



### Introduction

WholeTrees® manufactures pre-engineered trusses made from unmilled round timbers, an abundant byproduct of sustainable forest management. WholeTrees uses cull trees 4"-12" in diameter that are 50% stronger than comparably sized milled lumber. These trusses provide a low embodied energy and high CO<sub>2</sub> capture alternative to steel and mass timber. They integrate with a variety of conventional construction materials and are a cost-effective way to add aesthetic value and sustainability credits to your building project. Product packages come with engineered steel connections, PE-stamped shop drawings, and easy installation guidelines. WholeTrees trusses embody an elegant confluence of nature and technology, and their remarkable strength is complemented by their visual impact.

### Product Overview

- Spans between 20' and 60'
- Bears loads up to 800 lbs/l.f.
- Solutions for addressing wind loads, lateral bracing, deflection, and creep
- Fire ratings for Type II-V construction
- Details available for easy integration with other structural systems
- 30-year structural warranty

### The Story Behind our Trees



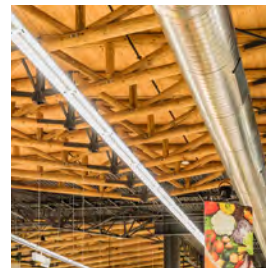
**SELECTION** →  
Sustainably managed forests



**FABRICATION** →  
Prefabricated and third-party graded



**INSTALLATION** →  
WholeTrees install crews available



**OPERATION** →  
Improved human habitats



**SEQUESTRATION**  
Renewable and regenerative resources

### Resource Sustainability

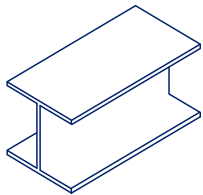
Choosing to build with round timber provides numerous benefits for both consumers and building professionals. In addition to its structural properties, competitive strength-to-weight ratio, and ease of construction, timber sequesters carbon and requires less energy to produce than steel or concrete. Timber is a recyclable, renewable, biodegradable, and abundant sustainable building material.

WholeTrees<sup>®</sup> products:

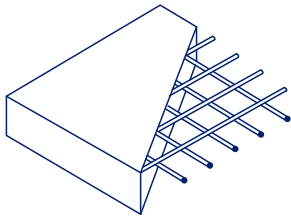
- Can be FSC certified upon request
- Carry the Living Future Institute's Declare label
- Qualify for up to 8 LEED v4 credits
- Show transparency with a Health Product Declaration

### Carbon Emissions by Structural Material

Timbers sequester carbon in service, and the well-managed forests from which they are sourced increase their carbon uptake.



Steel  
+ 12,200 kg CO<sub>2</sub> / m<sup>3</sup>



Concrete  
+ 385 kg CO<sub>2</sub> / m<sup>3</sup>



WHOLETREES<sup>®</sup>

Timber  
- 900 kg CO<sub>2</sub> / m<sup>3</sup>

Illustrations and carbon emissions data from AnArchitecture.

### Truss Components

WholeTrees<sup>®</sup> parallel chord trusses are fabricated with red pine harvested from suppressed stands in Wisconsin. Regionally specific and on-site sourcing are also available upon request to represent your project's local forest ecology.

Top Chords

5" - 9" diameter red pine (unless otherwise specified)

Bottom Chords

5" - 9" diameter red pine (unless otherwise specified)

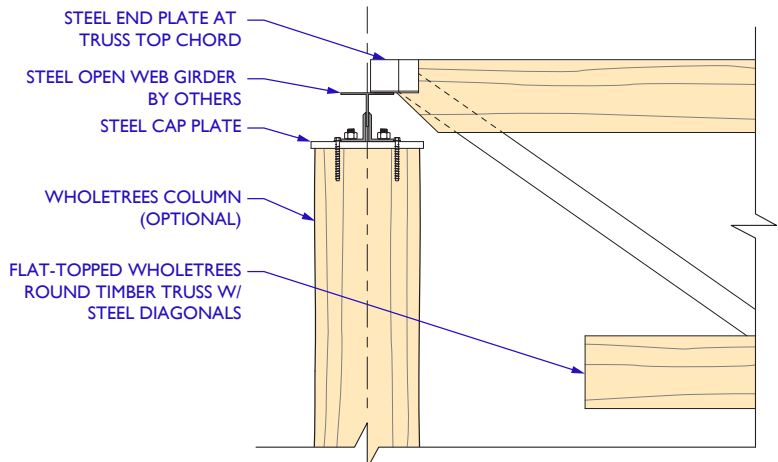
Vertical Webs

Red pine (unless otherwise specified)

Diagonal Webs

3/8" T x 2" steel

### Sample WT Truss Connection to Steel Girder

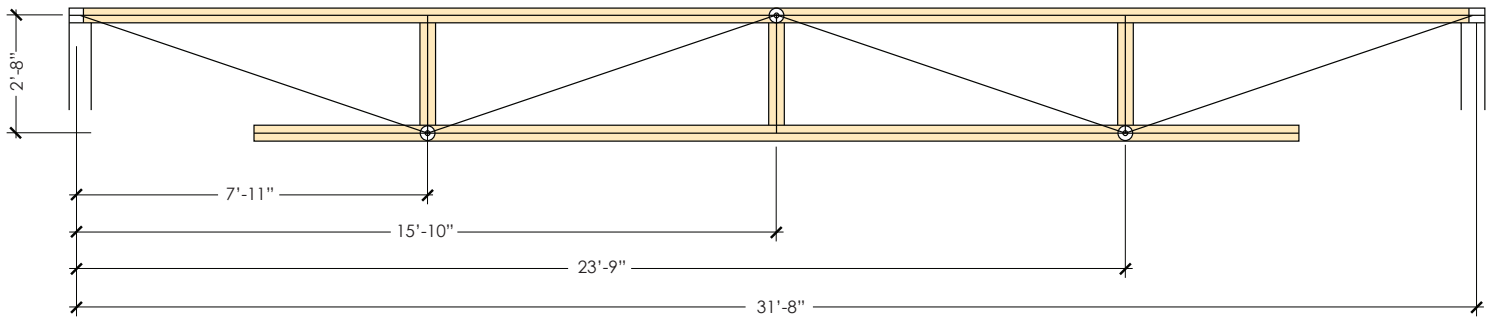


### Warranty Information

All WholeTrees products come with a 30-year warranty guaranteeing the absence of defects in workmanship and materials over the useful life of the structure, provided that the product is used in strict conformance with WholeTrees' published design limits and installation procedures.

### General Notes

- Values in tables below assume 8" diameter chords, 2" thick steel bearing plates, 3/8"x 2" tension diagonals, and 2"x 2"x 3/8" compression diagonals
- Compression chords are braced every 2'
- Bridging is installed at mid-span of truss length
- Loads include both live loads and dead loads
- Shear load is transferred between chords and webs through a steel bearing plate attached to each truss panel point



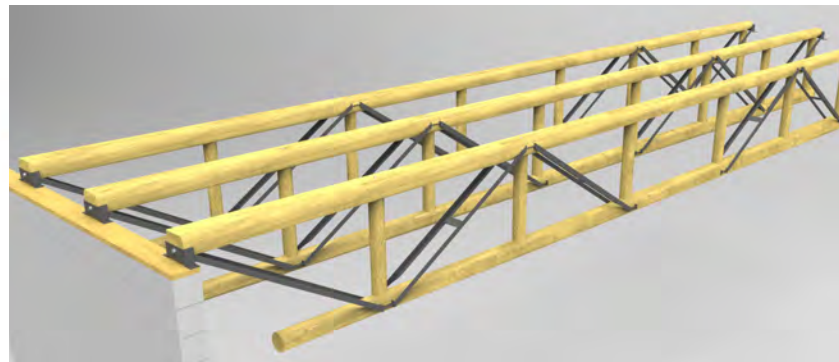
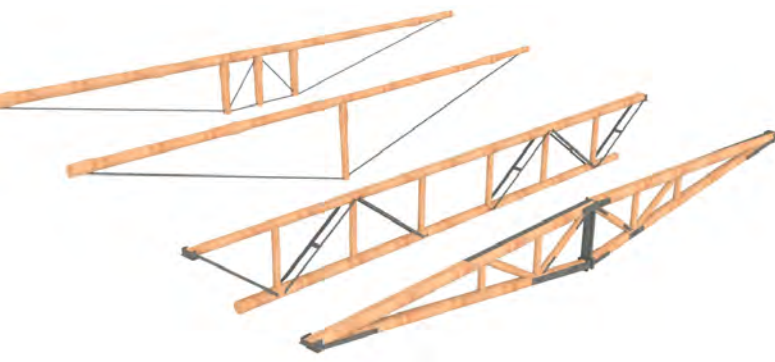
### Allowable Uniform Load Table (plf)

Span	Depth			
	24"	30"	36"	42"
20'	650	890	1140	1380
22'	540	740	940	1140
24'	450	620	790	960
26'	380	530	670	820
28'	330	450	580	700
30'	290	390	500	610
32'	250	350	440	540
34'	220	310	390	480
36'	200	270	350	420
38'	180	240	310	380
40'	160	220	280	340

### Deflection Table (in)

Span	Depth			
	24"	30"	36"	42"
20'	0.34	0.30	0.27	0.26
22'	0.41	0.36	0.32	0.30
24'	0.48	0.42	0.38	0.36
26'	0.56	0.49	0.43	0.40
28'	0.65	0.56	0.50	0.45
30'	0.75	0.63	0.56	0.51
32'	0.83	0.73	0.63	0.57
34'	0.93	0.81	0.71	0.64
36'	1.07	0.90	0.80	0.70
38'	1.19	0.99	0.87	0.78
40'	1.30	1.11	0.96	0.86

Additional engineering data for alternate truss designs available upon request.



## Unrivaled Expertise in Round Timber

WholeTrees is the national leader in engineering of natural, unmilled timber for commercial construction, with over 10 years of experience bringing pre-engineered round timber structural systems to national markets. We provide expert assistance in design, code compliance, and PE-stamped engineering documents. Contact us for more information.

## Benefits of WholeTrees

- Carbon-negative, renewable, and non-toxic
- Sourced from sustainably managed forests
- Type II, III, IV, and V construction
- Heavy Timber classification in the IBC
- ASTM standard compliant
- Installation services available nationwide

## WholeTrees for Healthier Forests

Our vision is to provide beautiful, affordable, and durable structural systems that also restore forests. WholeTrees timbers are byproducts of sustainable forest management, which is a main pillar of our philosophy. Forest thinning allows the woodland as a whole to thrive, catalyzing growth and biodiversity.

Under-maintained forests are not just an under-performing asset class, they are also more susceptible to wildfires, disease, and clearance in favor of more immediately lucrative land uses. By making forests' health more profitable, we can make healthy forests more abundant.

**ARCHITECT**

As seen in ARCHITECT Magazine's 2017 R+D Awards

