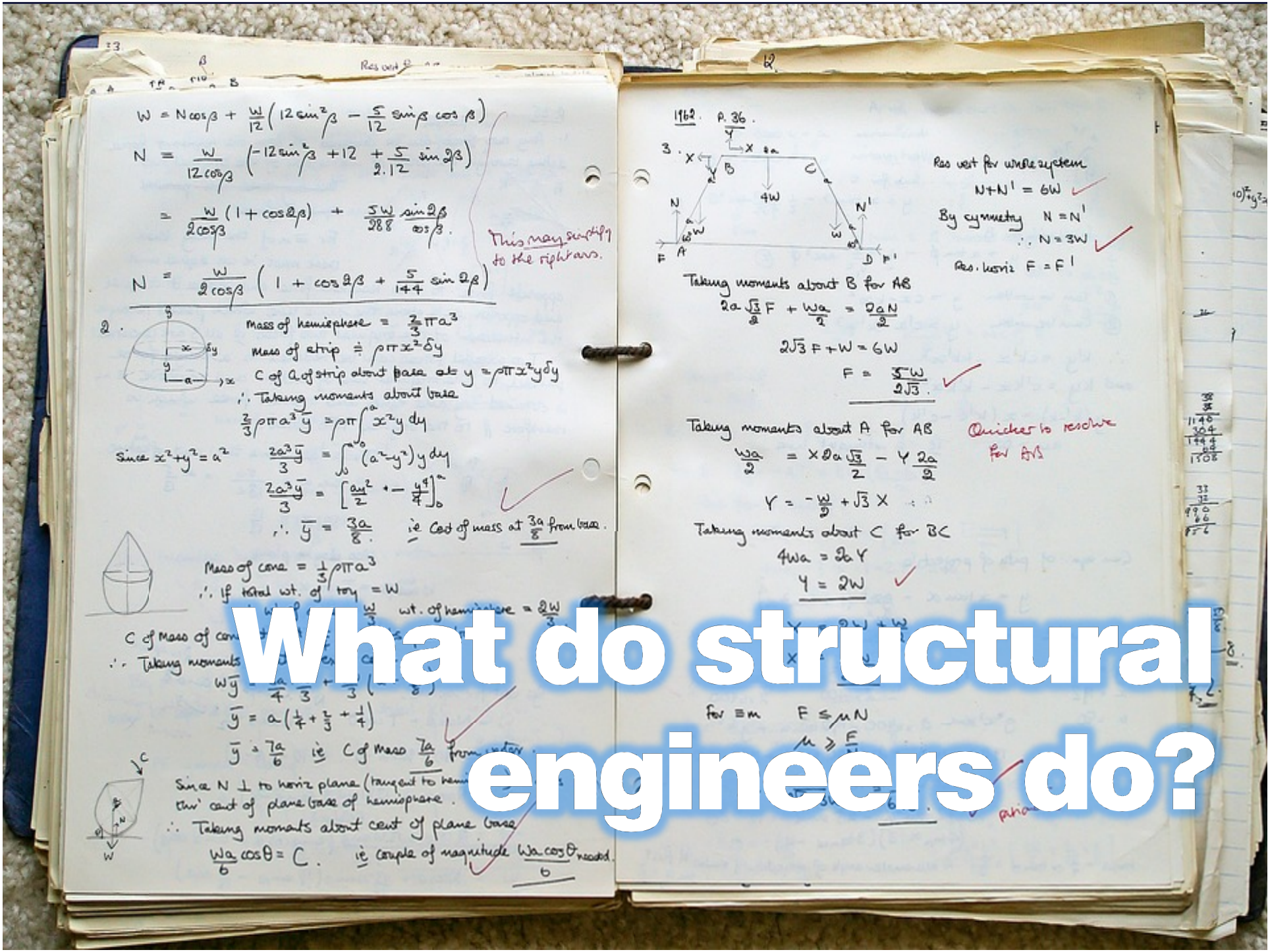
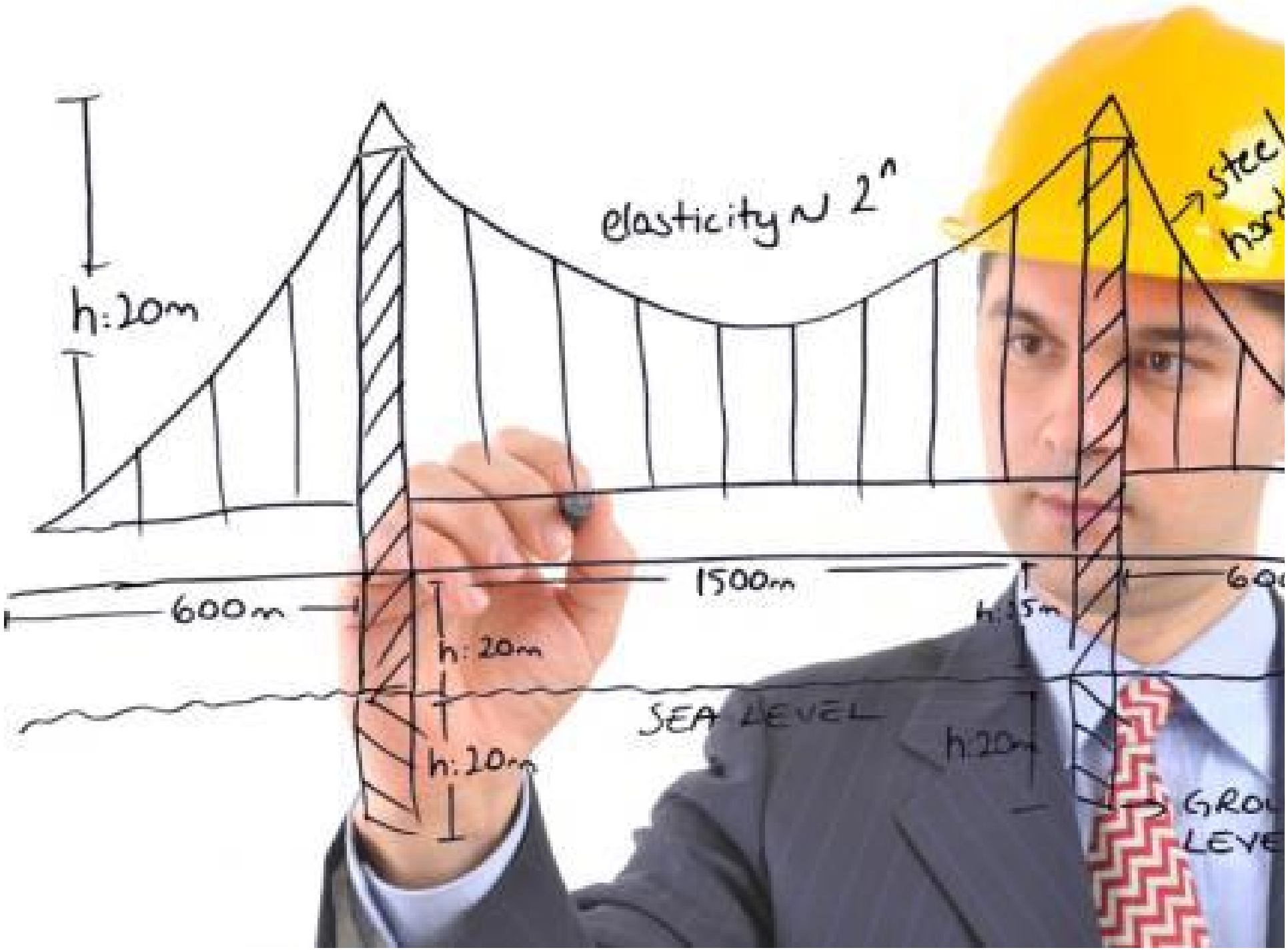
PARTNERING WITH STRUCTURAL ENGINEERS FOR SAFER BUILDINGS

Structural Engineers Association of Southern California
Presented by Annie Kao, P.E., Simpson Strong-Tie


What do structural engineers do?


h:20m
elasticity ~ 2^n
steel
1500m
600m
h:20m
h:20m
SEA LEVEL
h:20m

INNOVATIVE BUILDING DESIGN

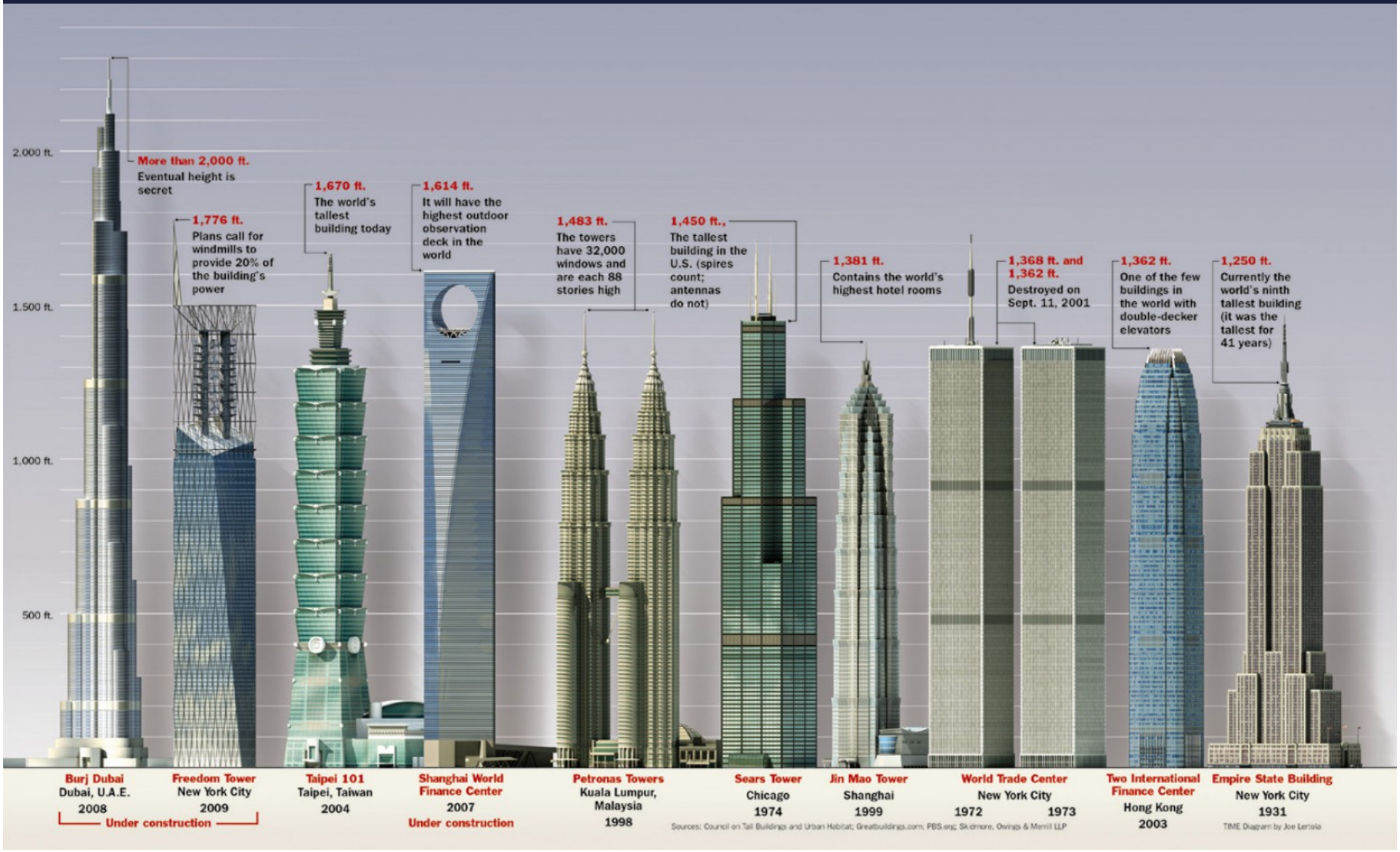


IMAGE COURTESY SIMPSON STRONG-TIE

Preparing for the Big One

A plan released by Eric Garcetti, the mayor of Los Angeles, recommends ways to make the city's buildings, water infrastructure, and telecommunications systems more resilient to a significant seismic event. The goal is to help the city quickly recover from a massive earthquake along the San Andreas Fault, which could affect Los Angeles today in much the same way that it did San Francisco in 1906.

By Catherine A. Cardno, Ph.D.

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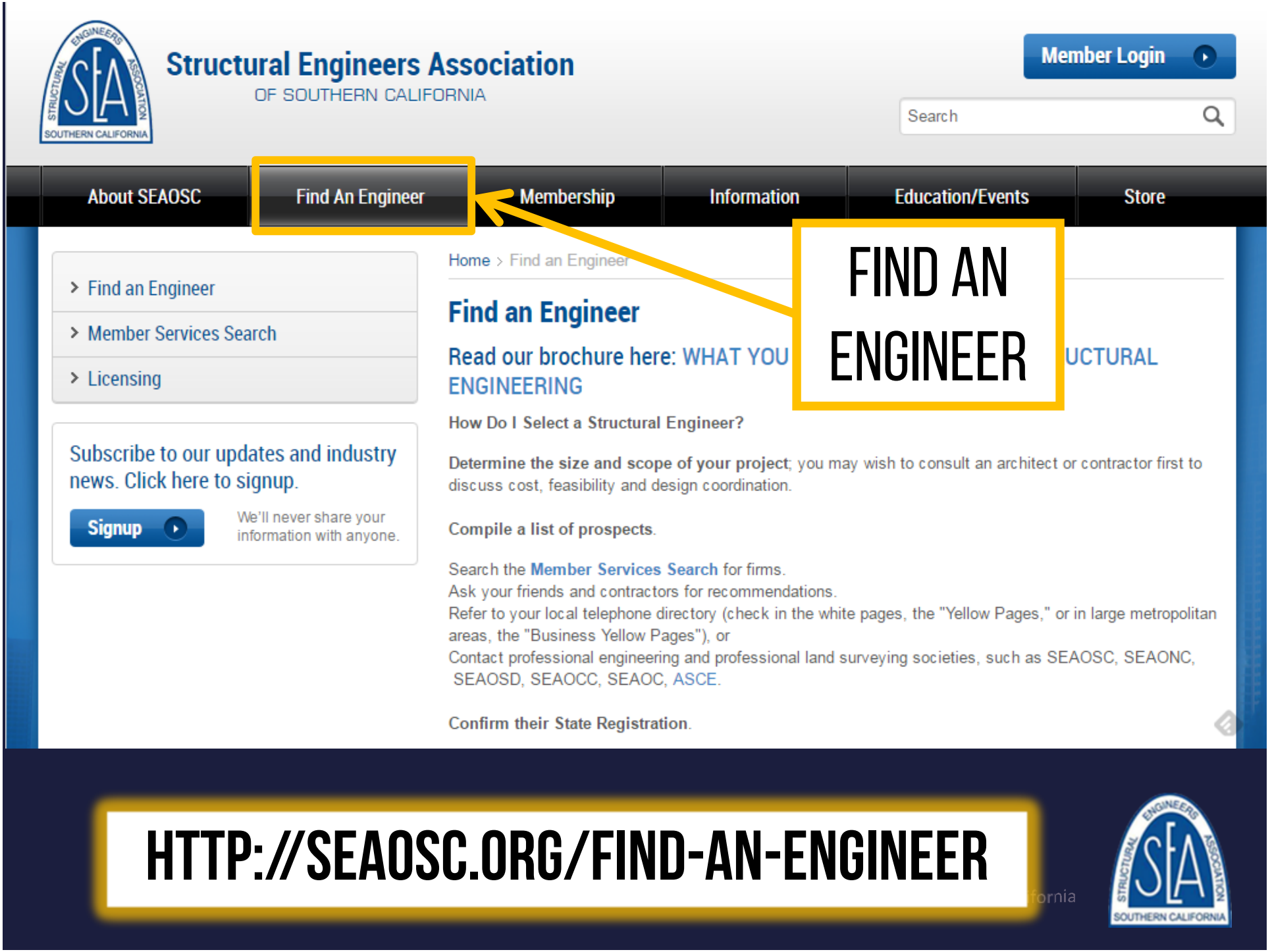
A roadmap plan released by the mayor of Los Angeles aims to protect lives, improve disaster response capabilities, streamline the city's short-term recovery, and protect its long-term economic capacity.

HOW TO FIND A STRUCTURAL ENGINEER?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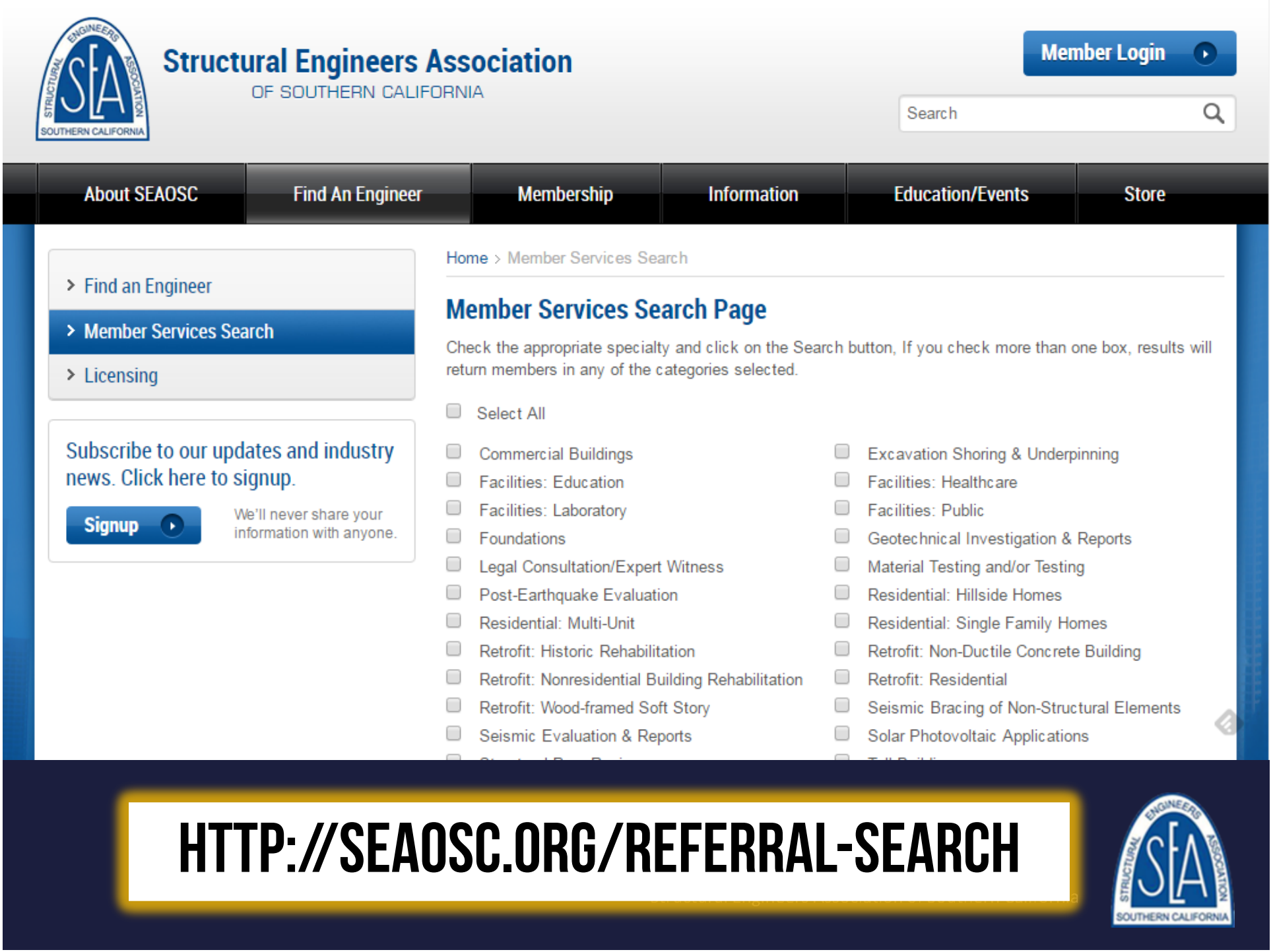
Read our brochure here: WHAT YOU UCTURAL ENGINEERING
How Do I Select a Structural Engineer?
Determine the size and scope of your project; you may wish to consult an architect or contractor first to discuss cost, feasibility and design coordination.
Compile a list of prospects.
Search the Member Services Search for firms.
Ask your friends and contractors for recommendations.
Refer to your local telephone directory (check in the white pages, the "Yellow Pages," or in large metropolitan areas, the "Business Yellow Pages"), or
Contact professional engineering and professional land surveying societies, such as SEAOSC, SEAONC, SEAOSD, SEAOCC, SEAOC, ASCE.
Confirm their State Registration.
HTTP://SEAOSC.ORG/FIND-AN-ENGINEER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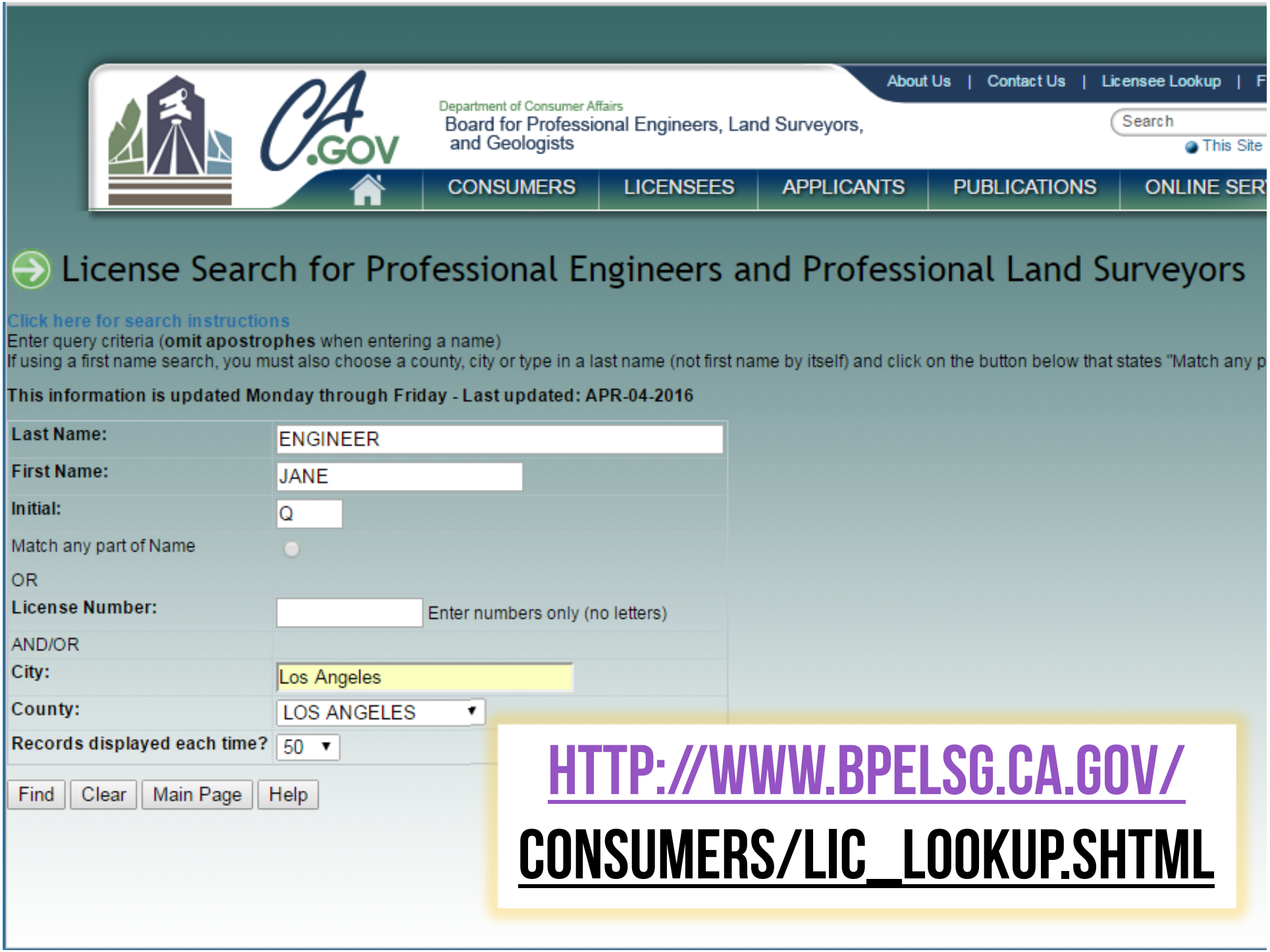
Residential: Multi-Unit
Retrofit: Historic Rehabilitation
Retrofit: Nonresidential Building Rehabilitation
Retrofit: Wood-framed Soft Story
Seismic Evaluation & Reports
Excavation Shoring & Underpinning
Facilities: Healthcare
Facilities: Public
Geotechnical Investigation & Reports
Material Testing and/or Testing
Residential: Hillside Homes
Residential: Single Family Homes
Retrofit: Non-Ductile Concrete Building
Retrofit: Residential
Seismic Bracing of Non-Structural Elements
Solar Photovoltaic Applications
HTTP://SEAOSC.ORG/REFERRAL-SEARCH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Enter query criteria (omit apostrophes when entering a name)
If using a first name search, you must also choose a county, city or type in a last name (not first name by itself) and click on the button below that states "Match any p
This information is updated Monday through Friday - Last updated: APR-04-2016
Last Name: ENGINEER
First Name: JANE
Initial: Q
Match any part of Name
OR
License Number:
Enter numbers only (no letters)
AND/OR
City: Los Angeles
County: LOS ANGELES
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Who is the right fit for your building project?

- Ask for project references for similar jobs
- Verify expertise in project type and ability to complete projects on time and on budget
- Request a site visit, written proposal, anticipated schedule, and fee estimate
- Ask questions!

WHY?

Why bother asking your structural engineer any questions?

- Your building is a valuable asset
- You want it to perform during an earthquake
- You want it to exist after an earthquake
- You want your occupants to be safe

- Structural Engineers are a valuable resource !

Questions Your Structural Engineer Can Help Answer

1. What are my site's soil conditions?
2. What is my site's level of seismicity?
3. Are there potential hazards from neighboring structures?
4. What performance level meets my needs?
5. What kind of nonstructural damage is my building vulnerable to?

Christchurch 2011 Earthquake

$35B and 50-100 years to fully recover

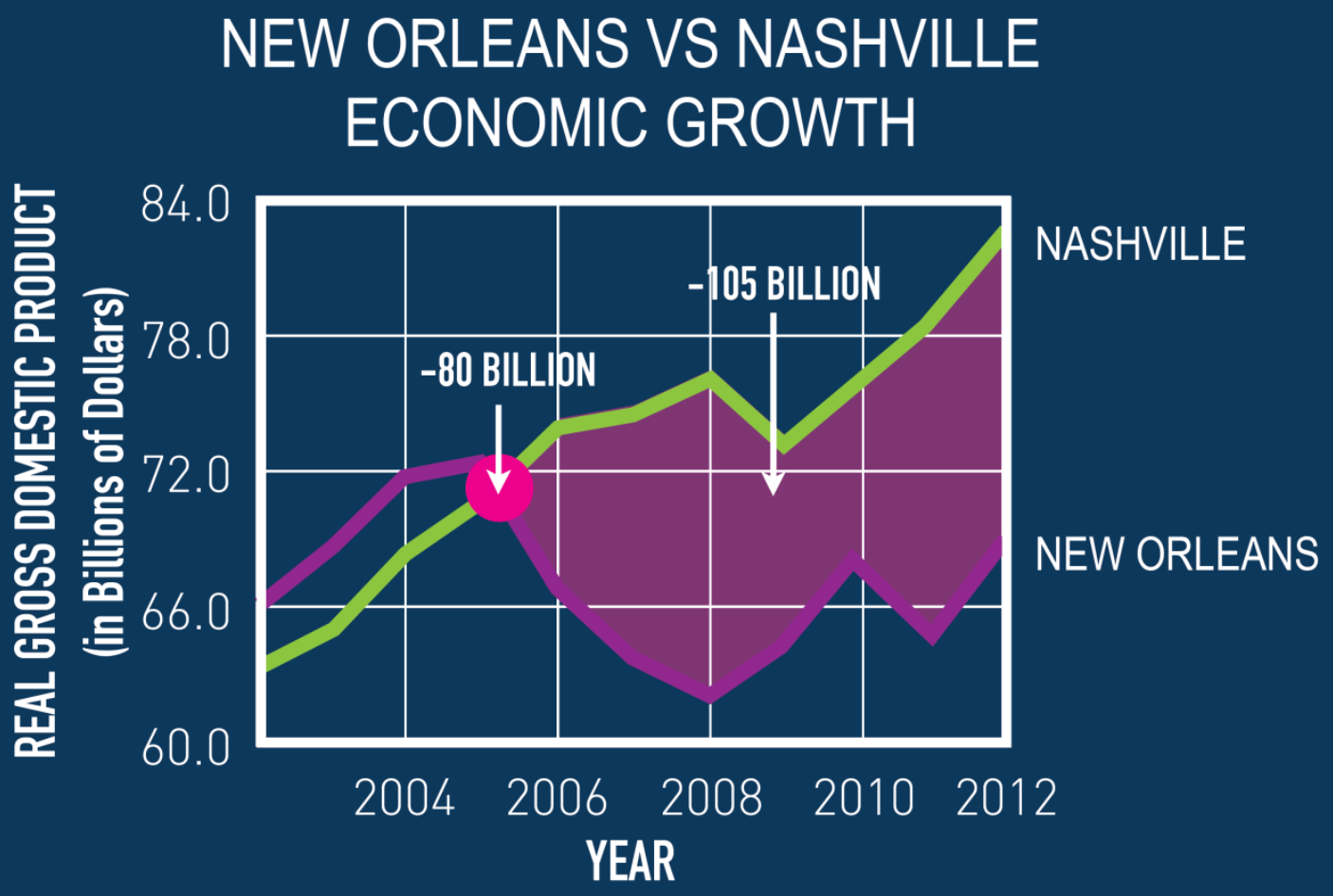
Structural Engineers Association of Southern California

CHRISTCHURCH

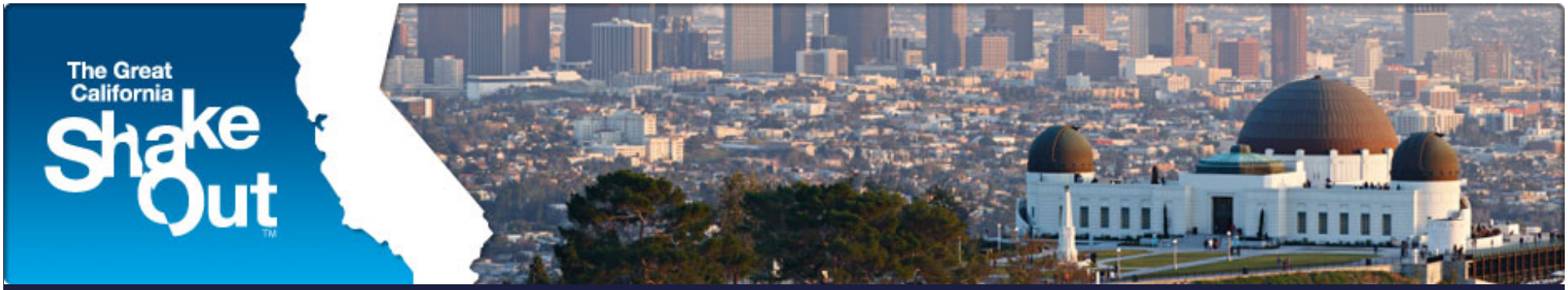
Source: radiolive.co.nz

SOUTHERN CALIFORNIA

ECONOMIC REPERCUSSIONS



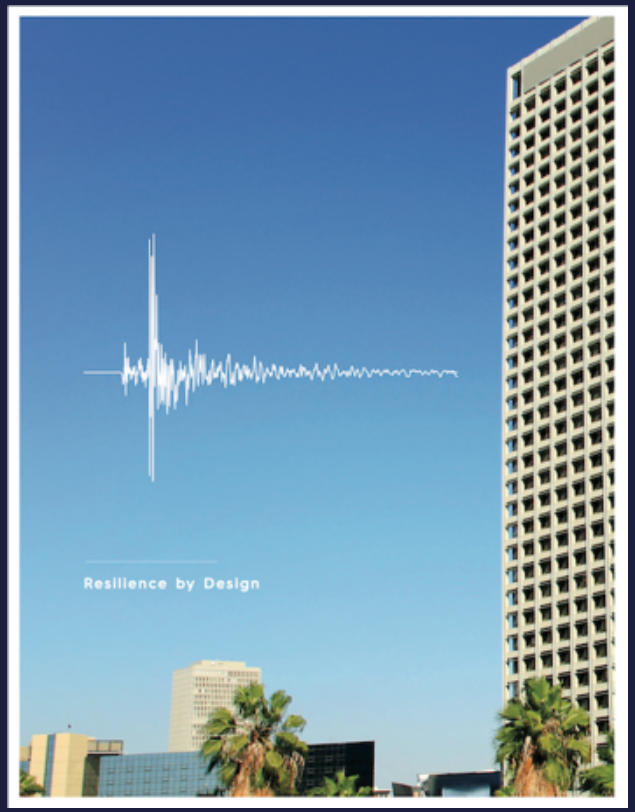
Source: Dr. Lucy Jones, USGS



- M7.8 Earthquake
- 1800 Deaths
  - 700 from 1500 soft story & concrete building collapses
- $213 billion of economic loss throughout SoCal
  - $47.7 billion from shaking damage
  - $65 billion from fire damage
  - $96.2 billion from business interruption costs
  - $4.3 billion from traffic delays

RESILIENCE BY DESIGN

- Protect the lives of our residents
- Improve the capacity of the City to respond to earthquakes
- Prepare the City to recover quickly from earthquakes
- Protect the economy of the City and all of Southern California



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