# Construction Information

# Small-Diameter Roundwood Kiosk

## Roundwood Construction

Building with round logs is not a new concept—our ancestors used large (>10 in.) round logs to build their dwellings. Those structures, however, were labor intensive and an inefficient use of the wood resource. So, what has changed?

Today, structures built from small-diameter (≤6 in.) round timbers have new fastening systems and connections and are engineered to meet performance specifications. Through engineering design, trusses made from small-diameter roundwood balance more closely the required wood resource with the required structural performance.

Roundwood structures built nowadays are less labor intensive, provide an efficient use of our wood resource, and still have the equivalent load capacity of the large round timbers used historically.

A variety of softwood species can be used in roundwood construction, and hardwoods are also an option. A very weak species of wood might require slightly larger members, especially if there will be high snow loads.

The kiosks shown on the cover were built using lodgepole pine and are 24 feet in diameter. However, plans are also available for buildings that are 16 and 36 feet in diameter.

## Connectors

The first kiosks constructed used bolts so that they could be disassembled and moved. Other more permanent connections, such as gunpowder-driven nails, are an easier option, especially in a production setting.

## Roof and Floor

Structural options for the roof include purlins, framed, plywood, tongue and groove, and structural insulated panels (SIPs). Any roofing material can be used, including cedar shakes, metal, and asphalt. Treated lumber or cedar should be used where the structure comes in contact with the ground. Although more expensive, SIPs are an option for both the roof and floor.

Small-diameter timber is an option for flooring as well as pouring a concrete floor.

## Walls (Optional)

The walls for the enclosed kiosk (shown on cover) are 2- by 4-in. boards sheathed with rough-sawn cedar. Walls could also be made using plywood, canvas, or other nonstructural material. If walls are not used, braces must be used to provide racking resistance.

## Load

The kiosks on the front cover were designed to handle more than 100 lb/ft$^2$ of load, which is about 20 ft of fresh snow or 2 ft of solid ice. Reductions in diameter of roundwood material are possible when less load is expected or a strong roundwood, such as Douglas-fir, is used.

## Engineering Plans

Engineering plans for small-diameter roundwood kiosks are available for a small fee from Beaudette Consulting Engineers, Inc. For information on obtaining these plans, please contact


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For more information on the building process, visit
http://www.fpl.fs.fed.us/tmu/roundwoodkiosk2002.htm

### Advantages of Using Small-Diameter Roundwood

- Retains its strength
- Resists warp
- Maintains dimensional stability
- Minimizes processing costs
- Helps offset cost of forest restoration




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