Ocosta Elementary School & Tsunami Vertical Evacuation Refuge

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Ocosta Campus

- K-12 classrooms, district offices
- ~700 students, faculty, staff
- 4,000 ft inland, 25 ft elevation
Scope & Design Considerations

• Locate refuge on elementary school roof
  ○ 36,000 sf & $13m construction budget
  ○ 1000 people refuge capacity
  ○ 14’ design inundation depth & 10 ft/s velocity
  ○ 25’ safe refuge elevation (50’ above MHW)

• Access & Egress
  ○ Security & 24/7 access
  ○ Stairs
  ○ Shelter & supplies
Design Solution
Design Solution

- Safe Refuge
- Concrete Shear Walls
- Drilled Piles
- Concrete Encased Columns
Open for Class
Timeline

• 1986: CSZ tsunami threat identified
• 2005: CREW Cascadia Scenario Published
• 2010: Project Safe Haven
• 2013: Ocosta Bond Approved
• 2016: Elementary School Opens
• 2019: Tsunami Building Codes Adopted
FEMA P1000

- Whole Community Approach
- Engage Community Partners
- Communicating with the Community
- Tools and Technology for Effective Communication
Whole Community Approach

- Project Safe Haven
  - Bob Freitag & John Schelling
Whole Community Approach

PROJECT SAFE HAVEN:

TSUNAMI VERTICAL EVACUATION ON THE WASHINGTON COAST

Grays Harbor County

2017 EERI Annual Meeting, Portland, Oregon
Ocosta voters considering funding for new grade school

April 15, 2013

The **new structure will also act as a tsunami refuge** for the public. District officials say the campus is positioned in a more central and slightly higher elevation than other options. Currently, no other

| Sch Dist 172 - Ocosta Proposition No. 1 Bonds to Renovate Ocosta Elementary School |
|---------------------------------|-----------------|-----------------|
| **Combined Total**              | **Approved**    | **Rejected**    |
| All                             | 1,076           | 462             |
| **69.96%**                       | **30.04%**       |
Communicating with the Community
Utilizing Technology

Local News

Originally published October 15, 2013 at 8:49 PM | Page modified October 16, 2013 at 6:04 AM

Grays Harbor County school to build first U.S. vertical-tsunami refuge

ENVIRONMENT

Coming Soon To A Coast Near You: Vertical Tsunami Shelters

A school in Washington will be the first in the U.S. to house a vertical tsunami shelter.

By Mary Beth Griggs October 22, 2014

2017 EERI Annual Meeting, Portland, Oregon

Schools as Leaders in Community Resilience
Utilizing Technology

Elementary school in Westport, WA will be the country's first vertical-tsunami refuge.
Engage Community Partners
Engage Community Partners
Engage Community Partners
Full Circle
Project Team

- Paula Akerlund/Ocosta & Doug Nichols/CSG
- Brian Ho & Brian Fitzgerald/TCF Architecture
- Dan Trisler/Hart Crowser
- Ken Goettel/Goettel & Associates
- Frank Gonzalez, et al./UW
- John Schelling/WA EMD
- Tim Walsh/WA DNR
- Chuck Wallace/Grays Harbor County EM
- Gary Chock, Ian Robertson (ASCE 7-16 subcommittee)
- WA National Guard (ribbon cutting photos)
Thank You!

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