Ascent MKE:
Designing the Tallest Mass Timber Building in the World (for now)

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Disclaimer: This presentation was developed by a third party and is not funded by WoodWorks or the Softwood Lumber Board.
ASCENT MILWAUKEE

NINETEEN STORIES OF TIMBER OVER A CONCRETE PODIUM

HEIGHT:
284 FT/ 86.56 M

FLOOR AREA OF TIMBER:
APPROX. 324,400 SF /30,136 SM

APPROVALS PURSUED UNDER 2015 IBC’S “SPECIAL ASSEMBLY” SECTION

HYBRID STRUCTURE – STAIRS AND ELEVATOR CORES ARE CIPC

ACHIEVES CLASS FIRE RESISTANCE THROUGH BOTH EXCAPSULATION AND SACRIFICIAL/ CHAR METHOD – APPROX. 50% OF TIMBER COLUMNS, BEAMS, AND SLABS ARE EXPOSED – PRIMARILY IN LIVING SPACES

VERTICAL STRUCTURAL MEMBERS MUST MEET A THREE HOUR FIRE RATING, FLOORS ARE TWO HOUR
Why Mass Timber: Sustainability

1. The building will sequester approximately 7,200 metric tons of CO2.
2. It will take approximately 25 minutes to grow this volume of wood in North American forests.

This CO2 benefit is also equivalent to taking approximately 2400 cars off the road for a year or the energy to operate over 1100 homes for a year.
Ascent MKE Timeline:

01 March 2018: Directive from New Land Enterprises to pursue MTF Tower

03 May 2018: Presentation to DNS Commissioner and Alderman

24 July 2018: Introduction to DNS Staff

21 October 2018: Project unveiled at CTBUH World Conference, Dubai

11 November 2018: Presentation to MFD leadership

22 July 2019: First working meeting with DNS Staff

07 November 2019: Second working meeting with DNS Staff

17 December 2019: Witnessed three hour fire test (4th of 9)

13 February 2020: Variance review meeting with DNS Staff

21 February 2020: Four variance petitions filed with DNS

21 February 2020: Footings and Foundation Permit applied for

7 May 2020: Final Variance Conference
PRESCRIPTED CHAR RATE:
1.5IN/ HR

TESTED CHAR RATE:
1.29-1.31 IN/ HR
EXPOSED GLULAM BEAM TO GLULAM COLUMN CONNECTION (D1C)

NOT TO SCALE

SEE COLUMN TO COLUMN TYPICAL DETAIL FOR PLATES AND FASTENERS

OPPOSITE SIDE BEAM WHERE APPLICABLE

COLUMN DEPTH (D)

ELEVATION

1/2 ASY VG CSK 3,1/2" FULLY THREADED COUNTERSINK COMPRESSION RESC SCREWS INSTALLED FLUSH TO UNDERSIDE OF Glulam Beam

1/2 ASY VG CSK 3,1/2" FULLY THREADED COUNTERSINK SCREWS

3/8" SCREW" SCREW" SCREW" SCREW" SCREW" SCREW" SCREW" SCREW" SCREW" SCREW" SCREW" SCREW"

FULLY THREADED RESC SCREWS INSTALLED FLUSH TO UNDERSIDE OF Glulam Beam

1 LAYER 2-3/4" Glulam Glulam Glulam Glulam Glulam With 1-1/4" Fully Threaded Wood Screws Into Glulam Continue Hilt Fit Glulam Mix Free of Sealant At Bottom Between Beam and Glulam

6-1/2" NTD Glulam In Full Screwed To Glulam Beam With 1-1/2" CSK Head Wood Screw

8-1/2" ASY VG CSK 3,1/2" CSK HEAD FULLY THREADED SCREWS

1/2" DAY IN GLULAM COLUMN

3/8" Sock PLATE With 3/8" PRESTRESSED RODS

4-1/2" ASY ECAPAST NEW CSK HEAD Partly Threaded Screws Predrilled With 1-1/2" HEAD Prior To Installing Nails

1/4" ANGLE PLATE

5/8" BEARING PLATE

NOTE: ALL STEEL PLATES TO BS 6013 85

SECTION A

NOT TO SCALE
Project Considerations: VD + C
This concludes The American Institute of Architects Continuing Education Systems Course

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