BRAD NILE

5 decades of building with wood, in a 35-year construction career
THE PROMISE OF MASS TIMBER CONSTRUCTION:

- A beautiful building
- Rapid construction
- Minimal staging and laydown needs
- Offsite fabrication potential for all trades
KEY FACTORS IN DELIVERING THIS PROMISE:

- A well managed and planned jobsite
- A well managed mass timber procurement and modeling effort
SITE ORGANIZATION CONSIDERATIONS:

- Building footprint compared to the available site.
- Crane location and hoisting plan
- Truck routing for materials in
- Trash, debris and recycling management
SITE ORGANIZATION

Start planning early. Refine and add every relevant detail.
SITE ORGANIZATION

Early planning should be iterative and collaborative.
Total perimeter accessibility prepared for crane & facade access
No available site - all access via sidewalk & street closures.
No available site, except an easement just big enough for a tower crane.
CRANE PLAN

• Downtown Site

• Full-time sidewalk closure and part time street closure.

• RT crane for positioning flexibility and after-hours tuck away.
PRE-CONSTRUCTION SITE CONSIDERATIONS:

• Street and sidewalk closures
• Pedestrian protection
• No-fly zones
• Hoisting obstructions:
  ✓ Overhead power lines
  ✓ Trees
  ✓ Neighboring buildings
  ✓ Facade access
  ✓ Utility connections
Jurisdictional requirements and readymade options
Trees, Power Lines and No-fly zones
TIMBER PROCUREMENT PRE-CONSTRUCTION CONSIDERATIONS:

SCHEDULE

• Adequate time for modeling
• Confirmed Material Delivery Flow

DELIVERY PLANNING

• Truck sequence and cadence
• “Fly from truck” modeling and loading
• Factory center-of-gravity locating
• Hoisting and rigging provisions
• Worker Safety Provisions
• Guardrails
TRUCK LOADING, SEQUENCE & CADENCE PLANNING
(CLST LOAD MODELING EXAMPLE)
FLY FROM TRUCK MODELING & LOADING

Essepi Systemi X-Lam Near Trento Italy
HOISTING & RIGGING PROVISIONS

Hardware & Center of Gravity Locating
PLAN EARLY & CONTINUOUSLY

• Hoisting
• Worker access and tie-off provisions while the structure is underway
• Guardrail provisions
• Structure temporary bracing & stabilization
PUBLIC SAFETY

- Necessary traffic revisions
- Pedestrian protection
GENERAL ACCESS

• Stair assemblies going up with the structure
• Maintaining 2 paths of egress.
MAXIMIZE OFF-SITE FABRICATION

(BEYOND THE STRUCTURE)

- MEP systems
- Facade Elements
WORKER SAFETY PROVISIONS: 

THE 1978 PLAN:

☑ Be careful.

☑ Grab something if you fall.

HAVE A PLAN!
THE 1986 PLAN:

✓ Demolish and rebuild facade elements ON THE GROUND!
THE 2019 PLAN:

✓ Maximize off-site fabrication - Prefabricated Facade Panels
Maximize Off-site Fabrication - Plumbing and Piping Systems.
Working the plan: Prefabricated Wall Elements, shop installed roof vapor barrier.
CONCLUSION

Plan early and continuously.

- Crane type and location
- Material Flow
- Public Safety
- Temporary Bracing

Model everything.

- Realize a no-sawdust jobsite.
- If it is in the building, it is in the model.
- Model truck loads for direct fly to position.

Maximize off-site fabrication *(Beyond the Structure).*

- MEP systems
- Facade Elements
EXCELLENT EXAMPLES OUTSIDE THE USA:

- Brock Commons, UBC
- Urban One, Structurlam, Seagate
- Vancouver, British Columbia
EXCELLENT EXAMPLES OUTSIDE THE USA:

Swatch Omega Headquarters
Blumer Lehmann,
Gossau, Switzerland
CONCLUSION

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Maximize off-site fabrication
(*Beyond the Structure*).
- MEP systems
- Facade Elements
ONE MORE TIME:

**Plan early and continuously.**
- Crane type and location
- Material Flow
- Public Safety
- Temporary Bracing

**Model everything.**
- Realize a no-sawdust jobsite.
- If it is in the building, it is in the model.
- Model truck loads for direct fly to position.

**Maximize off-site fabrication (Beyond the Structure).**
- MEP systems
- Facade Elements
Thank you for your participation.

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This concludes The American Institute of Architects Continuing Education Systems Course

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