



# Mass Timber: Shifting Labor from Jobsite to Shop



## Schedule Savings and Safer Construction Sites

Mass timber provides an opportunity to erect structures faster and with less on-site labor than other material systems. According to Lendlease, the four-story Candlewood Suites hotel at Redstone Arsenal, AL was built **37% faster** overall and with **40% fewer construction workers** than a similar cold-formed steel military hotel.<sup>1</sup>

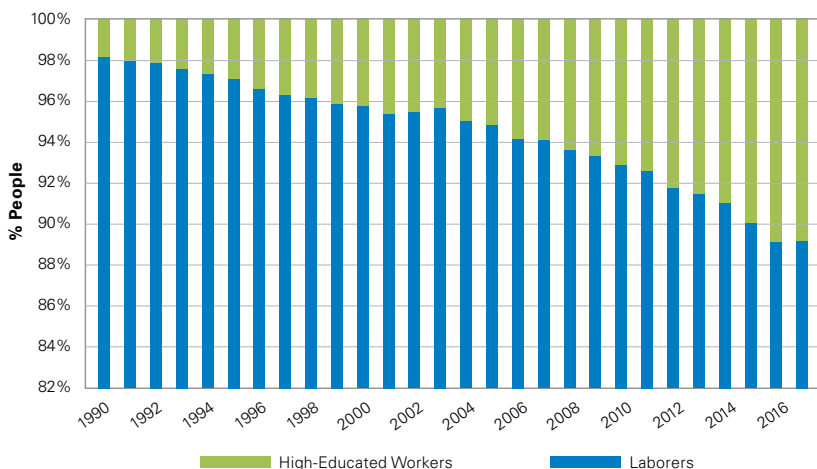
<sup>1</sup>Mass Timber Design & Cost Optimization Checklist – WoodWorks

Small crews set prefabricated mass timber panels into place for a Candlewood Suites hotel at Redstone Arsenal, AL. Safety rails were pre-installed in the shop.

Lendlease

## Mass Timber Aligns with Labor Trends

It isn't news that the construction industry is dealing with a labor shortage. In many cases, experienced laborers who lost their jobs in the Great Recession didn't return to the workforce, or they're now at retirement age. Our culture's emphasis on going to college has also impacted the industry's ability to attract young workers. As the number of high-educated (HL) workers has grown, laborers (L) have become increasingly scarce.



Source: Business Payrolls Survey 2017

**Mass timber can help increase jobsite safety.** Once the panels are placed for one story, follow-up trades (e.g., MEP) can start working on the story below, without having to work around shoring or other overhead equipment.

For Candlewood Suites at Redstone Arsenal, Bill Tobin, VP and Master Superintendent at Lendlease, also noted that “CLT panels allowed us to erect walls quickly and safely, with very few crew members working in the radius and swing fall of the crane.”



### Mass Timber

- No cure times
- No shoring
- Follow-up trades start below

### Concrete

- Cure times
- Shoring
- Follow-up trades wait

Because mass timber is prefabricated, it shifts traditional on-site labor to digital fabrication shops, controlled environments where work is more efficient.



Cross-laminated timber (CLT) being produced at the DR Johnson manufacturing facility

### More highly-skilled jobs

Digital fabrication shops require teams of highly-skilled workers for 3D-modeling and to generate programming code needed to run robotic and computer numerically controlled (CNC) machines. More universities now offer robotic and CNC programming within their architectural and other degree programs, and the demand for graduates is expected to grow across multiple industry sectors. In addition to workers doing advanced modeling in a desk/office setting, there is a need for CNC operators on the shop floor.

Shifting labor to manufacturing/fabrication facilities creates safer work environments both in the shop and on construction sites, where fewer laborers mean less interaction and accident potential.

Craig Triplett, Assistant Director of the Chicago Regional Council of Carpenters, has a positive outlook on mass timber.

**“It’s not going to be something that negatively impacts the industry. With mass timber buildings going up faster, it helps contractors to deliver on a tight schedule.”**

### Availability of trained installers

To increase the number of experienced mass timber installers, WoodWorks developed educational materials and supplied building mock-ups for installer training courses, and has partnered with union training centers for delivery.

To date, WoodWorks has collaborated with the **Chicago Regional Council of Carpenters (CRCC)** Apprentice & Training Program and the **Northwest Carpenter’s Institute of Washington**, which have awarded more than 2,500 training hours.

WoodWorks is pursuing other union partnership opportunities across the country, and is also collaborating with a major general contractor to offer training in-house.

## Considering wood? Ask us anything.

As a **ULI Greenprint Innovation Partner** WoodWorks offers free project support for developers and design/construction teams using wood for commercial and multi-family buildings. Contact the **expert nearest you** or email [help@woodworks.org](mailto:help@woodworks.org). For a map of completed mass timber buildings and to connect with the design and builder teams, visit the **WoodWorks Innovation Network**.