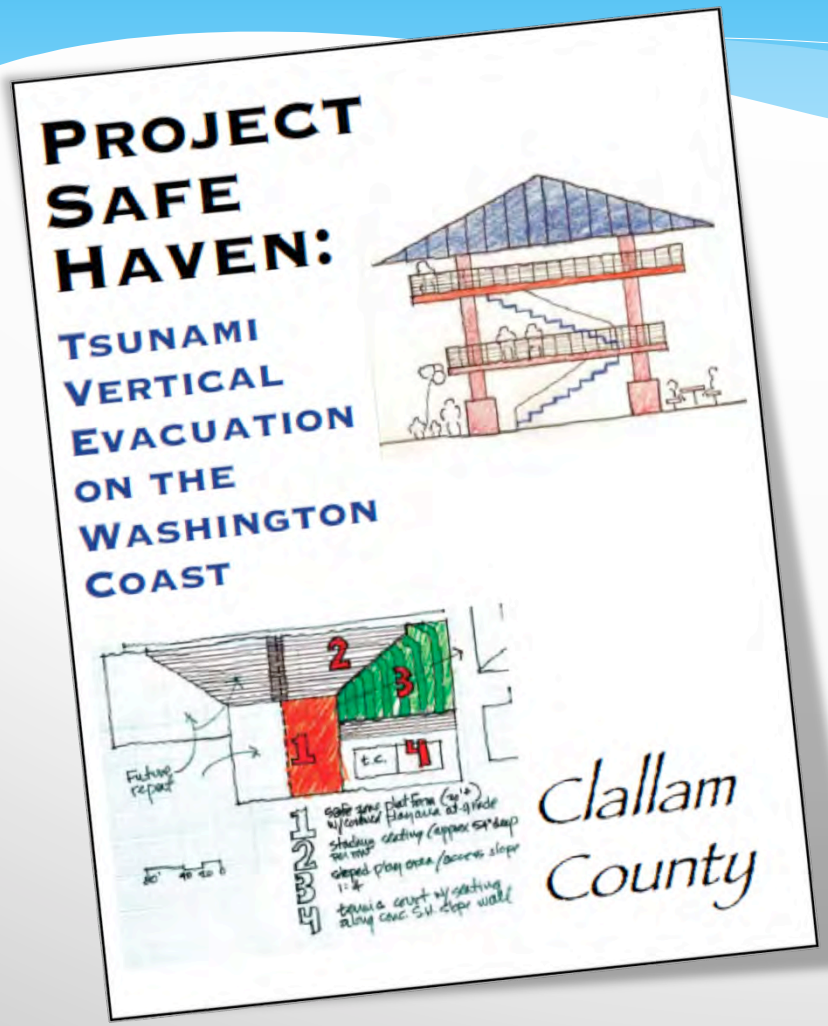
Cascadia EarthScope Earthquake and Tsunami Education Program
- CEETEP -

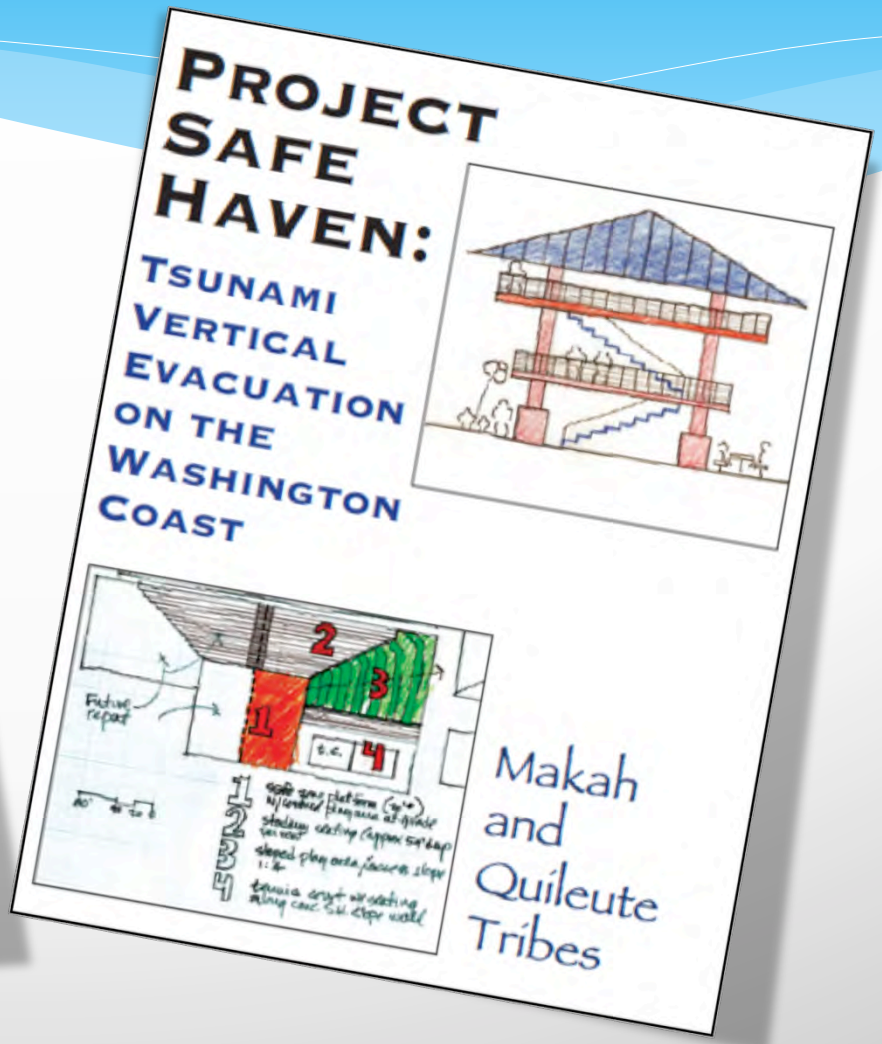
Breakout Session

Vertical Evacuation Structures

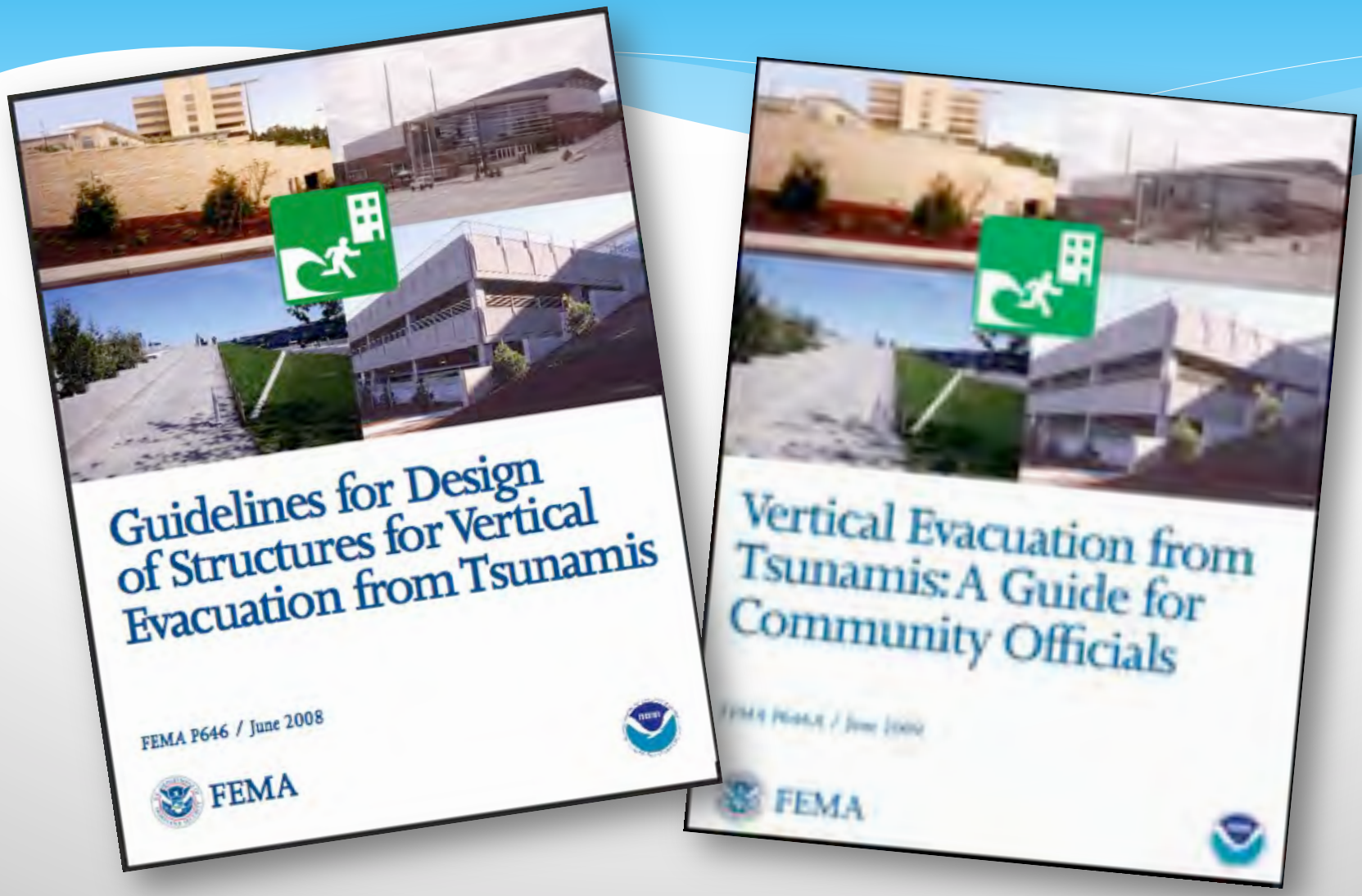
45 minutes

Vertical Evacuation Resources





Vertical Evacuation Resources



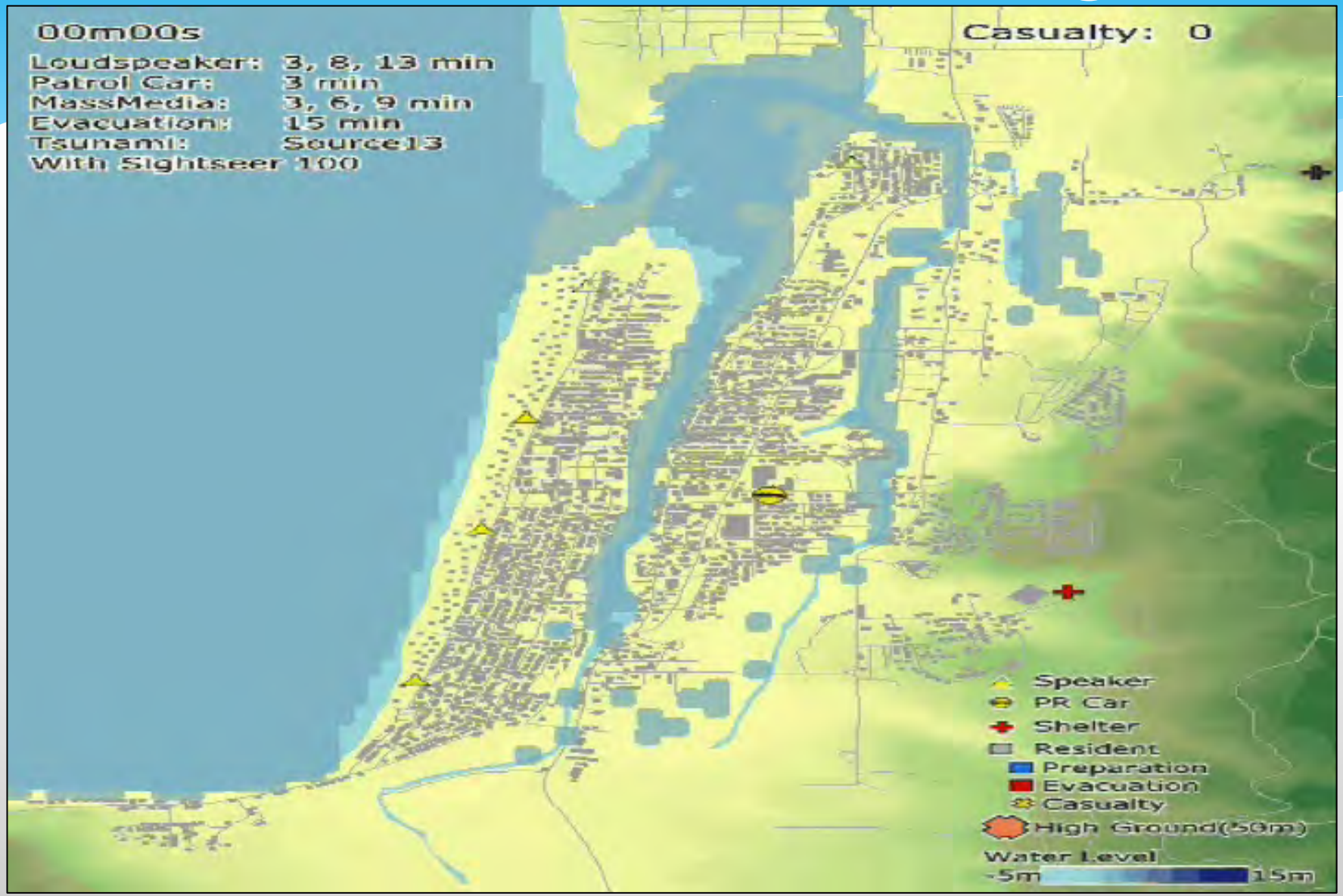
Vertical Evacuation

* Binder, pg. 271
* Hot off the press – want feedback!
* Multiple aspects and avenues for engagement
  A. Reading and Math skills – basic concepts about VE and design
  B. Determining appropriate locations
  C. Designing and constructing structure
  D. Presenting and explaining

Not what we mean . . .

Tohuku Japan 2010

Vertical Evacuation Modeling



Vertical Evacuation Modeling

Vertical Evacuation

* Brainstorm/Review:
  * What are some design elements to consider?

* Background Information
  * Activity, Part A

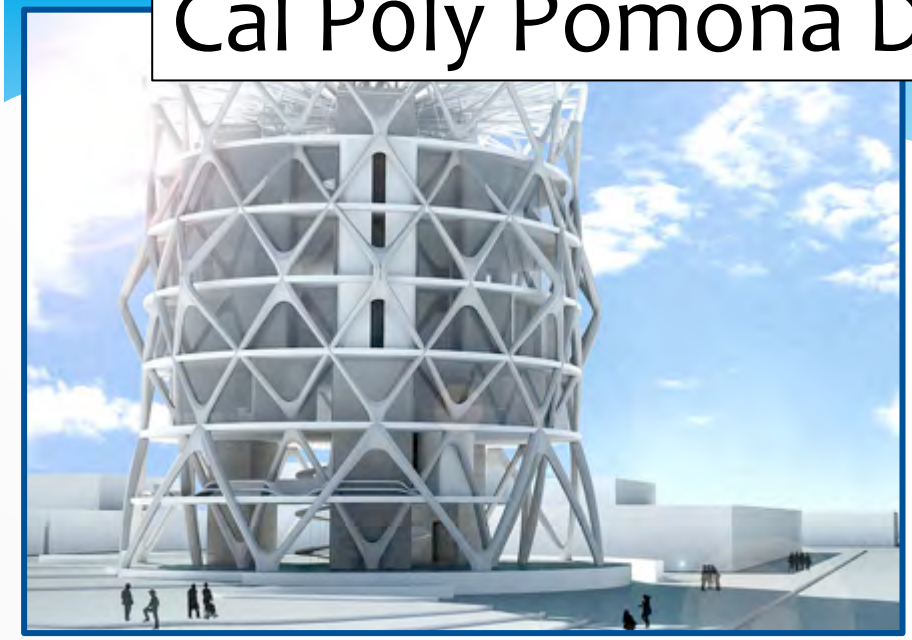
Vertical Evacuation

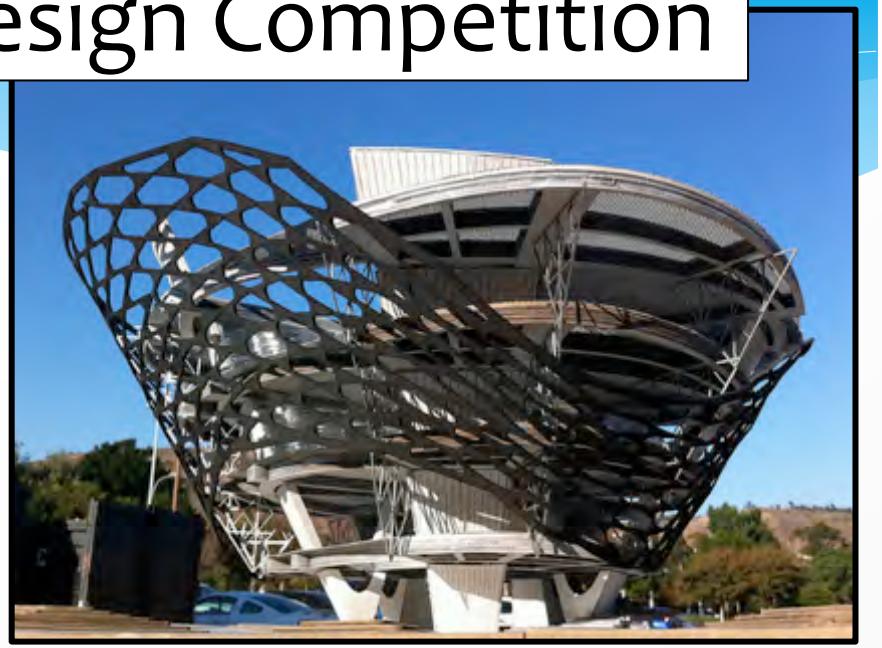
* Pre-existing buildings? Retrofits?
* Location – where is it needed? High population centers, where high ground isn't available, high tourist areas
* Strong enough to withstand initial shaking and waves
* Scouring effect
* Accessibility
* Size of building and # of people it can support
* Supplies – "island life"
* Safety - of people, of supplies
* Communication

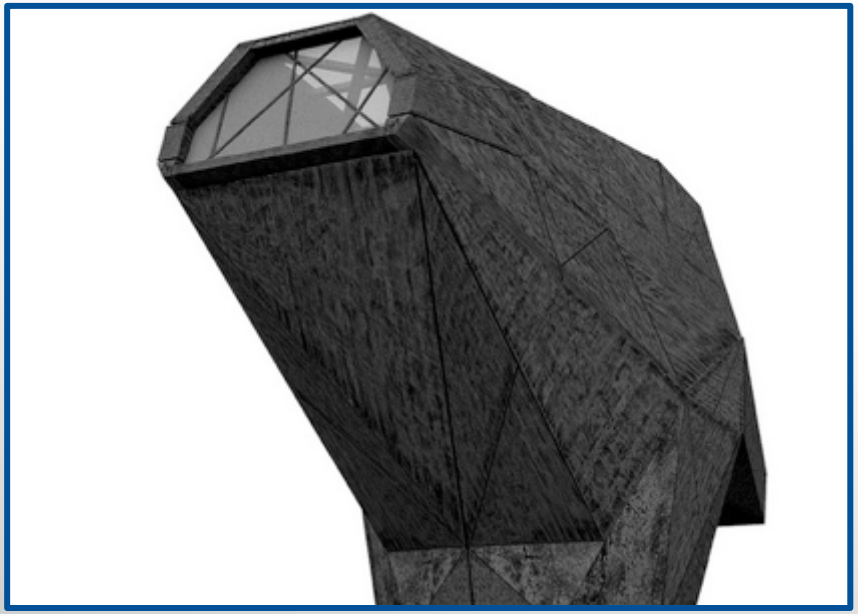
Existing Towers in Japan

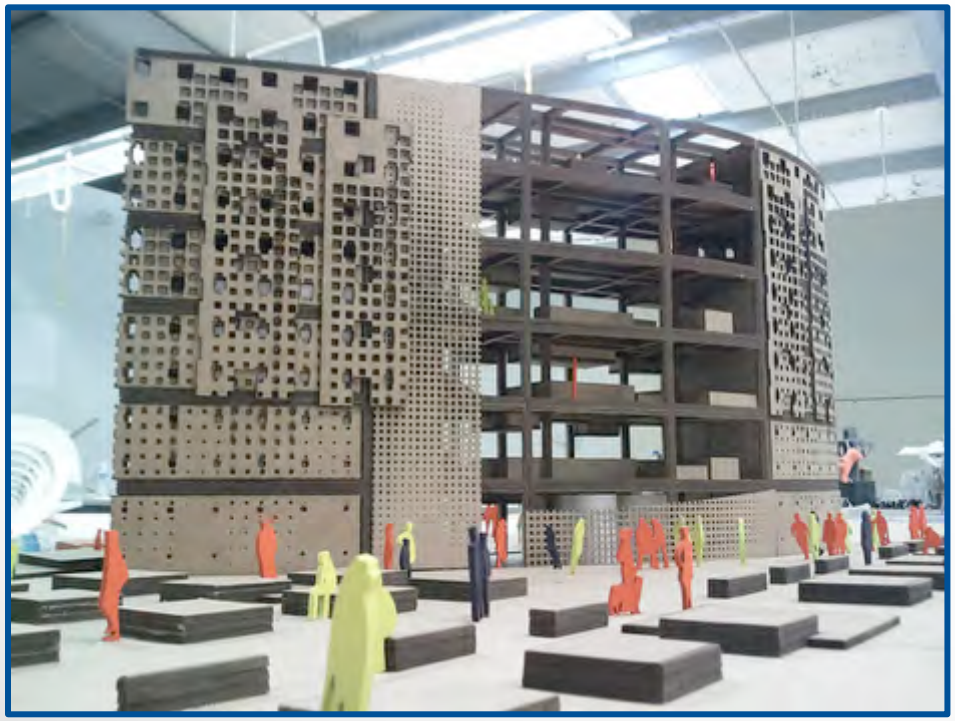
TasukaruTower

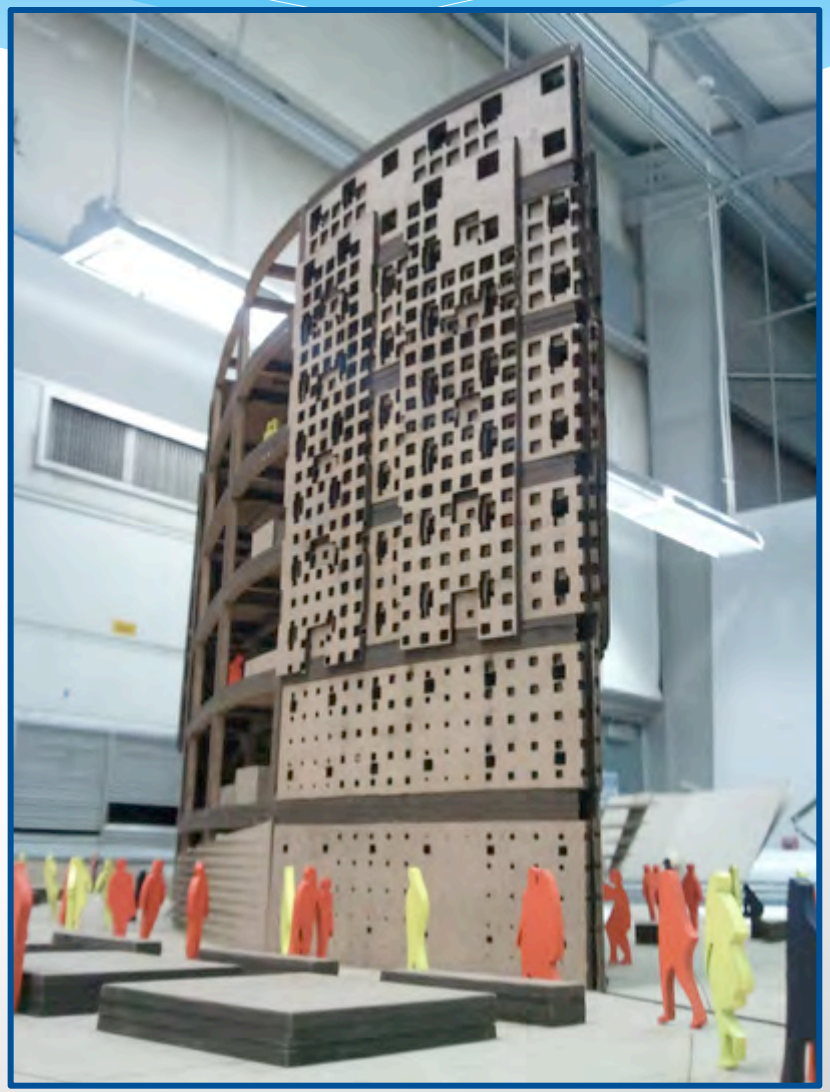
Cal Poly Pomona Design Competition











Cannon Beach, Oregon
Visitor Center Conceptual Drawing

Vertical Evacuation

* FEMA/ NOAA Video

* Could you use this with your audiences?
* How?

Vertical Evacuation

Teachers: Activity Plan

* Part B: Where to put the thing?
  * Physical Maps
  * GoogleEarth

* Need to know:
  * Ground elevation
  * Predicted wave height

But wait . . .

Does your area need one??

Or can a pre-existing building be used?

Vertical Evacuation

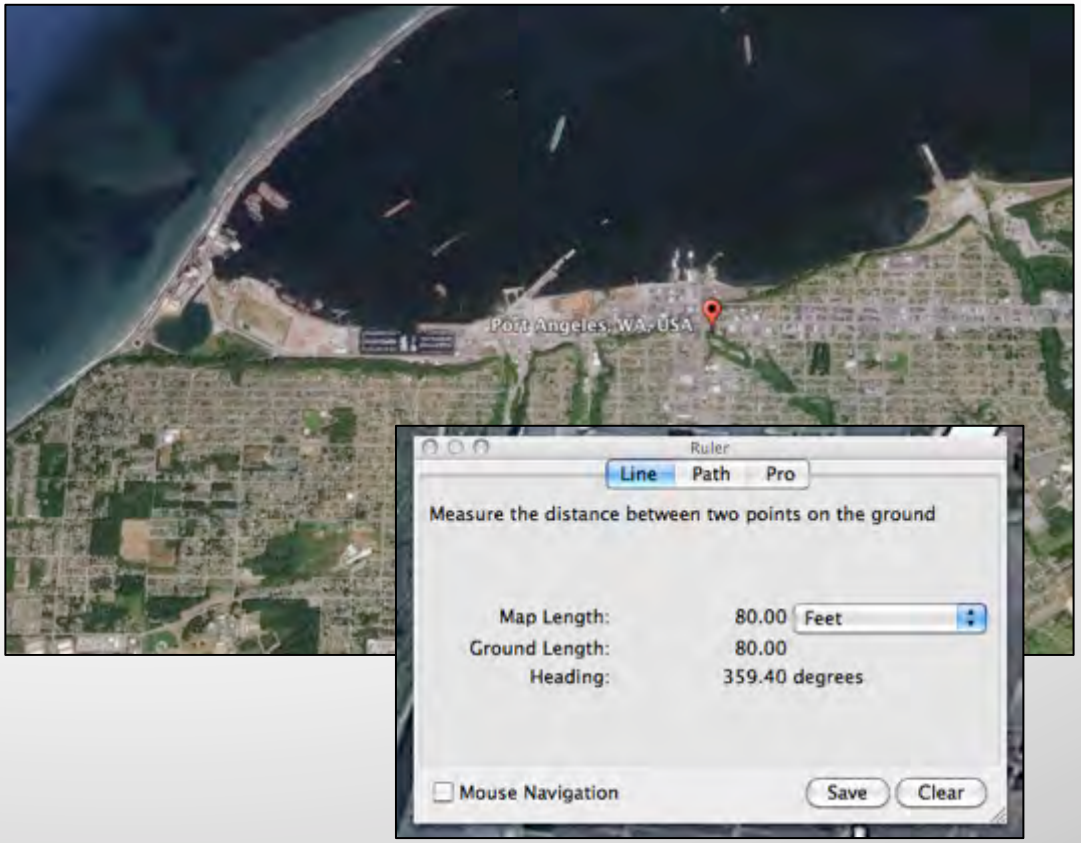
* Maps – which ones?

* Tsunami Inundation Zones – in your map roll!
  * Compare to contour lines on map

Vertical Evacuation

* GoogleEarth

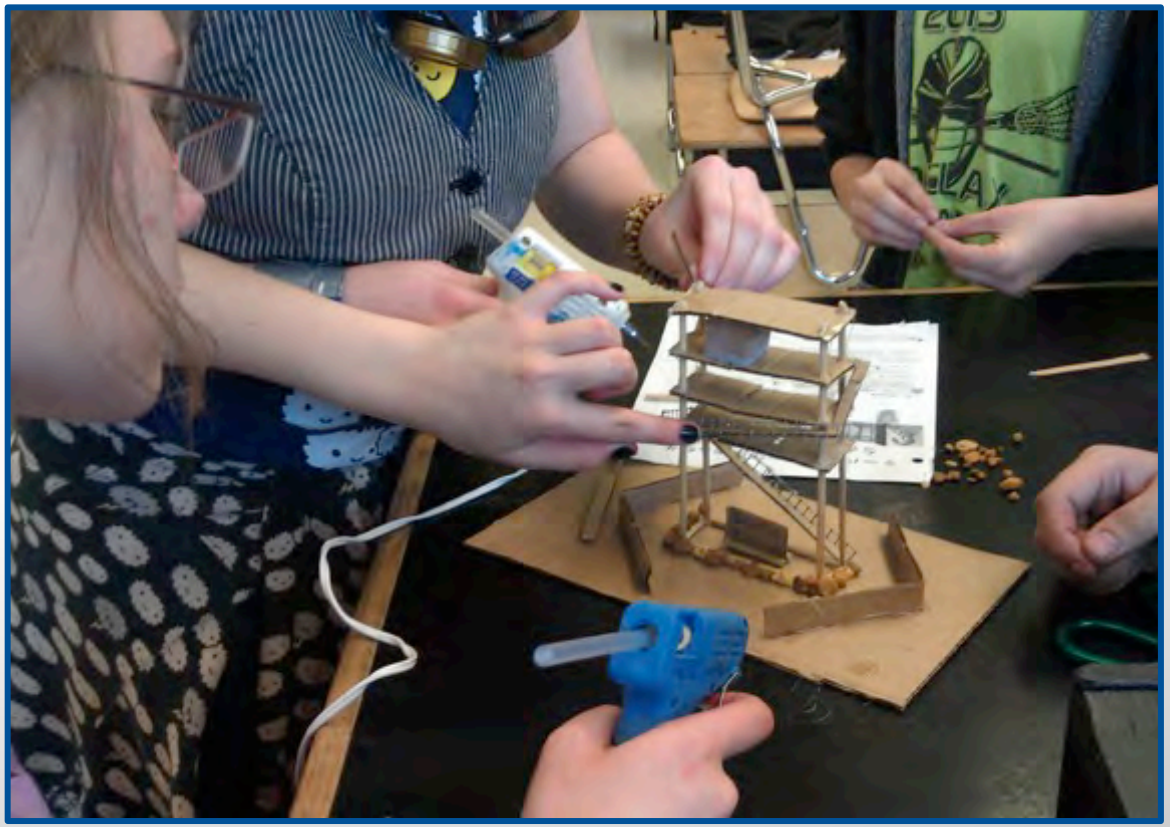
* Best case – get .kmz file of inundation zones to overlay (if they exist . . .)
* Can use Ruler Tool to measure length to determine square footage



Vertical Evacuation

Teachers/PI/EM:

* Part C: Construction process



* Math considerations:
* 10 ft^2 per person

Vertical Evacuation

* Part D: Allow me to explain . . .

Vertical Evacuation

* How could YOU use this?

* Possible Extensions –
  * Build, shake, and inundate?
  * Hatfield Marine Science Center – lego building

* Questions??