



# Meeting Notice

Join us for an educational presentation

## Rehabilitation of Timber Structures

Paul C. Gilham, P.E., S.E., Western Wood Structures, will give a presentation that will highlight common reasons for reinforcing timber members. Paul will provide case study examples involving truss and beam rehabilitation projects that have been complete. He will demonstrate why the rehabilitation was required and the process in which it was completed.

**DATE:** Tuesday, March 1, 2011

**TIME:** 4:45 p.m. – 6:30 p.m.  
Presentation will begin promptly  
at 5:00 p.m.  
(includes Q & A)

**LOCATION:** Odeh Engineers, Inc.  
1223 Mineral Spring Ave  
North Providence, RI 02904

**SPEAKER:** Paul C. Gilham, P.E., S.E.  
Chief Engineer  
Western Wood Structures

**FEE:** Free to SEARI members or join  
at the door for \$60.00/year (includes  
5 events/year + Structure Magazine)  
(A special single meeting fee of \$10  
for prospective members is accepted)

**RSVP:** Please e-mail  
suttonr@odehengineers.com  
Or call 401-724-1771

**FOOD:** Light appetizers and beverages will be  
served at 4:45pm

For additional information regarding this presentation,  
go to [www.seari.org](http://www.seari.org)

# Rehabilitation of Timber Structures

Paul C. Gilham, P.E., S.E.  
Chief Engineer  
Western Wood Structures, Inc.

## Outline

1. Common Reasons for Reinforcing Timber Members
  - A. Changes in Code Prescribed Loading
  - B. Changes in Allowable Stresses for Timber
  - C. Change in End Use of Structure
  - D. Reduced Cross Section
  - E. Damage Structures.
2. Truss Rehabilitation – Parrish Middle School
  - A. Changes to Snow Load Criteria
  - B. Reduction of Allowable stresses
  - C. Limitations of classical truss analysis
  - D. Repair Methods
    - i. Remove and Replace Broken Members
    - ii. Stiffening compression members
    - iii. Post-tensioning tension members
  - E. EOR/Specialty Contractor Teamwork
3. Beam Rehabilitation – Reynolds High School
  - A. Reduction of Allowable stresses
    - i. No tension laminations before 1970
    - ii. Change from  $C_F$  to  $C_V$
    - iii. Comparison of 1966 and 2008 beam design
  - B. Use of Cable Post-Tensioning
  - C. Reinforcing Beams for “Shear” Failures.
    - i. Common Causes of “Shear” Failures
    - ii. Design of Shear Dowels
    - iii. Installation of Shear Dowels
  - D. Increasing Member Stiffness
    - i. Adding Laminations
      - a. Shored vs. Unshored Construction
    - ii. Adding side members
    - iii. Limitations to adding steel plates or sections