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Engineering News-Record

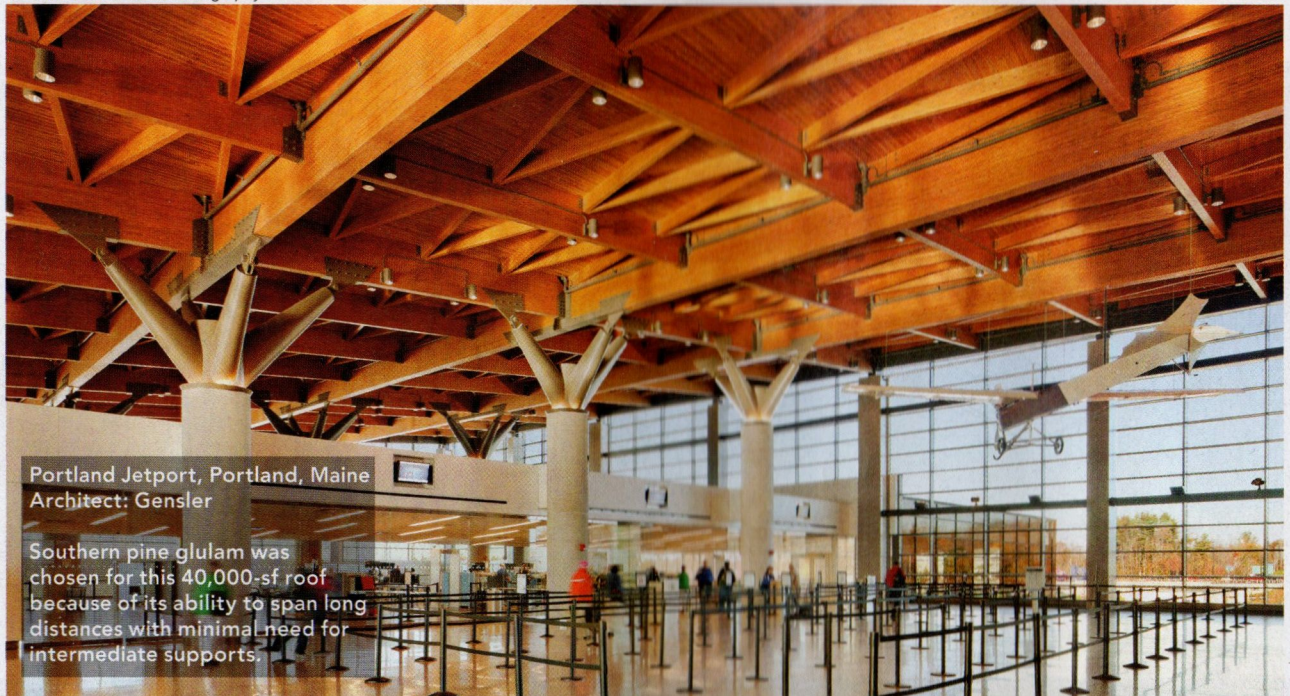
2015 Global Sourcebook

Political, price volatilities unsettle markets (p. 49)

CONNECTING CONTINENTS

Backed by international talent,
a Turkish-Korean team
builds the first vehicular link
under the Bosphorus Strait (p. 22)

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Portland Jetport, Portland, Maine
Architect: Gensler

Southern pine glulam was chosen for this 40,000-sf roof because of its ability to span long distances with minimal need for intermediate supports.

Connection Options for Wood-Frame and Heavy Timber Buildings

Effective solutions provide strength, stiffness, stability and ductility

Sponsored by reThink Wood

The use of wood as a structural material continues to grow far beyond traditional applications, such as single-family homes and buildings up to four stories. Although recent attention has focused on the possibility of wood high-rises, wood's cost-effectiveness, versatility and light carbon footprint are already making it a material of choice for an expanding range of building types—from innovative public, educational and corporate structures that utilize mass timber products as their main architectural expression, to five-story (and higher) multi-family projects built with dimension lumber using long-established techniques. An essential element common to all of these buildings is effective connections.

In wood buildings, effective connections provide strength, stiffness, stability and ductility in addition to

providing a continuous load path to the foundation. They are critical to building performance—under regular loads, and especially during extreme events such as hurricanes and earthquakes. According to post-disaster surveys, structural failures during these events are often due to faults in connection design or assembly.

This continuing education course provides an overview of connection options for modern wood structures, both light wood-frame and heavy timber (see glossary). It covers mechanical connections—including dowel, shear and metal connector plates with integral teeth—and joinery connections, as well as proprietary connections that are in many ways supporting the current surge in innovative wood design. Proper selection and installation, and ways to avoid potential problems, are also discussed.

CONTINUING EDUCATION



EARN ONE AIA/CES HSW
LEARNING UNIT (LU)

Learning Objectives

After reading this article, you should be able to:

1. Describe the basic categories of mechanical and joinery connections for modern wood structures, and their application in both light wood-frame and heavy timber construction.
2. Examine the wide range of connection options available today, from traditional joinery methods to widely used fasteners and connectors to the innovative proprietary connection systems that are enabling longer wood spans, higher walls and taller buildings.
3. Apply practical and technical design guidance to ensure effective performance of connections in wood structures.
4. Discuss key considerations for selection and installation of connections, for best performance and to avoid potential problems.

To receive AIA/CES credit, you are required to read the entire article and pass the test. Go to ce.enr.com for complete text and to take the test for free.

This course also qualifies for Professional Development Hours (PDH): Submit a certificate of completion for PDH credit to your state licensing board. Check your state licensing board for all laws, rules, regulations and continuing education requirements.

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