Provide easy, clear access to ventilation controls

“Fresh Air System: Leave on unless outside air is very poor”

Credit: Home Ventilating Institute

In conclusion: Leverage the Energy Code to support Home Hardening!

Thank you!

More info: **3c-ren.org**

Check out the Energy Code Coach!

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Ryan Cullinen

Allen Construction

FIRE HARDENING
FOR EXISTING STRUCTURES

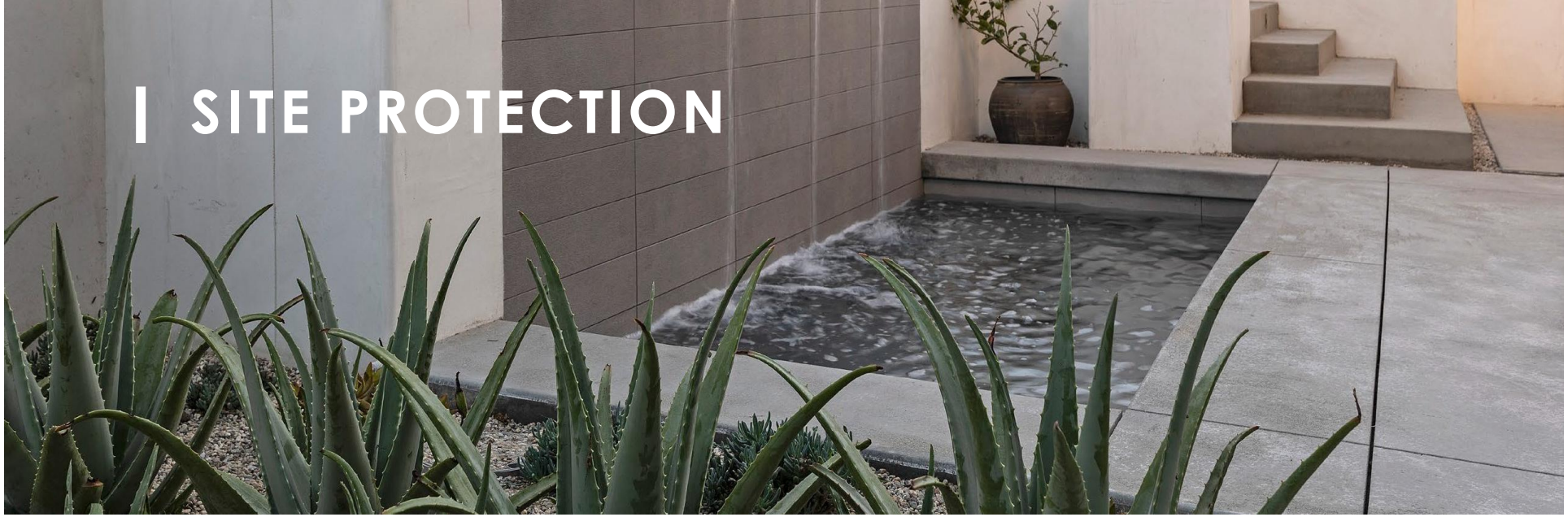
SITE PROTECTION & LIFE SAFETY

STRUCTURE PROTECTION

EXTRA PRECAUTIONS

INSURANCE

ALLEN



CREATE DEFENSIBLE SPACE AROUND YOUR HOME

CREATE ZONES OF DEFENSIBLE SPACE

- Zone 0 (0–5 feet): Clear vegetation, use non-combustible materials like gravel.
- Zone 1 (5–30 feet): Thin vegetation, remove dead plants, space trees ten feet apart.
- Zone 2 (30–100 feet): Reduce vegetation density and create fire breaks.

REMOVE OR RELOCATE COMBUSTIBLE MATERIALS

- Move Firewood: Keep it at least 30 feet away from the home.
- Store Safely: Keep flammable items away from the house.

CONSIDER ACCESS AND EGRESS POINTS

EGRESS FOR RESIDENTS

- Secondary Exits: Have at least two exits from the home.
- Clear Pathways: Keep exits and windows free from obstructions.
- Emergency Ladders: Use ladders for quick escape from upper stories.

LIGHTING AND VISIBILITY

- Proper Lighting: Illuminate driveways and paths for safety at night.
- Clear Signage: Use reflective, visible signs for easy navigation by emergency personnel.

EMERGENCY PLANS

- Evacuation Plan: Have a clear plan for family members and pets.
- Practice Drills: Regularly practice evacuation drills to ensure readiness.

STRUCTURE PROTECTION

THINK LIKE AN EMBER

FIRE-RESISTANT VENTS & EAVES

- Remove entry points: Eliminate crawlspace and attic venting whenever possible.
- Mesh Screens: Install 1/8-inch mesh screens or fire-rated vents to block embers.
- Eave Enclosures: Enclose eaves and soffits to prevent ember entry.

DECKS & FENCING

- Avoid any combustible fencing or shading touching the home.
- Consider upgrading to non-combustible materials
- Class A rated decking over foil backed joist tape.
- Enclose elevated decks with non-combustible skirting or fire mesh to keep embers from entering below.

STRUCTURE PROTECTION

ROOFS

- Gutter Guards: Install metal covers or guards to prevent debris buildup.
- Materials: Upgrade to Class A-rated roofing with fire-resistant underlayment, sealed edges: Metal, Tile, Slate, Fiberglass asphalt shingles, Select synthetic shake- DaVinci, CeDur
- Install Chimney Caps/Spark Arresters: Prevent embers from entering and escaping with fireproof caps and arresters.

DOORS & WINDOWS

- All glass should be dual pane and have one layer of tempered glass.
- Consider upgrading to non-combustible frames: Use fire-rated steel, aluminum or fiberglass doors that resist heat.
- Seal Gaps and apply Weatherstripping: Use fire-rated seals to prevent ember infiltration, including garage door thresholds.

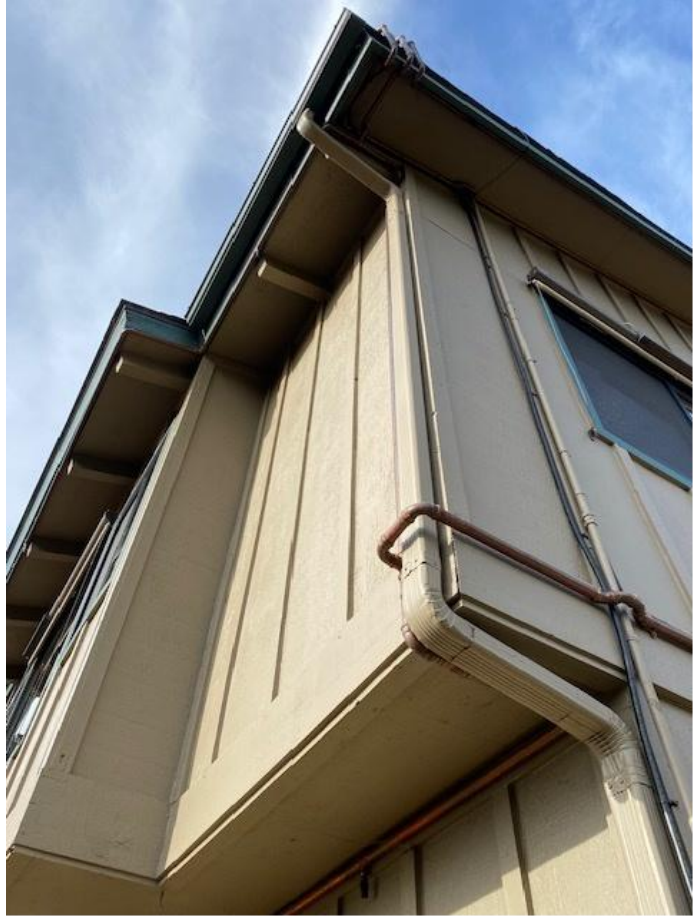
STRUCTURE PROTECTION

SIDING, TRIM, FASCIA

- Consider upgrading to non-combustible materials
- Stucco, Fiber Cement, Metal, Stone/Brick Veneer: Provides a strong barrier against heat and embers.
- Select Class A wood options: Hewn- pressure treated cedar | Hardwood- Ipe, Cumaru, Jatoba | Select Shou Sugi Ban
- Seal all penetrations and openings to avoid ember intrusion

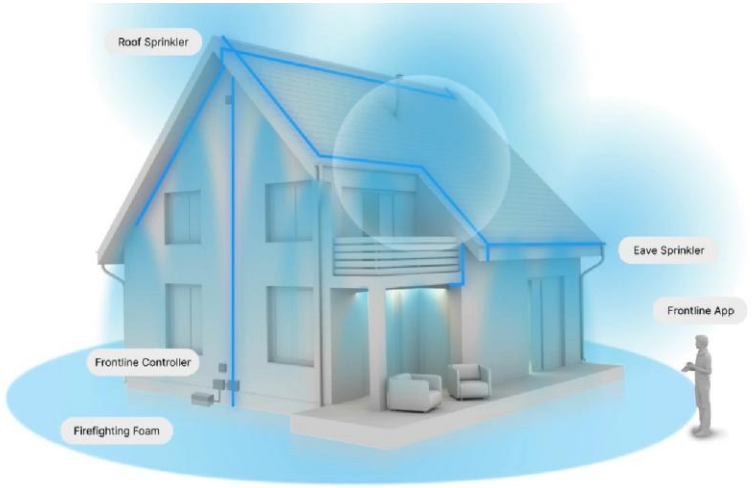
| EXTRA PRECAUTIONS

SUPPLIMENTARY SYSTEMS AND PROTECTION



WILDFIRE SPRINKLER SYSTEMS

- Eave sprayers
- Roof rotors
- Class A foam
- Pool tie-in compatible
- Generator and battery compatible
- App controlled with local fire monitoring



NEW TECHNOLOGIES

ACCOUSTIC FIRE SUPPRESSION SYSTEMS

- Infrasound waves eliminate oxygen in air, suppressing flames
- Runs on battery back up
- Autonomous and App controlled
- No water or chemical damage on structure

SAFETY BUNKERS AND STORAGE VAULTS

PHOTO 1, Below: Tractor arm with auger grinds away at sandstone creating the cave. Cave profile follows the white painted line, based on a fixed laser beam set up outside the cave.

PHOTO 2: Shown above is the lift equipment used for dimensional verification and material installations. Walls from the initial excavation are stabilized with welded-wire-mesh and Shotcrete (similar to building an upside down swimming pool). The wall mounted vent tubes exhaust potential harmful gases

PHOTO 3, Below: Welded-wire-mesh is installed over spaced drain strips. Drain strips lead to weeps and French Drains under the cave floor.

PHOTO 4, Right: This photo shows installation of the cave's first shaping layer. Shotcrete is blown through the 6x6 mesh to fill the void between the mesh and the drilled wall.

PHOTO 5, Right: Water proofing is applied over the initial concrete skin prior to installation of the structural shell. The three remaining layers are 2" foam insulation, a protective Shotcrete layer, and a three coat plaster.

ALLEN

| EXTRA PRECAUTIONS

FIRE SHUTTERS & COATINGS

- Protect exposed large openings with fire rated shutter systems.
- Apply intumescent paint to exterior wood components that must remain.

OCCUPANT VENTILATION SYSTEMS

- Bring filtered fresh air into home while sealed to weather extended smoke events
- Whole home or spot Energy Recovery Ventilation (ERV)

BACKUP POWER SYSTEMS

- Solar power systems: Battery storage systems
- Generators: Gasoline, propane, natural gas, and inverter options exist and may be considered based on the specifics of your home.
- Portable Power Stations

UPDATE YOUR INSURANCE

INCLUDE CHANGES IN PROPERTY VALUE

- Improvements: Ensure renovations, improvements, new structures, and expensive electronics or purchases are covered.
- Building codes: New, stricter building codes may require more expensive rebuilding after a fire, so policy should be updated to cover this.

MONITOR CHANGING REGULATIONS

- Coverage regulations: Laws may require defensible space and fire- resistant materials, impacting coverage terms.
- Geographic location: Coverage needs to be updated based on proximity to wildfire zones due to California's frequent fires.

MONITOR THE CALIFORNIA "FAIR" PLAN

- Changing costs and undetermined permanence: Designed as a safety net, it may not be a long-term or comprehensive option.
- Coverage limits: Stated coverage limits are $3M for single family homes.

TAKEAWAYS

TAKE STEPS TO BE PREPARED

INEVITABILITY OF FIRE & WIND

AVOID “FIRE AMNESIA”

FIRE-READY HOMES = RESILIENT COMMUNITIES


FOR MORE INFORMATION AND RESOURCES,
PLEASE VISIT OUR WEBSITE:
BUILDALLEN.COM/FIRE-RESILIENCE
ALLEN
ALLEN
CONSTRUCTION
BUILDALLEN.COM | LICENSE #503300

Captain Chris Olmstead

Santa Barbara County Fire Department

Facing the Flames

How Wildfire-Resilient Home Design Impacts Firefighting Strategies

Introduction:

Chris Olmstead, Captain
Santa Barbara County Fire Department
Professional Engineer; Fire Protection Engineering

Increased Wildland-Urban Interface (WUI):

- Fire Behavior
- Structure Triage
- Smoke and Ember Impacts
- Homeowner Action
- Evacuation Problems
- Defensible Space

Wildfire Threats in Southern California

- Steep terrain, dry fuels, hot/dry climate
- Santa Ana Winds: fast, dry downslope winds spreading fire quickly
- Sundowner Winds: Blow from the Santa Ynez Mountains in the evening. Push fires downslope into costal neighborhoods starting in the evening and into the nighttime.
- WUI: wildland-urban interface expanding

Whittier Fire July 8, 2017

Firefighter Priorities in WUI Operations

- Life safety (civilian & firefighters)
- Incident stabilization
- Property conservation
- Environmental conservation

Woolsey Fire November 2018

What Firefighters Face

- High heat, exhaustion, wind-driven fire
- Spot fires from embers
- Delays: narrow roads, power lines, limited water
- Often must triage which homes to protect

The Effects of Smoke

🚒 **Firefighters Risks**:

- Low visibility, endangers navigation, equipment use
- Masks can’t fully eliminate toxic exposure during long shifts.
- Disrupts aerial operations and radio communications.

🏡 **Civilians**:

- Poor air quality can trigger asthma, heart problems, and respiratory distress, and long-term health issues
- Can infiltrate homes despite closed windows
- Smoke can precede fire by miles

✅ **Evacuate Early**: to avoid dangerous smoke and free up resources for structure defense.

Thomas Fire 2017

Structure Triage – FIRESCOPE Definitions

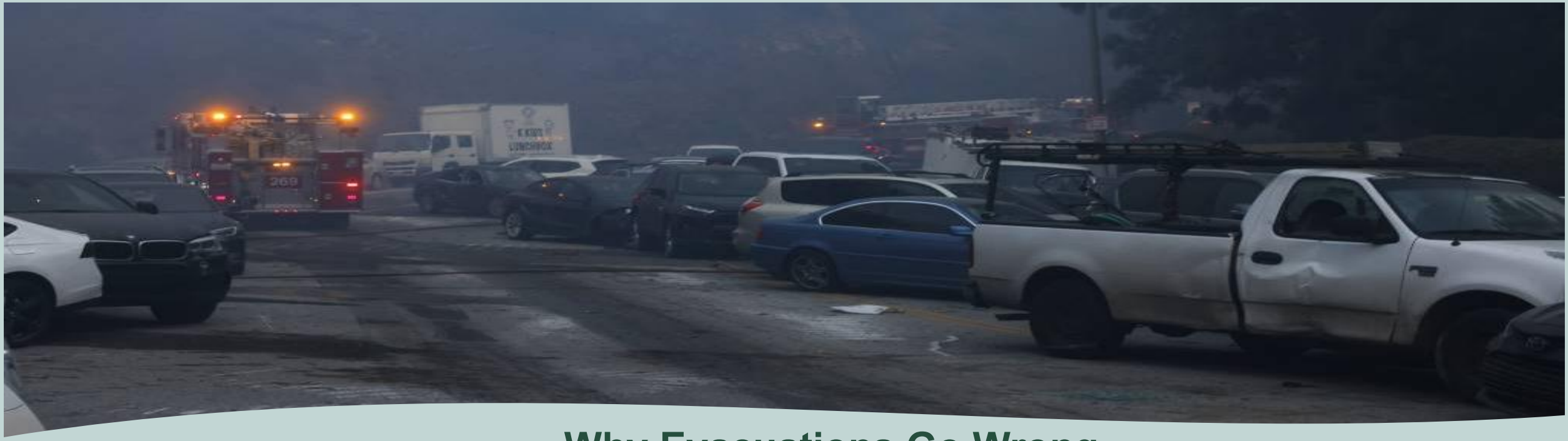
1. Defensible – Prep & Hold:
   - Home can be saved with firefighter intervention
   - Requires clearing vegetation, deploying hose lines
   - Firefighters will prepare and stay to protect

2. Defensible – Standalone:
   - Home has sufficient defensible space and hardened structure
   - Can likely survive without firefighter presence
   - Fire crews may monitor

3. Non-Defensible – Rescue Drive-By:
   - unsafe to defend

FIRESCOPE Structure Protection Tactics

- **Bump & Run**: Rapid structure defense ahead of fast-moving fire. Quick water application, then move to next home.
- **Anchor & Hold**: Establish a strong line. Use water from hydrants or tanks to protect structures and stop fire spread.
- **Mobile Attack**: Engine crews patrol and suppress small fires and embers on the move. Common during ember storm conditions.
- **Tactical Patrol**: Used after the flame front passes. Crews put out hot spots and flare ups to prevent re-ignition.



Evacuation Problems & Blocked Roads

Why Evacuations Go Wrong:

- Late evacuations = traffic jams and blocked fire access
- Fire engines and bulldozers can’t maneuver around obstacles
- Panicked drivers abandoned cars in roadways
- Residents may block fire access roads trying to re-enter area
- Locked gates, poor signage
- Life-threatening delays

Evacuation Problems & Blocked Roads

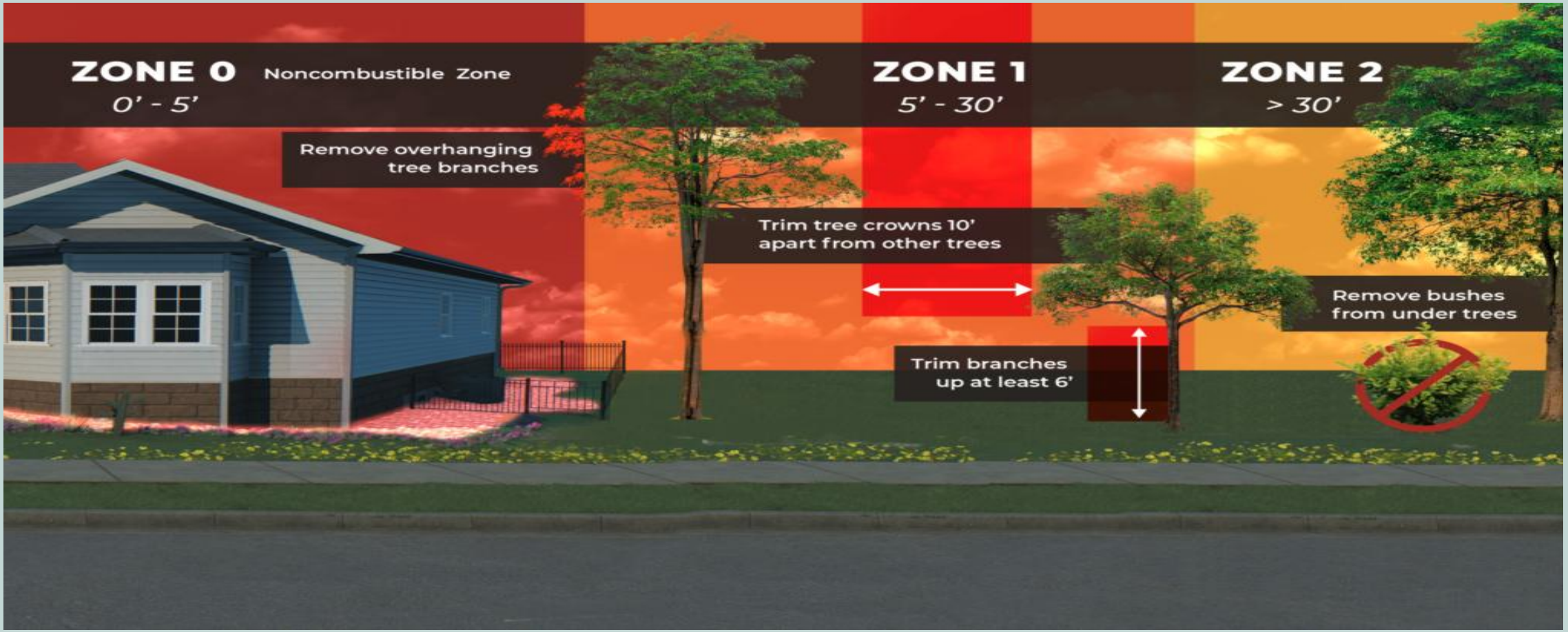
Homeowner Actions:

- Know at least two evacuation routes
- Keep driveways 12 ft wide with 16 ft clearance
- Post reflective address signs
- Plan evacuations for pets, elderly, & disabled residents
- Once evacuated stay out until give the all clear to return

Elements of Wildfire-Resilient Design

Homeowner Actions:

- **Ignition-resistant materials**: Class A roofing, noncombustible siding
- **Ember protection**: Vents, eaves, decks, and windows
- **Defensible space**: 0-5 ft noncombustible zone
- **Topography awareness**: Avoid upslope exposure zones



Defensible Space Zones

- Zone 0 (0-5 ft): no flammables
- Zone 1 (5-30 ft): trim, clear
- Zone 2 (30-100+ ft): mow, thin
- Zone 3 (Access Zone): 10 ft both sides of access way

How Homeowners Can Help

- 🌿 **Maintain defensible space -** Especially Zone 0
- 🏠 **Harden your home**: Class A roofs, ember-proof vents, metal fencing
- 🚪 **Keep access clear**: Wide, unobstructed driveways
- 📍 **Visible addresses** for easy identification
- 🧳 **Evacuate early:** stay informed, don’t wait until it’s too late
- 💧 **Provide water sources** if off-grid: tanks, pumps
- 👥 **Get involved**: Firewise, Fire Safe Council


00:00:00
PREPARED
CAL FIRE

Final Thoughts

- Firefighters are prepared—but can’t save every home
- Your preparation and actions matters
- Together we build safer communities

Mike Horgan

Cairn Collaborative Design Build

Back On Their Feet: Helping People ReBuild Amidst Trauma, PTSD, and Recovery

November 4, 2025

Agenda

- Understanding PTSD, trauma, and the impact on decision making and cognitive functions

How We Help:

- Communication
- Trust
- Structure
- Setting expectations and transparency
- Summary and next steps

Zack Pasma - Architectural Designer Cairn Collab DB
Caroline Dunn - Licensed Architect - Cairn Collab DB
Michael Horgan - Licensed Contractor - Cairn Collab DB

Understanding PTSD and Trauma

What is PTSD and Trauma?

Post-Traumatic Stress Disorder (PTSD) arises after experiencing or witnessing a *single* traumatic event (different from CPTSD) which then causes persistent distress; flashbacks; avoidance related to the event; irritability; depression; mood changes; and heightened anxiety.

The Impact on Rational Thinking & Cognitive Function

Trauma triggers heightened emotional responses and impairs brain's prefrontal cortex area responsible for logical reasoning, leading to difficulty in processing information and making clear decisions.

Decision-Making Challenges

Victims often face overwhelming feelings, memory disruptions, and hypervigilance that can (and will) cause decision fatigue, making even simple choices feel exhausting or impossible. The prefrontal cortex is impaired for a time period.

How We Help:

- Empowering through communication
- Instilling trust
- Setting expectations & transparency
- Strictly structuring design process
- Managing decision fatigue

COMMUNICATION

Empowering Through Communication

Listeners First -

Begin every interaction by prioritizing listening to understand the homeowner's trauma and needs, establishing a safe space for open dialogue, prioritizing empathy and understanding their emotional and practical needs being put before design decisions. As the helpers, it may be more important to *not* be heard early on.

Honesty -

Provide clear, consistent, honest updates about design and construction processes to build confidence and reduce anxiety even if - *especially if* - you do not know.

It takes years and years and years to build up trust, and only suspicion to lose it all. These people did not have the years to build the trust.

Empower -

Build survivor's trust in themselves again through empathy, respect, and patience in order to empower their own decision-making confidence.

Authenticity Matters -

Maintain genuine empathy and honesty to foster connection, showing homeowners they are valued far beyond their project.

Earn the Right to Be Heard -

Demonstrate professionalism and reliability to gain respect, ensuring homeowners trust your guidance and decisions.

Remember: No one is doing this by choice. They didn't want to replace their home. So, this designing and building of a new home is not necessarily an exciting thing...

TRUST

Setting Expectations & Transparency

Intentional Expectation Setting

- Set realistic timelines to avoid false hope or disappointment.
- Communicate potential challenges upfront to prepare homeowners.
- Avoid overpromising results; promise to figure it out.
- Regularly update homeowners on progress and changes.

Full Transparency

- Share all relevant information honestly, including costs and delays.
- Encourage open dialogue to address concerns promptly - “with you...”
- Demonstrate authenticity by admitting uncertainties when they arise.
- Build trust by consistently delivering on communicated commitments.

STRUCTURE

Clarity Is Kindness

Clear Processes for Zoning; Design; Permitting; Construction.

Clear Deliverables for Phases

- Pre-Design & Planning (1)
- Schematic and Conceptual Planning (2)
- Zoning (3)
- Design Development (4)
- Permitting (5)
- We do not deviate from this process. There has been enough deviation in their lives.

“With You....”

- You are not alone. We are here to support, keep the plan moving forward, pick you back up, and succeed.

Managing Decision Fatigue

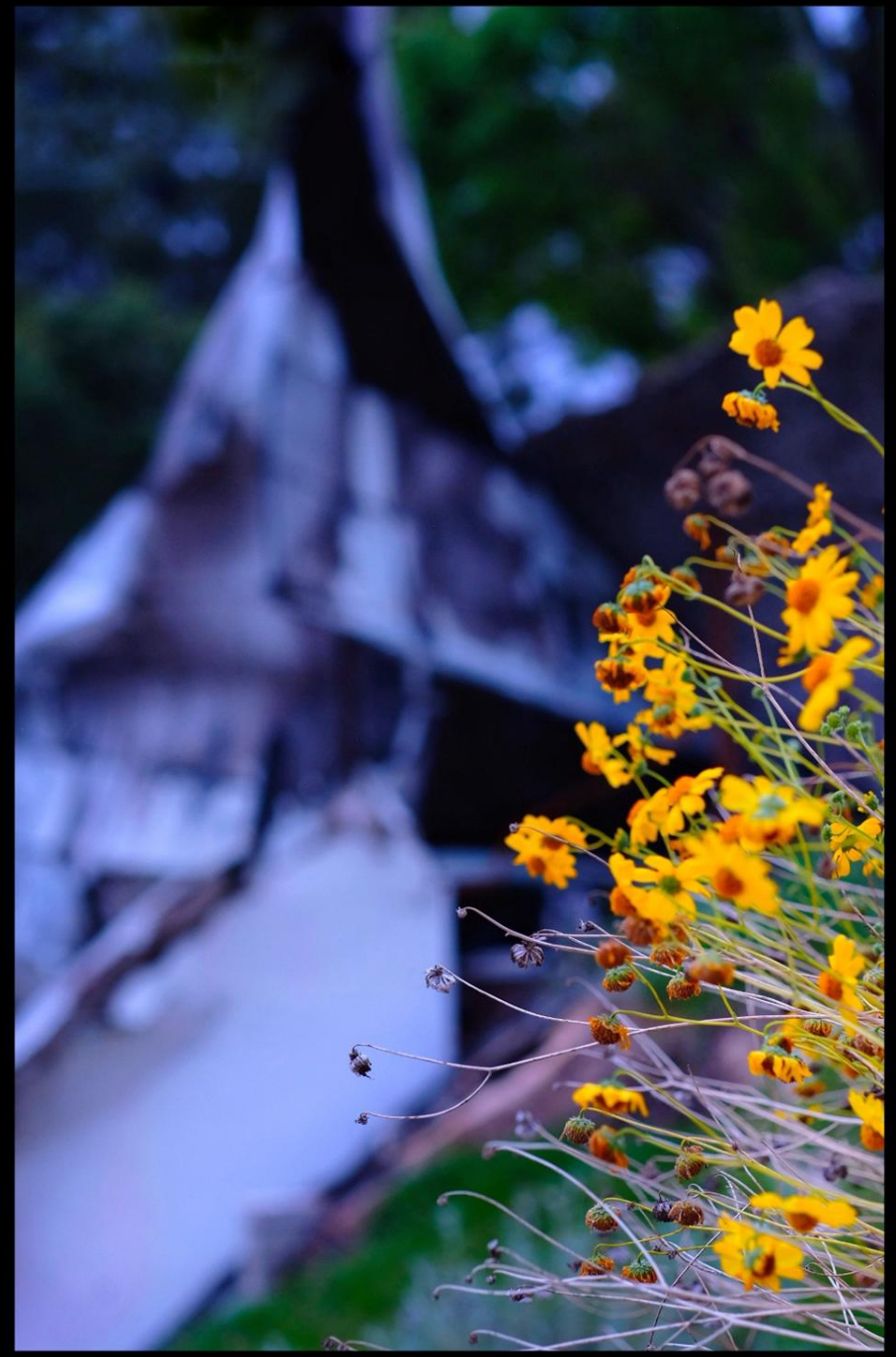
Effective Strategies

- Limiting design choices to three safe, high-quality options prevents overwhelming decisions and post-decision anxiety (added to already-existing anxiety).
- Avoiding presentation of bad or blind design options maintains homeowner confidence and trust and gives them no-fail, always-safe results.
- Setting intentional, realistic expectations reduces anxiety and prevents disappointment.
- Being listeners first helps understand homeowner limits and tailor the decision process.
- Providing full transparency throughout the process builds trust and reduces uncertainty.
- Regular, consistent communication comes from *only* two team members: same time, same voices.

Challenges to Avoid

- Presenting too many options can lead to confusion and increased stress for trauma victims. Though, yes, they are building a beautiful new home, many - at the moment - don't know where their home will be next month.
- Showing poor or unsafe design options in an effort to "prove" other options will erode trust and cause decision paralysis.
- Overpromising on timelines or outcomes leads to frustration and loss of credibility. **Many of us, even the professionals, do not know the timelines in a crisis-recovery effort.*
- Failing to regulate decision pacing may cause exhaustion and poor choices.
- Lack of clear communication can increase uncertainty and overwhelm homeowners.

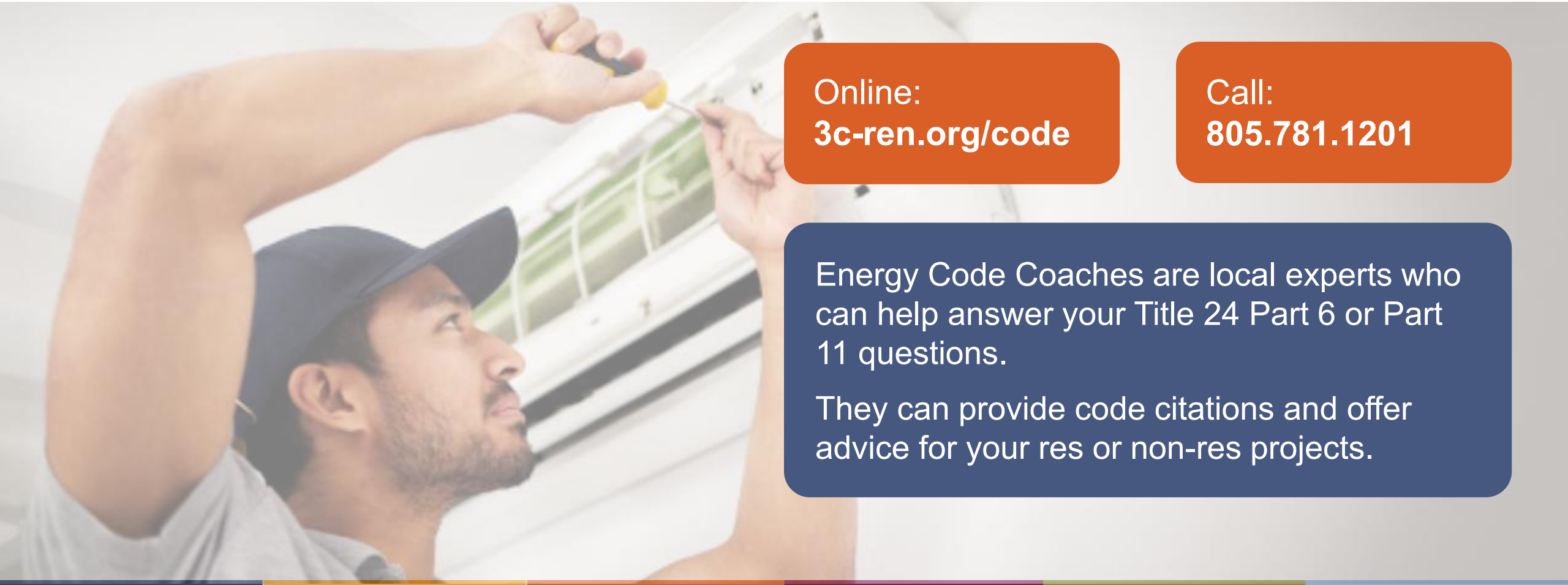
Back On Their Feet:
Helping People ReBuild Amidst Trauma, PTSD, and Recovery



Q & A

Questions about Title 24?

3C-REN offers a *free* Code Coach Service



Online:
3c-ren.org/code

Call:
805.781.1201

Energy Code Coaches are local experts who can help answer your Title 24 Part 6 or Part 11 questions.

They can provide code citations and offer advice for your res or non-res projects.

Thank you for coming!

More events: **3c-ren.org/events**

Questions: **info@3c-ren.org**

Follow us on social media:

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