TALL TIMBER BUILDINGS

Where Sustainability Meets Performance
Ricky McLain, PE, SE
Senior Technical Director – Tall Wood
WoodWorks, Wood Products Council
Tall Timber Buildings: Where Sustainability Meets Performance

Presented by Ricky McLain, PE, SE, WoodWorks

Image: Hickok Cole
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As shapers of the built environment, developers and design teams often have the opportunity—some would say responsibility—to address societal issues through their work. Globally, the groundswell of tall timber buildings has been motivated by the urgent need for housing density in urban areas, and the equally urgent need to respond to the climate crisis by reducing and offsetting carbon emissions. In this session, WoodWorks discusses the global precedent for tall mass timber buildings before exploring their relatively new but globally influential presence in the United States. While other countries have been constructing tall wood buildings for a decade, the U.S. is one of the first to include provisions in its model building code allowing them prescriptively. Topics will include aspects of mass timber’s value proposition that are particularly resonant in the context of U.S. construction and market realities, affects on sustainability, forest health and rural economies, and current trends. We’ll highlight projects built and in design, and cover design topics that are crucial to realizing a successful mass timber building, including fire resistance, structural layout, connections and details, occupant comfort, cost optimization, building enclosure, and prefabrication.
Learning Objectives

1. Review the global history of tall wood construction and highlight the mass timber products used in these structures.

2. Explore the work and conclusions of the ICC Ad Hoc Committee on Tall Wood Buildings in establishing 17 new code provisions for the 2021 IBC that address tall wood construction.

3. Discuss differences between the new tall wood mass timber construction types and existing construction types.

4. Identify the key passive fire-resistance construction requirements and active systems that enable taller wood buildings to be built safely.
The What, Why and How of Tall Mass Timber
As of June 2021, in the US, 1,169 multi-family, commercial, or institutional projects have been constructed with, or are in design with, mass timber.

Source: WoodWorks, June 30, 2021

* This total includes modern mass timber and post-and-beam structures built since 2013

TALL MASS TIMBER
ASSESSING THE WHAT
BROCK COMMONS, BRITISH COLUMBIA

18 STORIES | 174 FT
MJOSTARNET, NORWAY

18 STORIES | 280 FT
CARBON12, PORTLAND, OR

8 STORIES | 85 FT
INTRO, CLEVELAND

9 Stories | 115 ft
8 Timber Over 1 Podium

512,000 SF
297 Apartments, Mixed-Use

Photo: Harbor Bay Real Estate Advisors, Image Fiction | Architect: Hartshorne Plunkard Architecture
ASCENT, MILWAUKEE

25 STORIES

19 TIMBER OVER 6 PODIUM, 284 FT

Photo: Korb & Associates Architects | Architect: Korb & Associates Architects
3 STORY VERTICAL ADDITION ON EXISTING 7 STORY BUILDING

Photo: Hickok Cole | Architect: Hickok Cole
NIR CENTER, PORTLAND, OR
NIR CENTER, PORTLAND, OR

10 STORIES
Type IV-B Construction
Hybrid Mass Timber + Steel

Photo: Hennebery Eddy Architects | Architect: Hennebery Eddy Architects
APEX CLEAN ENERGY HQ
CHARLOTTESVILLE, VA
187,000 SF
8 STORIES
6 TIMBER OVER 2 PODIUM, 100 FT
TALL MASS TIMBER
UNDERSTANDING THE WHY
Global Population Increase

2020 = 7.8 billion people

2050 = 9.9 billion people

Source: www.prb.org
New Buildings & Greenhouse Gases

Buildings generate nearly 40% of annual global greenhouse gas emissions (building operations + embodied energy)

Embodied energy: 11%
Concrete, iron, steel ~9%
Carbon Terms

- **Embodied Carbon**: Carbon emissions associated with the entire life cycle of the building including harvesting, mining, manufacturing, transporting, installing, maintaining, decommissioning, and disposing/reuse of a material or product.

- **Operational Carbon**: Carbon emissions associated with operating a building including power, heat, and cooling.
Embodied Carbon

- Primarily related to **manufacturing of materials**
- More significant than many people realize, has been **historically overlooked**
- Big upfront GHG “cost” - which makes it a **good near-term target** for climate change mitigation
More Carbon Terms

**Carbon Sequestration:** The process by which CO$_2$ is **removed** from the atmosphere and deposited in solid or liquid form in oceans, living organisms, or land.

**Carbon Storage:** Carbon is **stored as a solid** in the form of plant material: roots, trunks, branches, stems, and leaves. It can continue to be stored in **wood building materials**.
Carbon Benefits of Wood

- **Less energy intensive** to manufacture than steel or concrete
- **Less fossil fuel consumed** during manufacture
- **Avoid process emissions**
- **Carbon storage in forests** and promote forest health
- **Extended carbon storage in products**
Carbon Storage
Wood ≈ 50% Carbon (dry weight)
Whole Building Life Cycle Analysis (WBLCA)

“Evaluation of the inputs, outputs, and potential environmental impacts… throughout its life cycle”

• WBLCA covers all stages in the life cycle of a building and its components

• Several tools available; various methodologies

• [https://www.thinkwood.com/education/calculate-wood-carbon-footprint](https://www.thinkwood.com/education/calculate-wood-carbon-footprint)

WoodWorks Carbon Calculator

- Available at woodworks.org
- Estimates total wood mass in a building
- Relays estimated carbon impacts:
  - Amount of carbon stored in wood
  - Amount of greenhouse gas emissions avoided by choosing wood over a non-wood material

![Image of carbon calculator results]

- Volume of wood used: 208,320 cubic feet
- U.S. and Canadian forests grow this much wood in: 17 minutes
- Carbon stored in the wood: 4,466 metric tons of CO₂
- Avoided greenhouse gas emissions: 9,492 metric tons of CO₂
- TOTAL POTENTIAL CARBON BENEFIT: 13,958 metric tons of CO₂

**Equivalent to:**
- 2,666 cars off the road for a year
- Energy to operate a home for 1,186 years

Source: US EPA

http://www.woodworks.org/carbon-calculator-download-form/
Tallhouse, Boston

Source: Generate Architecture
Tallhouse Boston

GLOBAL WARMING POTENTIAL & MATERIAL MASS
(PER BUILDING ASSEMBLY)
Source: Generate Architecture

The total global warming potential (GWP) of each option is shown with a breakdown by building assembly. The Concrete Wall and Concrete Flat Slab options have the highest GWP, with the bulk of the impact embedded in the floor slabs. The Timber Use 1 (Floor Slabs; Steel Frame) option offers a slight reduction in GWP, with most of the savings also embedded in the floor slabs. The Timber Use 2 (Floor, Beam, and Plate) option offers a relatively typical approach to building with timber, showing savings in floor slabs, beams, and columns. Since Timber Use 3 and 4 are cellular approaches with load-bearing walls, these options included steel podiums to accommodate the ground floor program. Timber Use 3 shows how a hybrid approach with light gauge metal yields GWP savings in structural walls and exterior walls, despite the addition of the podium. Lastly, Timber Use 4 emphasizes how a completely cellular CLT approach provides the lowest GWP.
Is Mass Timber A Sustainable Construction Material Choice?
Common Environmental Concerns About Specifying Wood

1. Is North America running out of Forests?

2. Does specifying wood products contribute to deforestation?

3. Is wood is a renewable resource?
U.S. Forest Land:
Forest Area in the United States 1630 – 2012

Forest Area has been stable for 100 years.

State of our Forests: US Timber Volume on Timber Land

Volume of Trees has been growing for 60+ years!

US Forest Lands

Forest Land Ownership

This map displays the basic vegetation (forest vs. non-forest) of the conterminous United States as well as ownership (private vs. public). The lands displayed as "public" include Federal and State lands but do not generally include lands owned by local governments and municipalities.
US Forest Lands

Forest Land Ownership

This map displays the basic vegetation (forest vs. non-forest) of the conterminous United States as well as ownership (private vs. public). The lands displayed as "public" include Federal and State lands but do not generally include lands owned by local governments and municipalities.

56% Privately Owned
42% Family Owned
Economic value of forest products is motivation for private landowners to keep land forested.
Regeneration vs. Deforestation

Deforestation is the permanent conversion of forest land to non-forest land uses. Worldwide, agricultural expansion is the main driver of deforestation, but in the U.S., the rate of deforestation has been virtually zero for decades.

Forest Management
Forests are more than Lumber Factories

- We can balance the long-term and short-term desires and the multiple uses through responsible forest management.
- Best Management Practices (BMPs)
- State, Federal and Provincial monitoring and forest inventory programs
- Forestry Practices and Laws
- Professional Logger Training and Certification
- Sustainable Forest Management Systems
Good Forestry = Sustainable Forestry

“Forestry is the art and science of creating, using and conserving forests. The forestry profession was a pioneer in developing techniques for sustainable management and, later, techniques for the multiple use of forests. [...] The term sustainable forest management is synonymous with good forestry”.

Photos: Oregon Forest Resources Institute
Sustainable Forestry Management Systems

- Wood from well-managed forests is sustainable over the long term.
- Forest certification shows that the wood comes from well-managed forests.
- The major North American programs are:

FSC  SFI  CSA  ATFS
Climate Change – Impacts on Forests and Planet
Biophilic Design, Connection to Forests

George Fox University – Canyon Commons
Hacker | Photo: Jeremy Bittermann
Construction Impacts: Labor Availability
Tall Mass Timber: Structural Warmth is a Value-Add
TALL MASS TIMBER
DEMONSTRATING THE HOW
Glue Laminated Timber (Glulam)
Beams & columns

Cross-Laminated Timber (CLT)
Solid sawn laminations

Cross-Laminated Timber (CLT)
SCL laminations

Photo: StructureCraft
Photo: Lend Lease
Photo: Freres Lumber
Photo: LEVER Architecture
Dowel-Laminated Timber (DLT)

Nail-Laminated Timber (NLT)

Glue-Laminated Timber (GLT)
Plank orientation

Photo: StructureCraft

Photo: Think Wood

Photo: StructureCraft

Photo: StructureCraft

Photo: Ema Peter

Photo: Manasč Isaac Architects/Fast + Epp
Mass Timber Connections

Concealed Connectors

Self Tapping Screws

Photos: Rothoblaas
Mass Timber Connections

Beam to Column

Photo: StructureCraft

Photo: Structurlam
Exterior Envelope Prefabrication
Efficiency found in understanding supply chain, designing according to its capabilities.
TALL WOOD IN THE CODE
2018 IBC and All Previous Editions:

- Prescriptive Code Limit - 6 stories (B occupancy) or 85 feet

- Over 6 Stories - Alternate Means and Methods Request (AMMR) through performance based design

- Based on the 1910 Heights and Areas Act
3 YEAR CODE CYCLE

Source: ICC
Seen as the catalyst for the mass timber revolution, CLT first recognized in US codes in the 2015 IBC

[BS] CROSS-LAMINATED TIMBER. A prefabricated engineered wood product consisting of not less than three layers of solid-sawn lumber or structural composite lumber where the adjacent layers are cross oriented and bonded with structural adhesive to form a solid wood element.

2303.1.4 Structural glued cross-laminated timber. Cross-laminated timbers shall be manufactured and identified in accordance with ANSI/APA PRG 320.
Interest in tall wood projects in the US was rapidly increasing. Some building officials were reluctant to approve proposed plans, primarily due to lack of code direction and precedent.
In December 2015, the ICC Board established the ICC Ad Hoc Committee on Tall Wood Buildings. Objectives:
1. Explore the building science of tall wood buildings
2. Investigate the feasibility, and
3. Take action on developing code changes for tall wood buildings.
TALL WOOD APPROVED!
Unofficial results posted Dec 19, 2018
Final votes ratified Jan 31, 2019

AWC: Tall Mass Timber code changes get final approval
Dec 19, 2018

LEESBURG, VA. – The International Code Council (ICC) has released the unofficial voting results on code change proposals considered in 2018, including passage of the entire package of 14 tall mass timber code change proposals. The proposals create three new types of construction (Types IV-A, IV-B and IV-C), which set fire safety requirements, and allowable heights, areas and number of stories for tall mass timber buildings. Official results are expected to be announced during the first quarter of 2019. The new provisions will be included in the 2021 International Building Code (IBC).

“Mass timber has been capturing the imagination of architects and developers, and the ICC result means they can now turn sketches into reality. ICC’s rigorous study, testing and voting process now recognizes a strong, low carbon alternative to traditional tall building materials used by the building industry,” said W. Lane Judd, interim ICC CEO.

2021 IBC Introduces 3 new tall wood construction types: IV-A, IV-B, IV-C
Previous type IV renamed type IV-HT
NEW CONSTRUCTION TYPES

Type IV-A
- Office (18 stories)
- Mercantile (12 stories)

Type IV-B
- Office (12 stories)
- Mercantile (8 stories)

Type IV-C
- Office (9 stories)
- Residential (8 stories)
- Assembly Mercantile (6 stories)

Dimensions:
- Type IV-A: 270 ft.
- Type IV-B: 180 ft.
- Type IV-C: 85 ft.
Type IV-C

9 STORIES
BUILDING HEIGHT 85'
ALLOWABLE BUILDING AREA 405,000 SF
AVERAGE AREA PER STORY 45,000 SF

TYPE IV-C

Credit: Susan Jones, atelierjones

Photos: Baumberger Studio/PATH
Architecture/Marcus Kauffman
Type IV-C Protection vs. Exposed

All Mass Timber surfaces may be exposed

Exceptions: Shafts, concealed spaces, outside face of exterior walls

Credit: Susan Jones, atelierjones

Credit: Kaiser+Path, Ema Peter
# Type IV-C Height and Area Limits

<table>
<thead>
<tr>
<th>Occupancy</th>
<th># of Stories</th>
<th>Height</th>
<th>Area per Story</th>
<th>Building Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-2</td>
<td>6</td>
<td>85 ft</td>
<td>56,250 SF</td>
<td>168,750 SF</td>
</tr>
<tr>
<td>B</td>
<td>9</td>
<td>85 ft</td>
<td>135,000 SF</td>
<td>405,000 SF</td>
</tr>
<tr>
<td>M</td>
<td>6</td>
<td>85 ft</td>
<td>76,875 SF</td>
<td>230,625 SF</td>
</tr>
<tr>
<td>R-2</td>
<td>8</td>
<td>85 ft</td>
<td>76,875 SF</td>
<td>230,625 SF</td>
</tr>
</tbody>
</table>

Areas exclude potential frontage increase

In most cases, Type IV-C height allowances = Type IV-HT height allowances, but add’l stories permitted due to enhanced FRR

Type IV-C area = 1.25 * Type IV-HT area

Credit: Susan Jones, atelierjones
Type IV-B

12 STORIES
BUILDING HEIGHT 180 FT
ALLOWABLE BUILDING AREA 648,000 SF
AVERAGE AREA PER STORY 54,000 SF

Credit: Susan Jones, atelierjones

Credit: LEVER Architecture
Type IV-B Protection vs. Exposed

NC protection on all surfaces of Mass Timber except limited exposed areas

~20% of Ceiling or ~40% of Wall can be exposed, see code for requirements
### Type IV-B Height and Area Limits

<table>
<thead>
<tr>
<th>Occupancy</th>
<th># of Stories</th>
<th>Height</th>
<th>Area per Story</th>
<th>Building Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-2</td>
<td>12</td>
<td>180 ft</td>
<td>90,000 SF</td>
<td>270,000 SF</td>
</tr>
<tr>
<td>B</td>
<td>12</td>
<td>180 ft</td>
<td>216,000 SF</td>
<td>648,000 SF</td>
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<tr>
<td>M</td>
<td>8</td>
<td>180 ft</td>
<td>123,000 SF</td>
<td>369,000 SF</td>
</tr>
<tr>
<td>R-2</td>
<td>12</td>
<td>180 ft</td>
<td>123,000 SF</td>
<td>369,000 SF</td>
</tr>
</tbody>
</table>

Areas exclude potential frontage increase

In most cases, Type IV-B height & story allowances = Type I-B height & story allowances

Type IV-B area = 2 * Type IV-HT area

Credit: Susan Jones, atelierjones
Type IV-A

18 STORIES
BUILDING HEIGHT 270'
ALLOWABLE BUILDING AREA 972,000 SF
AVERAGE AREA PER STORY 54,000SF

18 S

Credit: Susan Jones, atelierjones

Photos: Structurlam, naturally:wood, Fast + Epp, Urban One
Type IV-A Protection vs. Exposed

100% NC protection on all surfaces of Mass Timber

Credit: Susan Jones, atelierjones
### Type IV-A Height and Area Limits

<table>
<thead>
<tr>
<th>Occupancy</th>
<th># of Stories</th>
<th>Height</th>
<th>Area per Story</th>
<th>Building Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-2</td>
<td>18</td>
<td>270 ft</td>
<td>135,000 SF</td>
<td>405,000 SF</td>
</tr>
<tr>
<td>B</td>
<td>18</td>
<td>270 ft</td>
<td>324,000 SF</td>
<td>972,000 SF</td>
</tr>
<tr>
<td>M</td>
<td>12</td>
<td>270 ft</td>
<td>184,500 SF</td>
<td>553,500 SF</td>
</tr>
<tr>
<td>R-2</td>
<td>18</td>
<td>270 ft</td>
<td>184,500 SF</td>
<td>553,500 SF</td>
</tr>
</tbody>
</table>

Areas exclude potential frontage increase

In most cases, Type IV-A height & story allowances = 1.5 * Type I-B height & story allowances

Type IV-A area = 3 * Type IV-HT area
Tall Wood Buildings in the 2021 IBC
Up to 18 Stories of Mass Timber

In January 2019, the International Code Council (ICC) approved a set of proposals to allow tall wood buildings as part of the 2021 International Building Code (IBC). Based on these proposals, the 2021 IBC will include three new construction types—Type IV-A, IV-B, and IV-C—allowing the use of mass timber or noncombustible materials. These new types are based on the previous Heavy Timber construction type (renamed Type IV-HT) but with additional fire-resistance ratings and levels of required noncombustible protection. The code will include provisions for up to 18 stories of Type IV-A construction for Business and Residential Occupancies.

Based on information first published in the Structural Engineers Association of California (SEADC) 2018 Conference Proceedings, this paper summarizes the background to these proposals, technical research that supported their adoption, and resulting changes to the IBC and product-specific standards.

Background: ICC Tall Wood Building Ad Hoc Committee

Over the past 10 years, there has been a growing interest in tall buildings constructed from mass timber materials (Breneman 2013, Timmermans 2015). Around the world there

WoodWorks Tall Wood Design Resource
The Tellhouse building system prioritizes the integration of design, engineering, and construction. This results in a high-performance building finely tuned to meet energy, comfort, acoustic, and design criteria that has been vetted by constructability experts to ensure fast, efficient production.

Utilizing Pre-Fabricated Facade Panels and Bathroom Modules that are manufactured off-site in factories allows for reducing construction time on-site, higher quality control practices, and safer labor conditions for construction workers. Efficient routing of ductwork conserves material, and associated embodied carbon, allowing more exposed timber at while providing the air quality needed for healthy living. Water conserving fixtures reduce potable water use as a precious resource, while maintaining reliable performance.
### FIRE RESISTANCE, CONSTRUCTION TYPE, GRID

<table>
<thead>
<tr>
<th>Occupancies</th>
<th>Allowable Building Height above Grade Plane, Feet (IBC Table 504.3)</th>
<th>Allowable Number of Stories above Grade Plane (IBC Table 505.4)</th>
<th>Allowable Area Factor (At) for SM, Feet² (IBC Table 506.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, B, R</td>
<td>270 180 85 85 85 85 70 60</td>
<td>18 12 6 4 4 3 3 2</td>
<td>135,000 90,000 56,250 45,000 42,000 28,500 34,500 18,000</td>
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<tr>
<td>A-2, A-3, A-4</td>
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<td>324,000 216,000 135,000 108,000 85,500 57,000 54,000 27,000</td>
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</tr>
<tr>
<td>B</td>
<td>18 12 6 4 4 3 3 2</td>
<td>184,500 123,000 76,875 61,500 72,000 48,000 36,000 21,000</td>
<td></td>
</tr>
<tr>
<td>R-2</td>
<td>18 12 6 4 4 3 3 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Panel Example Floor Span Ranges

<table>
<thead>
<tr>
<th>Panel</th>
<th>Example Floor Span Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-ply CLT (4-1/8&quot; thick)</td>
<td>Up to 12 ft</td>
</tr>
<tr>
<td>5-ply CLT (6-7/8&quot; thick)</td>
<td>14 to 17 ft</td>
</tr>
<tr>
<td>7-ply CLT (9-5/8&quot;)</td>
<td>17 to 21 ft</td>
</tr>
<tr>
<td>2x4 NLT</td>
<td>Up to 12 ft</td>
</tr>
<tr>
<td>2x6 NLT</td>
<td>10 to 17 ft</td>
</tr>
<tr>
<td>2x8 NLT</td>
<td>14 to 21 ft</td>
</tr>
<tr>
<td>5&quot; MPP</td>
<td>10 to 15 ft</td>
</tr>
</tbody>
</table>

Credit: David Barber, ARUP
TALL TIMBER CODE ADOPTION
Statewide Alternate Method (SAM) Number 18-01 provides prescriptive path elements for Tall Wood Buildings of mass timber construction. This alternate path includes scientific conclusions established by the International Code Council’s Ad Hoc Committee on Tall Wood Buildings that were incorporated into fourteen national proposals and utilizes concrete, steel or masonry for the vertical elements of the seismic force-resisting system.

The provisions detailed in the SAM are crafted to coincide with the 2014 Oregon Structural Specialty Code (OSSC) when selected for use.

Three new types of construction are introduced under this method, all three of which are organized under Type IV construction, typically referred to as heavy timber.

The new types of construction are:

- Type IV A
- Type IV B
- Type IV C
# International Building Code

## 2015 Edition


<table>
<thead>
<tr>
<th>Occupancy Classification</th>
<th>See Footnotes</th>
<th>Type I</th>
<th>Type II</th>
<th>Type III</th>
<th>Type IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, B, E, F, M, S, U</td>
<td>NS&lt;sup&gt;b&lt;/sup&gt;</td>
<td>UL 160</td>
<td>65</td>
<td>55</td>
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<td></td>
<td>S</td>
<td>UL 180</td>
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<td>75</td>
<td>85</td>
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<td>H-1, H-2, H-3, H-5</td>
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<td>65</td>
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<td></td>
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<tr>
<td>H-4</td>
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<td>65</td>
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<td></td>
<td>S</td>
<td>UL 180</td>
<td>85</td>
<td>75</td>
<td>85</td>
</tr>
</tbody>
</table>

*TABLE 504.3
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE*
Denver Adopts Tall Mass Timber Codes

milehighre — January 6, 2020

On December 23, the City of Denver voted to adopt the 2019 Denver Building Code, which includes the tall mass timber code provisions approved for the 2021 International Building Code (IBC).

As part of the adoption of the new code, there will be a four-month period where new projects can use either the 2016 Denver Building Code or the newly-adopted 2019 version. After four months, all building and fire code permits will be processed under the 2019 Denver Building Code.

“We congratulate the City of Denver on incorporating mass timber into its building codes, and recognizing the potential of this new category of wood products to revolutionize the way America builds,” said American Wood Council president & CEO Robert Glowski. “Mass timber offers the strength of historic building materials with lower weight, and, in the rare event of a fire, has inherent fire resistance. Beyond the aesthetic qualities of mass timber that building owners and designers are seeking, wood is among the most energy-efficient and environmentally friendly of all construction materials, storing carbon from the atmosphere for long periods of time.”

The adopted proposal to recognize mass timber in the new code was submitted by Dr. Gregory R. Kingsley on behalf of the structural engineers association of Colorado. The American Wood Council provided technical assistance to the city in support of the proposal.

The 2019 Denver Building Code will now recognize three new types of construction that also are included in the 2021 IBC:

AMENDMENTS TO THE BUILDING AND FIRE CODE FOR THE CITY AND COUNTY OF DENVER
The 2019 Denver Building and Fire Code includes the following codes except as amended herein.

APPENDIX U
TALL WOOD BUILDINGS

SECTION U101
GENERAL
U101.1 Purpose. The purpose of this appendix is to provide criteria for three new mass timber construction types: Type IV-A, Type IV-B, and Type IV-C. These building types expand the allowable use of mass timber construction to larger areas and greater heights than allowed for Type IV-HF construction.

U101.2 Scope. The provisions in this appendix are in addition to or replace the sections in the 2018 International Building Code where Types IV-A, IV-B, and IV-C construction are used. Where building Types IV-A, IV-B, or IV-C are not used, this appendix does not apply.

SECTION U102
AMENDMENTS TO THE INTERNATIONAL BUILDING CODE
(Under use of this appendix chapter, the following sections shall be modified or added as follows and shall supersede the corresponding sections in the International Building Code or Denver amendments to the International Building Code)
BUILDING CONSTRUCTION AMENDMENTS

2020 GENERAL SESSION

STATE OF UTAH

(5) "Utah Code" means the Utah Code Annotated (1953), as amended.

Section 2. Section 15A-2-101 is amended to read:

15A-2-101. Title -- Adoption of code.

(1) This chapter is known as the "Adoption of State Construction Code."

(2) In accordance with Chapter 1, Part 2, State Construction Code Administration Act, the Legislature repeals the State Construction Code in effect on July 1, 2010, and adopts the following as the State Construction Code:

(a) this chapter;

(b) Chapter 2a, Tall Wood Buildings of Mass Timber Construction Incorporated as Part of State Construction Code;

[(h) (c) Chapter 3, Statewide Amendments Incorporated as Part of State Construction Code; and]

[(e) (d) Chapter 4, Local Amendments Incorporated as Part of State Construction Code; and]

(e) Chapter 6, Additional Construction Requirements.

Section 3. Section 15A-2-102 is amended to read:


As used in this chapter [and Chapter 2a, Tall Wood Buildings of Mass Timber Construction Incorporated as Part of State Construction Code, Chapter 3, Statewide Amendments Incorporated as Part of State Construction Code, and Chapter 4, Local Amendments Incorporated as Part of State Construction Code:}
HOUSE BILL 143

The status of each bill, resolution, proclamation, and memorial is updated when the offices of the Secretary of the Senate and the Chief Clerk of the House publish the un-official daily journals and should not be deemed official. The official bill actions are located in the final journal, which are maintained by the offices of the Secretary of the Senate and the Chief Clerk of the House. The daily journals are published at the end of each legislative day.

Full Bill Information

Individual Links:
Bill Text
Statement of Purpose / Fiscal Note

H0143

BUILDING CODE ACT – Adds to existing law to require the Building Code Board to adopt certain International Building Code provisions allowing for the use of mass timber.

02/12 Introduced, read first time, referred to JRA for Printing
02/15 Reported Printed and Referred to Business
02/24 Reported out of Committees with Do Pass Recommendation, Filed for Second Reading
02/25 Read second time; Filed for Third Reading
02/26 U.C. to hold place on third reading calendar until Monday, March 1, 2021
03/01 Read Third Time in Full - Previously Read In Full - PASSED - 68-0-2

NAYS - None
On August 13, 2020 the California Building Standards Commission grouped the tall wood code change proposals into one agenda item and passed them unanimously.

The changes will be published as an amendment to the 2019 CBC on January 1, 2021 and will become effective on July 1, 2021.
2019-2020 Regular Session - HB 777
Community Affairs, Department of; consider amending the state minimum standard codes to allow tall mass timber construction types; direct

Sponsored By
(1) Corbett, John 174th
(2) Burns, Jon 159th
(4) England, Terry 116th
(5) Smith, Lynn 70th
(3) McColl, Tom 33rd
(6) LaRiccia, Dominic 160th

Sponsored In Senate By
Wilkinson, John 50th

Committees
HC: Agriculture & Consumer Affairs
SC: Agriculture and Consumer Affairs

First Reader Summary
A BILL to amend Chapter 2 of Title 8 of the Official Code of Georgia Annotated, relating to standards and requirements for construction, alteration, etc., of buildings and other structures, so as to direct the Department of Community Affairs to undertake a review of the 2021 edition of the International Building Code so as to consider amending the state minimum standard codes to allow tall mass timber construction types; to provide a date by which said review is to be completed; to provide for related matters; to repeal conflicting laws; and for other purposes.

Status History
Jul/01/2020 - Effective Date
Jul/01/2020 - Apr 397
The challenge is not in learning how to accept change, but in how to orchestrate the most efficient change.
This concludes The American Institute of Architects Continuing Education Systems Course.

QUESTIONS?

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