

FIVE PHASES OF DISASTER MANAGEMENT



In each phase of disaster there is a roadmap to enhance chapter effectiveness. Each section may be used as a standalone with checklists and options for immediate action and be used as part of annual training of new AIA Chapter leadership teams.

- READINESS Annual training and preparation of Chapter Leadership to build awareness and establish relationships in the community.
- RESPONSE Immediate steps to take in the first few days after disaster, reminiding officials of the AIA Chapter's ability to support the community and also to provide Safety Assessments.
- RECOVERY Activities and options for the AIA Chapter to take in the first few months after a disaster including working with neighboring Chapters.
- REBUILDING Providing the resources and information to help local architects be effective supporting community rebuilding efforts.
- REVIEW Lessons Learned Report to AIA CA and DAN Advocacy Items -Code Changes - Write Case Study - Update Toolkit.

TIMELINE OF DISASTER MANAGEMENT

Phase	Timeframe*	Activities	
Readiness	Annually (Each new AIA Board)	Chapter Leadership Training and Awareness Community Relationship Building	
Response	Days (+/- 4 days after disaster)	First Responders Life safety Temporary Shelters Cal OES Safety assessment program (SAP)	
Recovery	Months (+/- 4 months after disaster)	Neighborhood organizing Safety and environmental clean up Permitting officials - streamlining Community – planning, organizing Insurance adjusting Design & Permitting	
Rebuilding	Years (2 - 4 - 10 years after disaster)	Preconstruction: Testing, Design, Engineering, Permit Construction - Bidding, Contracting, Inspecting Furnishing and Moving in	
Review	After (When component feels activities are complete)	Evaluation of results Lessons Learned Report out and Advocacy Toolkit Feedback Case Studies	

* "4 days - 4 months - 4 years" was coined by Cameron Sinclair -Architecture for Humanity -as the average timeframe for responding, but your timeframes will vary. Insurance and regulations set 12-24-36 month limits.

1906 DISASTER RECOVERY





JULIA MORGAN, FAIA







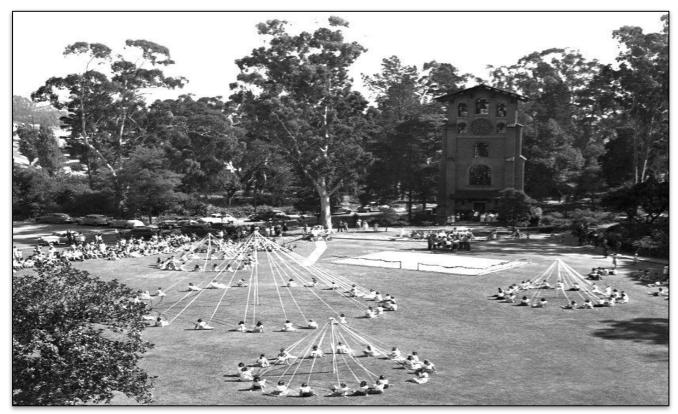
THE YOUNG WOMAN ARCHITECT WHO HELPED BUILD THE BIG FAIRMONT

By Jane Armstrong

Still building realth in charge of a good work.

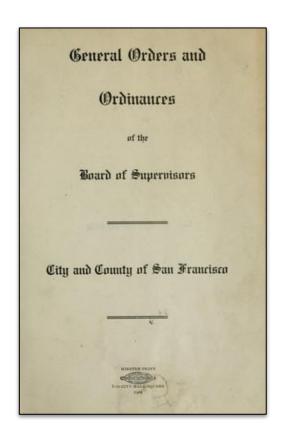
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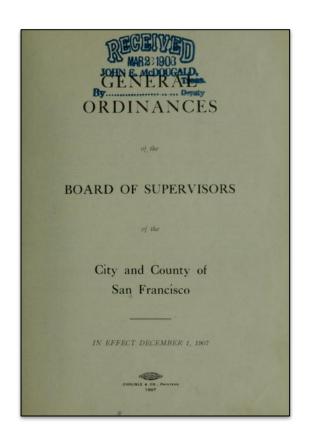
1903 5-STORY REINFORCED CONCRETE TOWER



MAY DAY AT MILLS

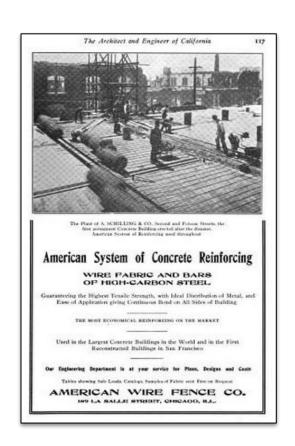
BUILDING CODE CHANGES | 4 MONTHS





NEW TECHNOLOGY ADOPTED POST-DISASTER

The Architect and Engineer of California REINFORCED CONCRETE Construction THE ONLY FORM OF CONSTRUCTION WHICH SUCCESSFULLY WITHSTOOD EARTHQUAKE AND FIRE We do your Construction of Buildings and Installing of Machinery and Equipment on the "Cost-plus-afixed-sum" hasis the square-deal-for-everybody plan We are Exclusive Pacific Coast Agents for Filer & Stowel (Milwaukee, Wis.), Corliss Engines and Saw Mill Machinery Greenway Separators Standard Safety Water Tube Boilers Erie Tubular Boilers Fisher Generator Sets Erie Automatic Engines Michigan Lubricator Company Specialties Geo. I. Leyner Engineering Works Company (Denver, Col.), Compressors, Hoists and Drills Pierce (Vacuum) Heating Systems for Hotels and Large Buildings As itstalled in Palace Hotel, San Francisco-LARGE STOCK ON HAND IN SAN FRANCISCO Prices and Terms the Same as Before Occidental Machinery and Engineering Co. 609 HARRISON STREET, NEAR SECOND, SAN FRANCISCO We did not even temperative down You Prancies.



READINESS - annually



Readiness means having current Leadership aware of the resources available to them at the beginning of each year and ongoing efforts to build the relationships that will facilitate collaboration during a Disaster event and after. This includes:

Annual Leadership Training

Annual Readiness and Outreach Plan

Annual Business Continuity Plan

CHECKLIST - READINESS

AIA

- Annual AIA CA Disaster Readiness Training Q1
 - ☐ In Person, Online or by Video
 - AIA Component Disaster Toolkit and AIA Handbook Access
 - Ongoing and "Day One" Communication Strategies
- Annual AIA Component Leadership Readiness & Outreach Plan
 - Participation in the Disaster Area Network (DAN)
 - Engagement plan with community leaders and CBO's
 - Communication outreach plan to staff and members
- AIA Component Business Continuity Plan
 - ☐ Information technology Backup of Documents and Data
 - ☐ Facilities management Protection of Physical Assets
 - Remote Work Policy
 - ☐ Project management continuity plan
 - Office administration/human resources Emergency Contact List
 - Business Continuity Financial Plan

RESPONSE - days



The response phase of a disaster is the time when the disaster event is occurring and continuing for a number of days following the disaster as the first responders make the community safe and assess the structural safety of those structures that remain. During this phase, Community Leadership will want to start engaging with the community:

- Immediate Action Core Team
- Disaster Recovery Committee
- Community Outreach

CHECKLIST - RESPONSE

AIA

- Day One First Meeting Core Team:
 - ☐ Convene Core Team to define path forward for several days
 - Open Toolkit and go to Response Checklist, create plan
 - Review Business Continuity Plan and Communication Plan
- ☐ Phase Two Safety of Staff and Members
 - Return to Chater Office, if safe, or determine alternate location to safely operate
 - Contact State and Federal Agencies for Disaster Support
 - Reach out to other Staff to verify safety personal and business
- Phase Three Begin Community Outreach
 - Leadership Engage Community and CBO Leaders
 - Reach out to adjacent Jurisdictions collaboration
- Prepare collateral materials -
 - Day One Response Materials
 - One pager of what Leadership can provide to community
 - Elevator speech How AIA Can Help Community
- ☐ First Week Disaster Recovery Committee Chair
 - □ Schedule first meeting, notify membership and adjacent chapters

RESPONSE - SHOWING UP



FIRESTORM RECOVERY COMMITTEE

Providing the support of AIA Architects to the community for:





ARCHITECT SERVICES and CAPACITIES

- Pro Bono Assistance (Waivers)
 - Volunteer Architects via Cal OES SAP
 - o DRC/LAC Centers Help Homeowners
 - Workshops Group and One on One
- Design and Engineering
 - Insurance pays for design (not pro bono)
 - Reasonable Fees, Proper Estimating
 - Don't over design (HSWS equivalency)
 - "Stay in Your Lane
 - o "Only bite off what you can chew."



Consumer Protection of a Vulnerable Population

- Beware of non-architects holding out and charging as if
- Promote the value of AIA Architects providing Construction Administration
- Contractor relationships
- Fraudulent Contractors

CO-ORDINATING with COMMUNITY

OUTREACH AND AWARENESS

- Politicians Government leads in Response phase
- Social Media Next Door, Facebook
- Community Groups forming join
- Follow Communication Plan

PROFESSIONAL ACTIVITIES

- Learning about the effects of the Disaster
- Offering to collaborate with building officials
- Collaboration with Builder's Exchange and CSLB



RECOVERY - months



The Recovery phase of a disaster is the next several months when the community and property owners are planning their recovery process. There is a lot of confusion and the government agencies are still predominantly leading the efforts, but the government does not design or build structures except their own. Property owners have to step up and they need a lot of help, which AIA Chapters can help with. In this time of pivoting from government to building industry, there are many activities and options for the AIA Chapter to take.

- Disaster Recovery Committee Meetings
- Architects Engaging Recovery Planning
- Community Outreach
- Professional Development

CHECKLIST - RECOVERY



DISASTER RECOVERY COMMITTEE MEETINGS

- Decide how the Chapter wants to get involved
- Organize the subcommittees and teams that have similar interests
- Communication Plan for Committee Basecamp

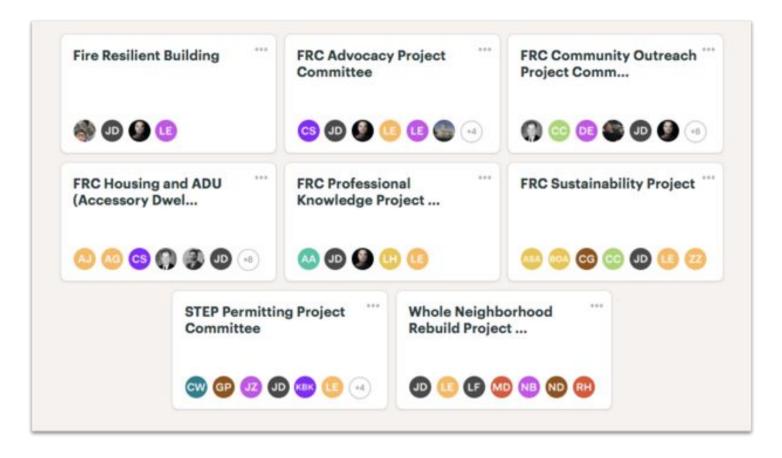
COMMUNITY OUTREACH

- Workshops and Hotlines
- ☐ Lead Community Charrettes to Plan Recovery and Resilience for Future
- Promote good design and resilient rebuilding
- Promote value of architects in helping rebuild community
- Online resources to help property owners find available architects

PROFESSIONAL DEVELOPMENT

- □ Provide learning opportunities regarding immediate issues
- ☐ Participate with collateral organizations
- Provide links for component membership to access online resources and guidelines

DISASTER RECOVERY BASECAMP



ARCHITECT SERVICES and CAPACITIES

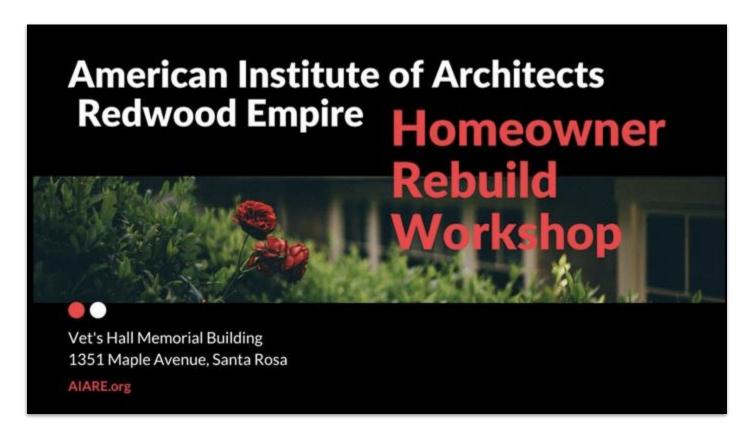
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COMMUNITY OUTREACH



RECOVERY - ARCHITECTS HELPING COMMUNITY

LAKE COUNTY - PREP

- Community Workshops
- One on Ones
- Trust of Authorities
- Educating Homeowners



REBUILDING - years



Rebuilding takes years and involves architects intimately in the design and construction phases. Architects can be so busy, that they don't engage with the component activities. And AIA Components can help architects be effective, maintain stamina, and drive a successful rebuilding effort by:

- Continuing Disaster Recovery Committee Activities
- Supporting Local Architects
- More Community Outreach
- Showcasing Rebuilding Efforts and Projects

CHECKLIST - REBUILDING



- DISASTER COMMITTEE ONGOING COMMUNICATION
- SUPPORT LOCAL ARCHITECTS
 - Professional Development Resilient Design, New Materials, Sustainability
 - Collaborative opportunities with AEC community code and streamlining
 - Continuing networking activities and promoting stamina

COMMUNITY OUTREACH

- Workshops and Hotlines for property owners to meet with architects
- Presentations about resilient design
- Provide online "Architect Finder" with availability, specializations, and contact info
- Educate community about architect services during construction to protect assets

■ SHOWCASE REBUILDING EFFORTS AND PROJECTS

- Include special categories in Design Awards
- Find collaborative opportunities to exhibit design award entries
- ☐ Media outreach with articles, social media, newsletters and press releases

Debris removal Public or private

Insurance #1

Architect as Team Lead

Insurance #2

- Geotech/Survey/Topo Individual or group
- Permitting and bidding (Contractor)
- Construction
- Change Orders
- 7. Furnish and move in!

Insurance Complete















Coffey Park neighborhood of Santa Rosa: 1 house standing 4 months after the fire

CUSTOM HOMEBUILDING - CAN BE 25⁺ YEARS



ARCHITECT SERVICES and CAPACITIES

Pro Bono Assistance (Waivers)

- SAP Safety Assessment
- DRC/LAC Centers Help Homeowners
- Workshops Group and One on One

Design and Engineering

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LEARNING ABOUT PROCESS & CONTRACTS

How many contracts? Design choices? How to get done – DIY? One Stop?

- Appraisers and Adjusters
- Geotech & Surveyors
- Architects and Engineers
- T24 and Green Consultants
- Permits and Expeditors
- Cost Estimators
- Contractors
- Specialty Subcontractors
- Buying Specialty Items
- Replacing Personal Property







UNDERSTANDING INSURANCE



Insurance Company A

Inputs				
Policy (Dwelling)	\$500,000			
House Sq Foot	2,200			
Garage Sq Foot	500			
Price per square foot: low case	\$325			
Price per square foot: high case	\$450			

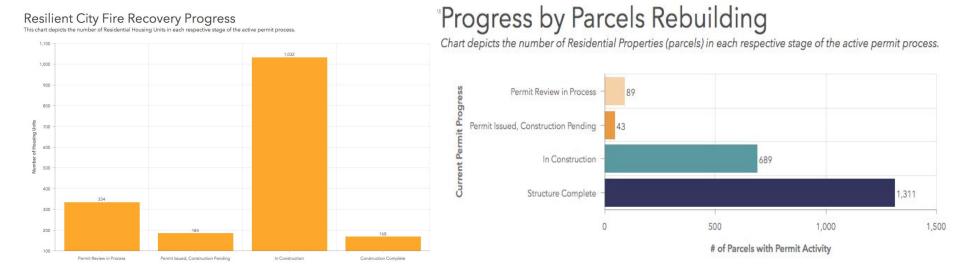
Insurance Policy	Maximum Policy Limit	Primary Coverage %
A - Dwelling (Green upgrades included)	\$500,000	
B - Other Structures	\$50,000	10%
A1 - Replacement Cap	\$250,000	50%
Code Upgrade	\$100,000	20%
Trees, shrubs, landscaping	\$25,000	5%
SUBTOTAL COVERAGE A	\$925,000	
C - Personal Property	\$350,000	70%
SUBTOTAL DWELLING + PERSONAL PROPERTY	\$1,275,000	
A - Debris Removal - Dwelling	\$25,000	5%
B - Debris Removal - Other Structures	\$2,500	5%
C - Personal Property Debris Removal	\$17,500	5%
D - Loss of Use	\$200,000	40%
SUBTOTAL COVERAGE B	\$245,000	
TOTAL	\$1,520,000	304%

Homeowner Information			
Name -	Joe Policyholder		
	1234 Nice Home Avenue		
Address -	American Town, USA		

Project Estimates	Low	High	% of Project
Dwelling	\$796,250	\$1,102,500	
Site Structures	\$159,250	\$220,500	20%
Soft Costs (7-25% possible)	\$119,438	\$165,375	15%
Landscaping	\$79,625	\$110,250	10%
SUBTOTAL	\$1,154,563	\$1,598,625	
Interior Design & Furnishings*	\$115,456	\$159,863	10%
SUBTOTAL DWELLING + INTERIORS	\$1,270,019	\$1,758,488	
Debris Removal	\$45,000	\$45,000	
(Actual Loss Sustained)	\$200,000	\$200,000	
SUBTOTAL	\$245,000	\$245,000	
PROJECT COSTS	\$1,515,019	\$2,003,488	

REBUILDING STATS – 15 Months to 33 Months

4% Built ⇒ 50% Built 50% Rebuilding ⇒ 80% Built & Rebuilding



POST-DISASTER REBUILDING => 8 - 24 months

Pre-**Identify AEC Team** Construction Move-in Construction 1-8 months 6-14 months ~2 weeks ⁺ 2 weeks Debris Removal Site Prep **Furnish** Rebuilding Strategy Site Assessment **Vertical Construction** Insurance/Funding Inhabit Design/Engineering Permitting

ALE is only 12 months if house was not in a declared emergency zone, so important to get started ASAP

REVIEW - after



After the disaster has passed, the component should take time to review the activities of the chapter and assess the effectiveness of their efforts to help the community. Because component leadership changes annually, it is important to carry this thread and follow through even with subsequent component leadership. This review can include:

- Lessons Learned
- Success Metrics
- Write Case Study
- Report to AIA CA and DAN
- Advocacy Items
- Recommend Code Changes
- Update Toolkit

The value of this review is that the success of our components can be a tool for all chapter leadership to demonstrate to local, state, and federal officials the value of AIA Chapter engagement with the community from "Day One" of the disaster. Governments don't rebuild their communities. Architects, engineers, and contractors do. Having architects engaged helps everyone with a successful response-rebuilding-recovery process.

CHECKLIST - REVIEW



- Disaster Response Committee Review Meeting
 - Discussion of Lessons Learned
 - ☐ Identifying Metrics of Success
- Writing Case Study
 - All members of Chapter Leadership Team can Access (verified)
- Report to AIA CA and to Disaster Area Network
 - Advocacy elements
 - Code Change recommendations
 - ☐ Toolkit Feedback
- Outreach to community
 - Media engagement
 - ☐ Community leadership presentations

MEET AND EXCEED GOALS

33 Months of Recovery/Rebuilding 1,069 County + 1,311 City = 2,480 Homes Complete 4,177 Permits Issued = 70-75% in process





CASE STUDIES



Disasters have always occurred, in California and throughout the world. Their impact on buildings has been carefully studied and resulted in changes to how we build. Here we provide case studies for how AIA Chapters respond and the ripple effect of their activities in the success of rebuilding their community and their contribution to creating more resilient solutions for planning and building.

To date we have several Case Studies:

- 2020 Santa Cruz CZU Complex
- 2018 Santa Barbara Thomas Fire
- 2017 Sonoma County Tubbs Fire
- 2015 Lake County Valley Fire
- 1906 San Francisco Earthquake Julia Morgan, FAIA

CASE STUDIES



DISASTER RESPONSE CHAPTER CASE STUDIES

2015 REDWOOD EMPIRE (AIARE)

DISASTER RESPONSE CHAPTER CASE STUDIES

2017 REDWOOD EMPIRE (AIARE)

DISASTER:

In September 2015, Lake County, California, suffered a wildfire that invaded the heart of two communities - Middletown and Cobb. A total of 1.958 structures were destroyed including; 1,280 homes, 27 multi-family structures, 66 commercial properties, and 585 other minor structures such as outbuildings and sheds. 93 structures were damaged including; 41 homes, 7 commercial properties, and 45 other minor structures.



1) RESPONSE:

Damage Inspection Teams completed primary and secondary Safety Assessment Program (SAP) inspections of the structures destroyed by the Valley Fire as directed by CalFire and Cal OES. These SAP inspections were completed primarily by local government building officials. The AIARE Executive Director reached out to local officials, but was held at bay for several months due to fears of "ambulance chasers." On our first visit, we did significant touring of the damaged areas.

2) RECOVERY:

Beginning january 2016, the Chapter was invited to come and participate in home rebuilding workshops, expo's, and we created one on one workshops on several weekends. Over 20 of our members, including Allied engineers, attended one or multiple events to help homeowners understand the process of design and construction. In each event, we triaged the homeowners to put them together with a professional who could help them the best. Some developed longer term relationships that became project work. Others offered pro bono services to develop proof of loss documents, floor plans and construction cost estimates.

DISASTER:

In October 2017, Sonoma County, California. suffered a wildfire that invaded the heart of the community of Santa Rosa. A total of 5.636 properties suffered structures that were destroyed including homes, multi-family structures, commercial properties, and/or appurtenant structures such as outbuildings, barns, and sheds. 317 properties suffered partial damages to their structures. Most notably, several large subdivisions of workforce housing were completely destroyed.



From Day One, AIARE was proactive with the political engine to participate with the response efforts. Chapter leadership met "Day One" and decided to show up and offer our resources in every possible manner. We created a Firestorm Recovery Committee (FRC), with participants from neighboring AIA Chapters. We joined various groups like the Rebuild Sonoma County Working Group, and met with multiple politicians, media representatives, and community leaders. We consulted with AIA California and AIA National, and made our member architects available to the public for as much capacity as they could handle. As a result of early advocacy:

 AIARE participated in the Local Assistance Center (LAC) for the first three weeks of response with two members in three hour shifts. We set up the schedule in Sign-Up Genius and members from several Bay Area Chapters manned our table. We alleviated concerns of Cal OES by not allowing architects to put their personal business cards on the table but we created one that could be handed out to individuals to represent our Chapter efforts and provide contact info. We asked visitors to our table to sign-in before they spoke with an architect, and our sign-in sheet included a liability waiver.







American Institute of Architects-Santa Barbara

Case Study Executive Summary

Thomas Fire Montecito Debris Flow

Community Recovery Team

Robert L. Oolev, FAIA Principal Editor

> Published May 1, 2020

CZU Lightning Complex Fire, Santa Cruz County Architectural Response Case Study Kate Rhein, AIA International Associate Member

Summary:

On August 16th 2020 a series of dry lightning strikes started a series of severe wildfires across Northern and Central California. The CZU Lighting Complex fires impacted San Mateo and Santa Cruz counties, and burned 86,509 acres before being fully contained on September 22nd. The fire destroyed 928 residences, 174 commercial properties, 388 accessory structures and damaged another 50 buildings. The main impacted areas were in the Santa Cruz mountains including Bonny Doon, Boulder Creek and Empire Grade.

Initial Resonnes

Santa Cruz County has a small architectural community of approximately 50 firms, the majority of which are solo practitioners. Our capacity to respond to the losses and take on rebuild projects is limited. Understanding this, the initial goal was to coordinate the local design professional's response to the fires by sharing information and providing volunteer opportunities for the local building design community.

Outreach to local building design professionals:

I initially reached out to the local architectural organizations: AIA Monterey Bay (Christie Thomas and Mary Ann Schietewanz) and the Architectural Association of Santa Cruz County (Bill Kempf and Jon Ifland). This formed the core team going forwards. We conducted outreach to the local professionals through the following:

- 1. Sharing contacts from the AIAMB, the AASCC and our own professional business connections.
- 2. Connecting through social media. I started a public FaceBook group called 'Rebuild Santa Cruz Design Team' and we shared the link through email and postings by the AIAMB.













