Miller Boskus Lack Architects

Mass Timber Expanding to the Industrial Sector

Melissa Kroskey, AIA, SE

Panelized Wood Roofs
Resources available at WoodWorks.org

www.woodworks.org/search/?query=panelized

- Panelized Case Study
- Seismic Design Example
- Wind Design Example


Panelized Structures

Another Free WoodWorks Webinar on Wood Warehouses
Available from The Wood Institute

Wood Construction Applications in Industrial and Warehouse Facilities

Credit: 2.5 AIA LU/HSW, 0.25 ICC CEU, 2.5 PDH

www.woodinstitute.org/course/view.php?id=132

- Panelized Roofs
- Engineering Tilt-Up Walls
- Diaphragm Detailing
- Cost Comparisons

THE WOOD INSTITUTE

180k SF Glulam Post + Beam, Completed 2007
Barrette Structural Manufacturing Plant

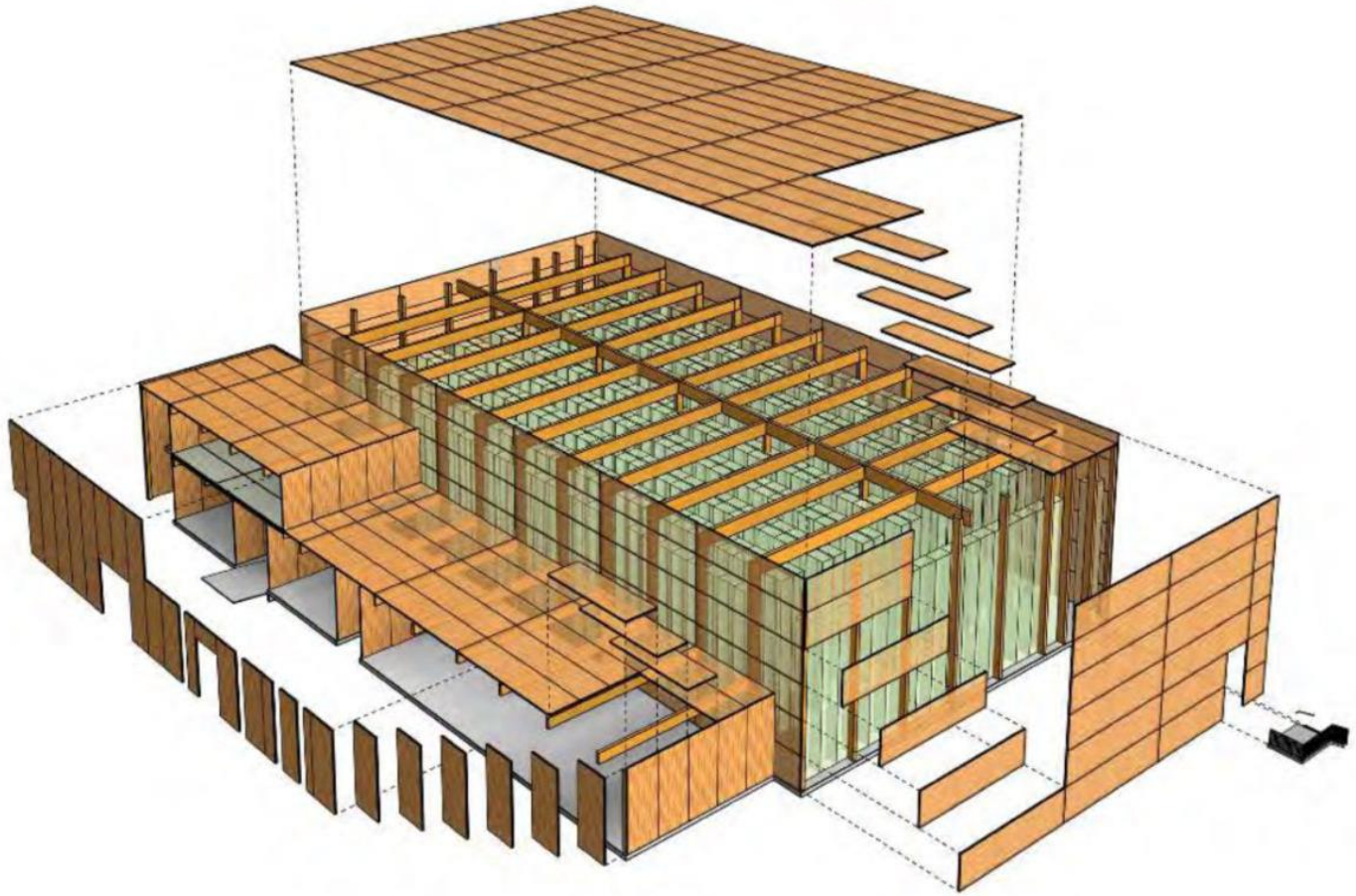
Cost & Design Optimization Checklists
How much does it cost?

- Requires holistic approach
- Cannot simply compare structural system cost
- Lightweight structure, savings?
- Beyond cost, value in return on investment?

www.woodworks.org/resources/mass-timber-cost-and-design-optimization-checklists/

Potential Benefits	Project Goal ✓	Value Add ✓
Fast construction		
Aesthetic Value (Leasing velocity/ premiums) Healthy Building / Biophilia		
Lightweight structure; strength & performance objectives		
Labor shortage solution • small crews • entry level workers		
Just-in-time delivery (ideal for dense urban sites)		
Environmentally friendly (low carbon footprint)		
Healthy forests/ wildfire resiliency & support rural economies		

Proof of Concept: Industrial Flex/ Manufacturing/ Warehouse
University of Arkansas Library Storage Facility



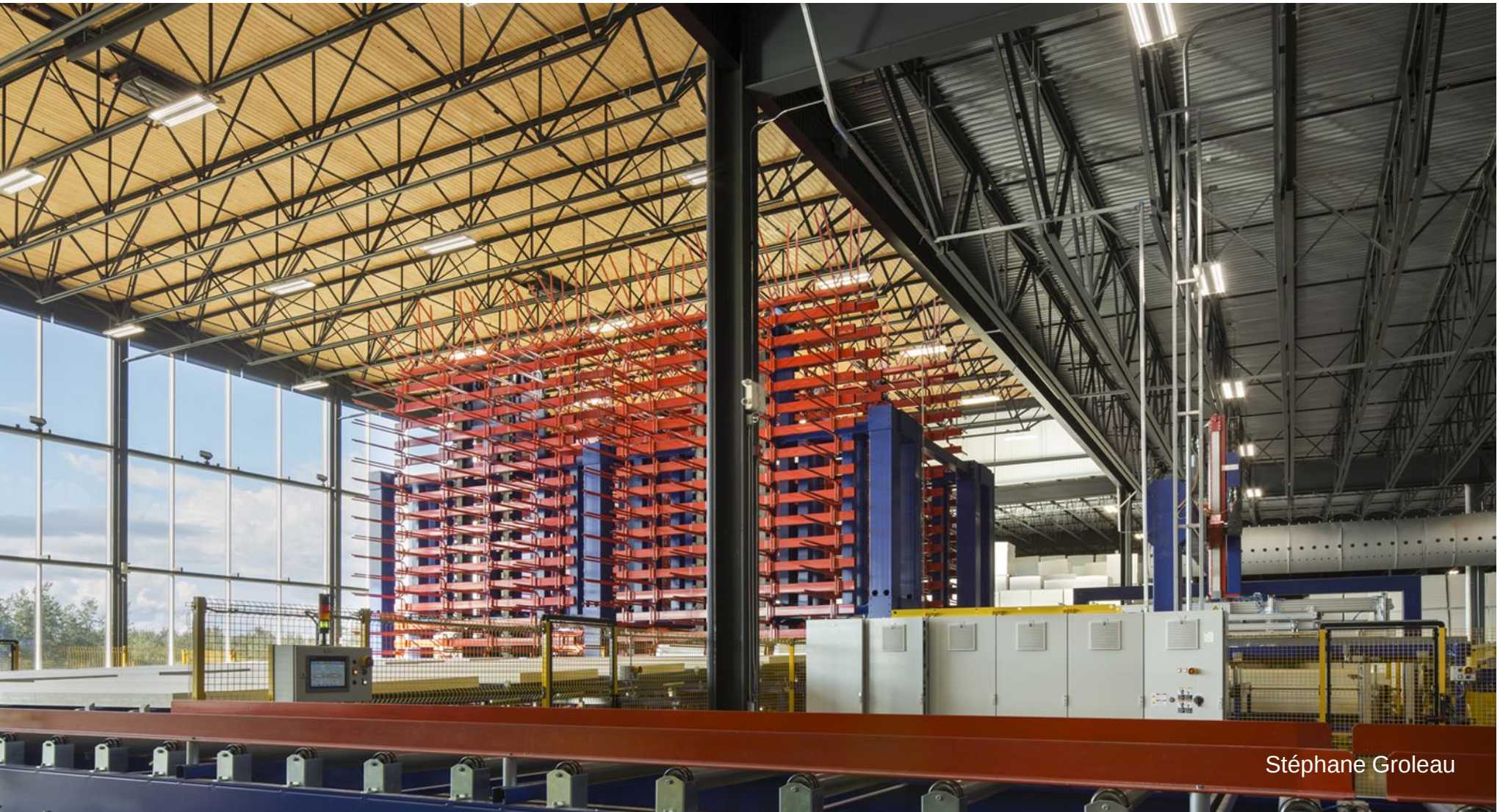
Miller Boskus Lack Architects

Chuck Choi

Cheaper, Potentially Faster, Just as Strong and Beautiful
University of Arkansas Library Storage Facility

Chuck Choi

CLT Ceiling: Warmth of Natural Wood Material
Soprema Factory



Reinforcing Brand & Creating a Warm Atmosphere for Sales
Salvagnini Industrial Showroom Expansion

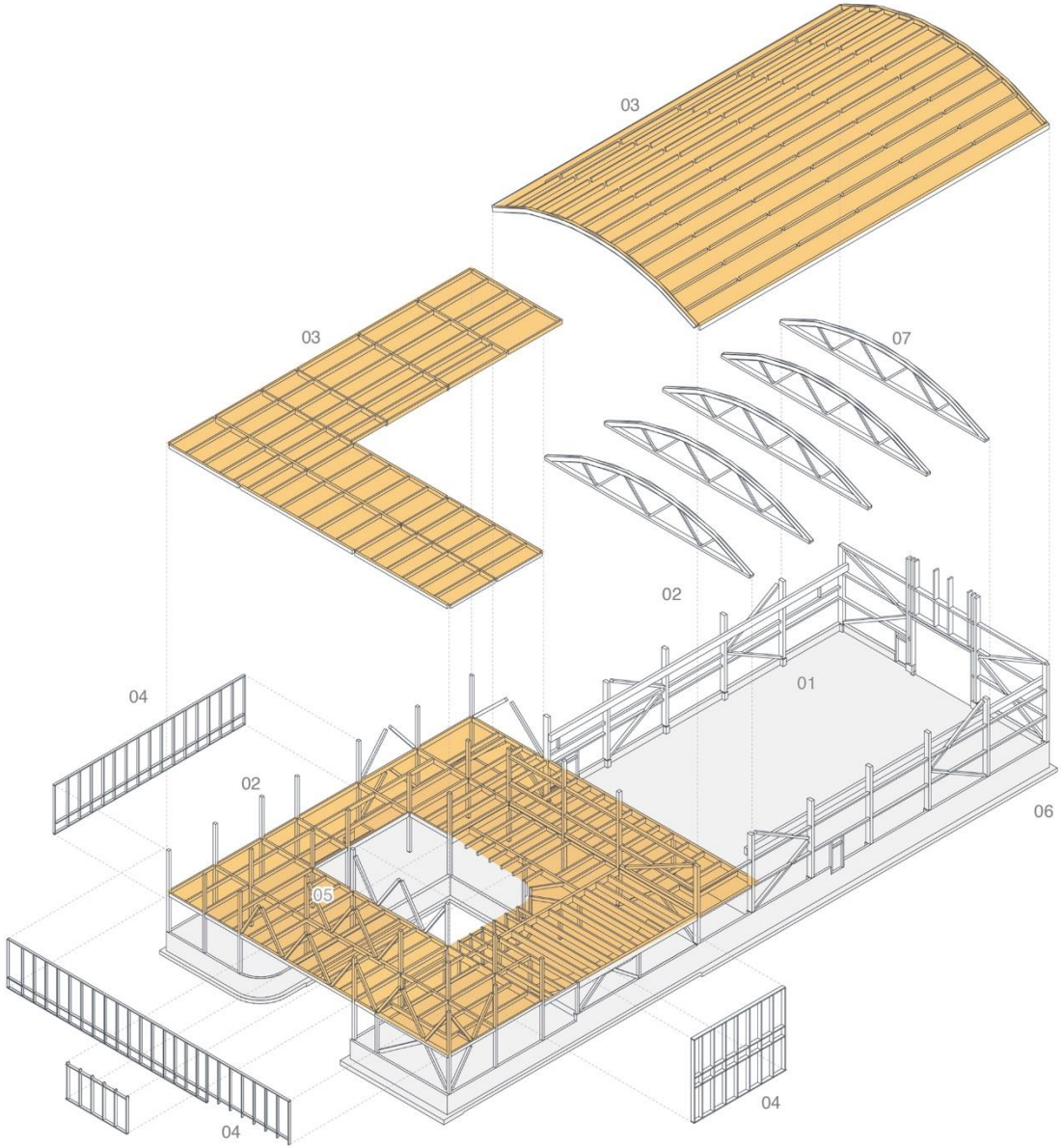
Schaefer

WoodWorks

Innovation: Improving & Optimizing Production Facilities

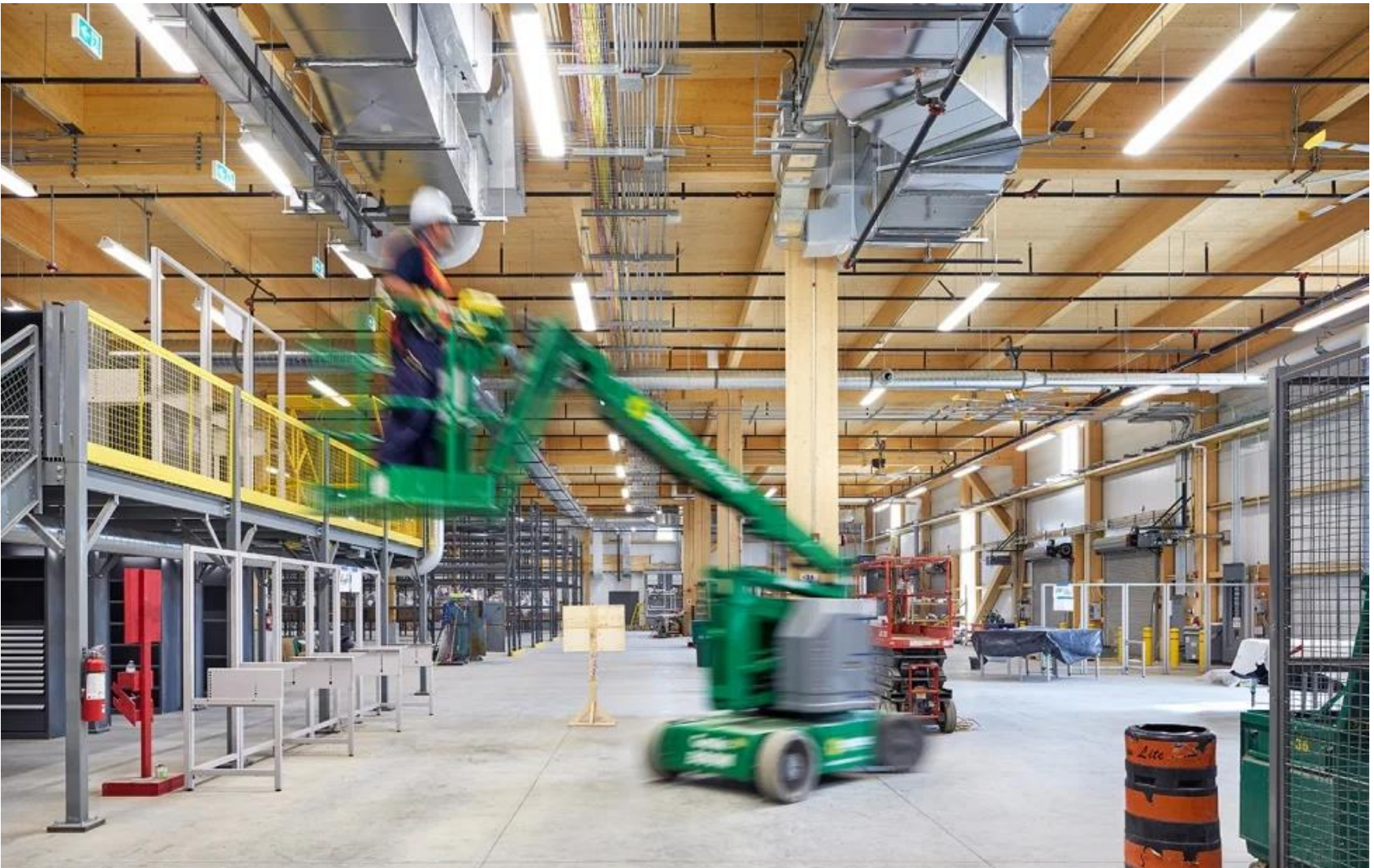
SmartMill Head Office

Charles O'Hara + Atelier Guy Architectes




Environmental
Social
Governance
E
S
G
Climate change
Greenhouse gas (GHG) emissions
Resource depletion
Waste & pollution
Working conditions
Impact on local communities
Health & safety
Employee relations & diversity
Executive pay
Bribery & corruption
Political lobbying & donations
Board diversity & structure

Transitioning to a More Resilient and Carbon-Literate Campus
Canadian Nuclear Logistics (CNL) Chalk River Laboratories



Kevin Belanger/ Courtesy HDR

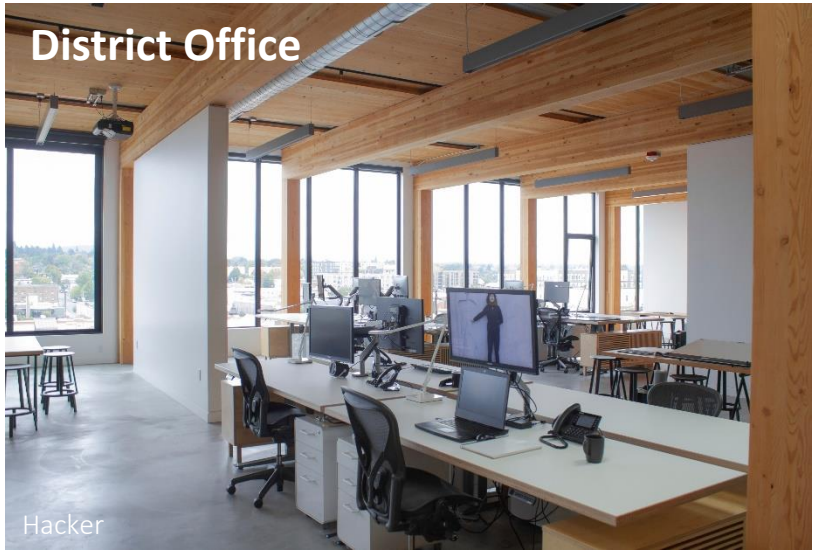
Long Lead Times for Steel Framing? Consider Wood!
Janicki Industries: B10 Manufacturing Facility

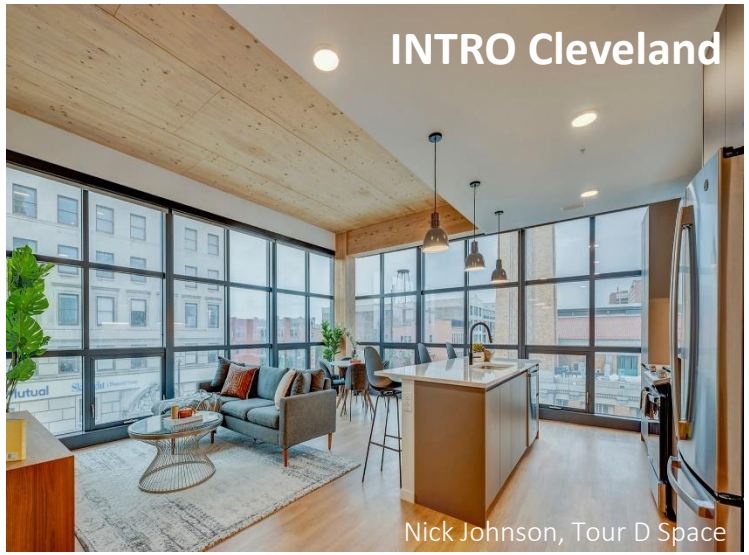
Mass Timber Business Case Studies: Value Creation Analysis

Development Overview
- Property Information
- Product Strategy
- Investment Highlights

Qualitative Discussion
- Challenges
- Lessons Learned
- Successes

Quantitative Overview
- Development Timeline
- Costs
- Rents
- Lease up





Comparative Return Analysis

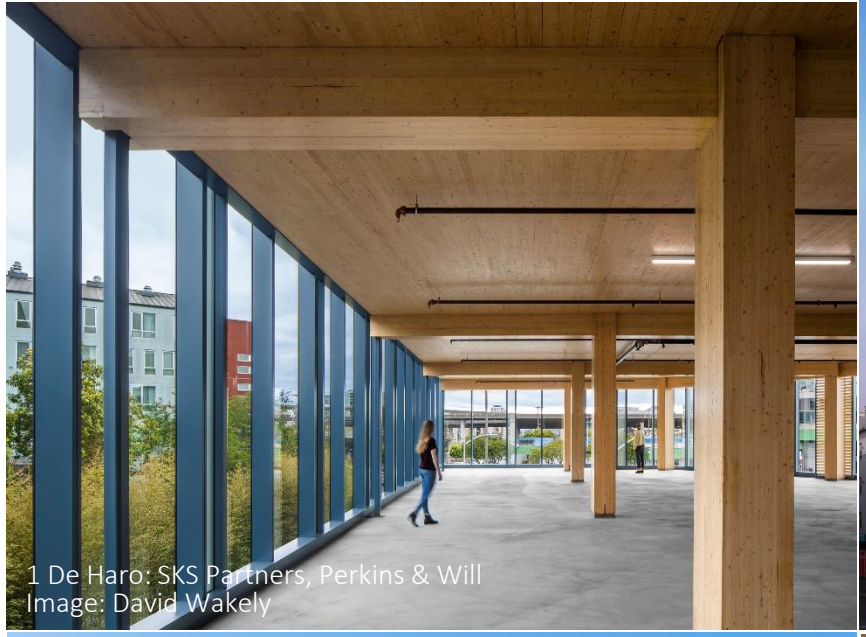
	Market	Pro Forma	Realized
Yield on cost	6.25%	7.00%	7.35%
Cap rate	4.75%	4.50%	TBD
Value/rentable SF	$550/ RSF	$717/ RSF	TBD ($800+/ RSF)
Leverage	65%	65%	N/A

WOODWORKS™ WOOD PRODUCTS COUNCIL

CONRAD INVESTMENT MANAGEMENT

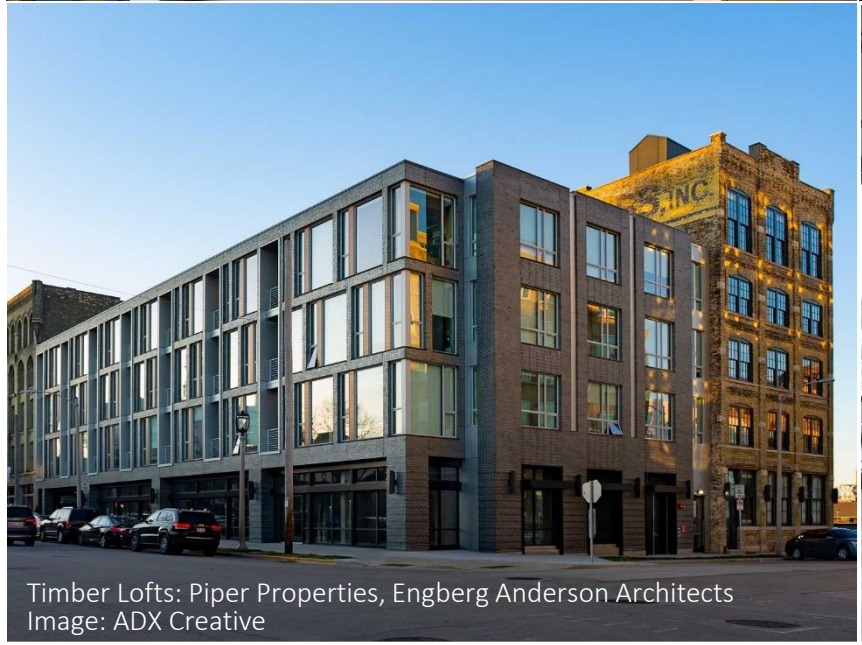
Multifamily | Office | Industrial | Student Housing

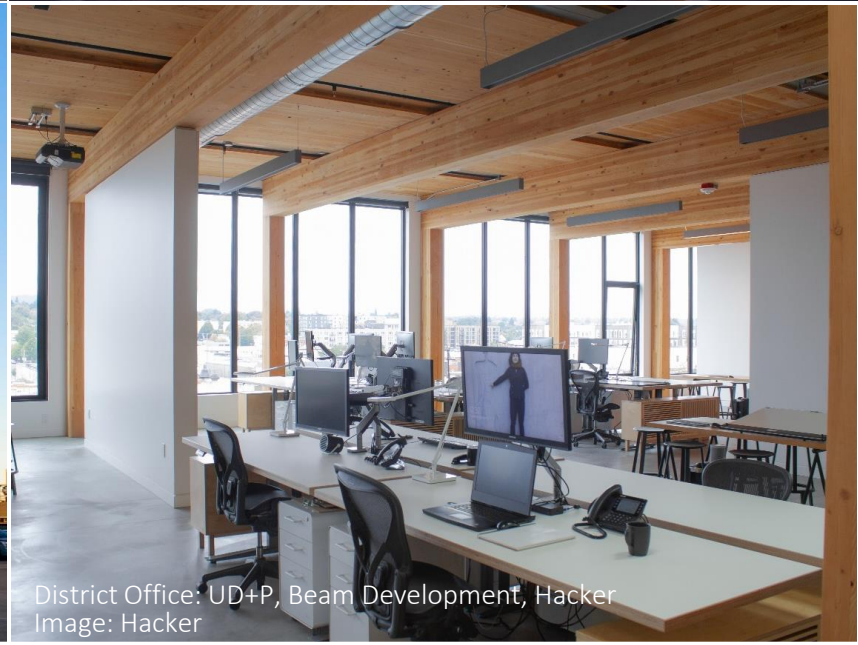
Clay Creative
Image: Christian Columbres


1 De Haro: SKS Partners, Perkins & Will
Image: David Wakely


Platte Fifteen: Crescent Real Estate, Oz Architecture
Image: Arch Angle Media


ICE Blocks: Heller Pacific, RMW Architecture & Interiors
Image: Bernard André Photography


Timber Lofts: Piper Properties, Engberg Anderson Architects
Image: ADX Creative


District Office: UD+P, Beam Development, Hacker
Image: Hacker

WOODWORKS™
WOOD PRODUCTS COUNCIL

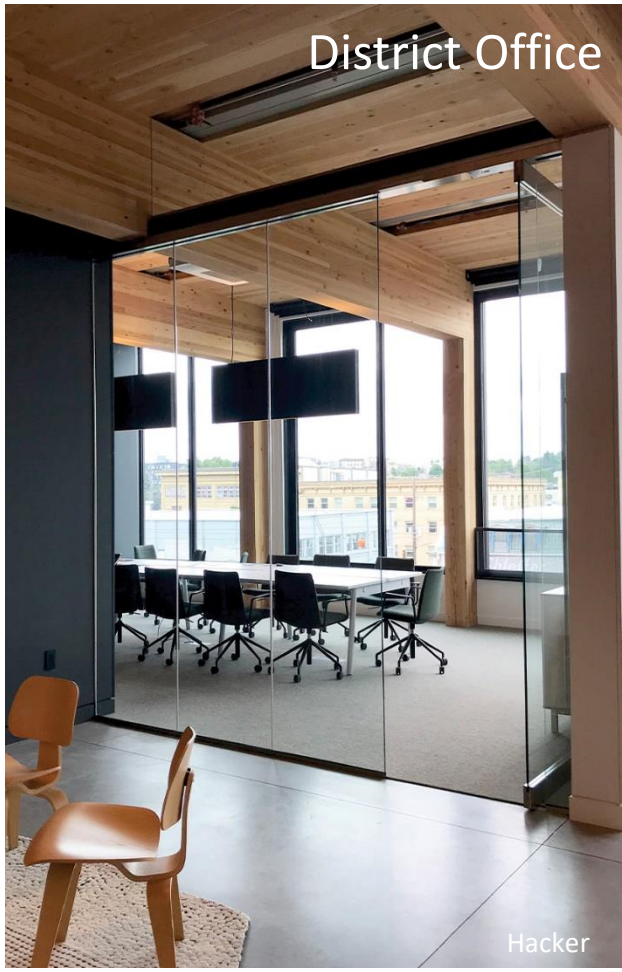
CONRAD
INVESTMENT MANAGEMENT

Mass Timber Business Case Studies

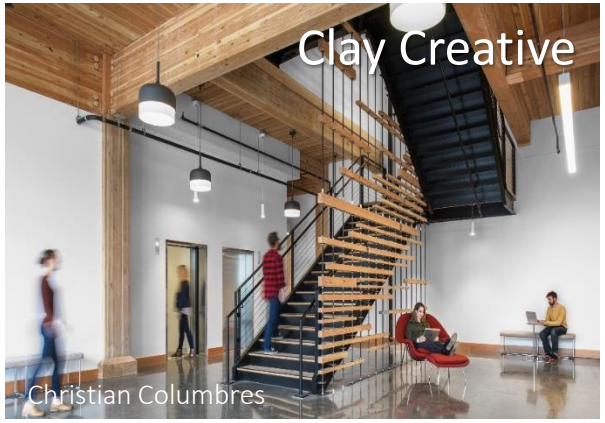
December 2022

Firms Attracted for Myriad Reasons

- Most tenants are "creditworthy"
- Desire intangible stakeholder benefits
  - Workforce Desires
  - Regulatory Perceptions
  - Brand Position
- Tend to see impressive pre-leasing
  - Enables better construction debt
  - Sets perceptions of desirable development
- Seeing sustained occupancy via subleasing
  - Tested by COVID disruptions



Mass Timber Business Case Studies: Value Creation Analysis



Scan to download

WOODWORKS™ WOOD PRODUCTS COUNCIL

CONRAD INVESTMENT MANAGEMENT

Timber Offices: Attract Talent & Align with Company Values
QScale Data Centre

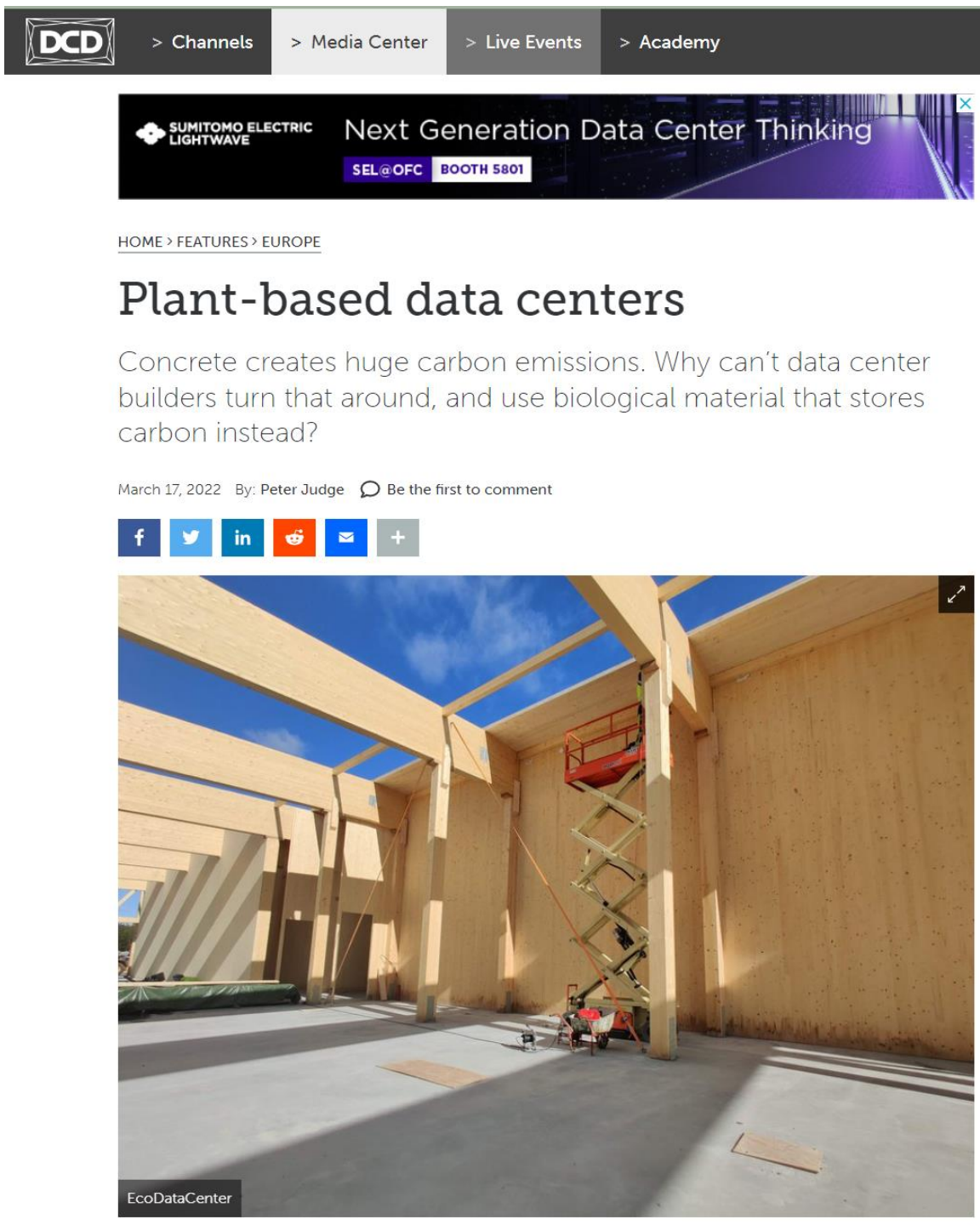
Qscale and MSDL Achitects

R&D
Specialty Warehouses

Sweden Investing in Data Center R&D

- EcoData Center in Falun
- Boden Type Facility

www.datacenterdynamics.com/en/analysis/plant-based-buildings/



Questions?

Melissa Kroskey, AIA, SE

Technical Director

Melissa.Kroskey@WoodWorks.org

This concludes The American Institute of Architects Continuing Education Systems Course

Erika Brown Edwards/ courtesy TimberLab

Copyright Materials

Funding provided in part by the Softwood Lumber Board