

DBRS Morningstar: Mass Timber as a Sustainable Investment

SPEAKERS



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Wood Products Council



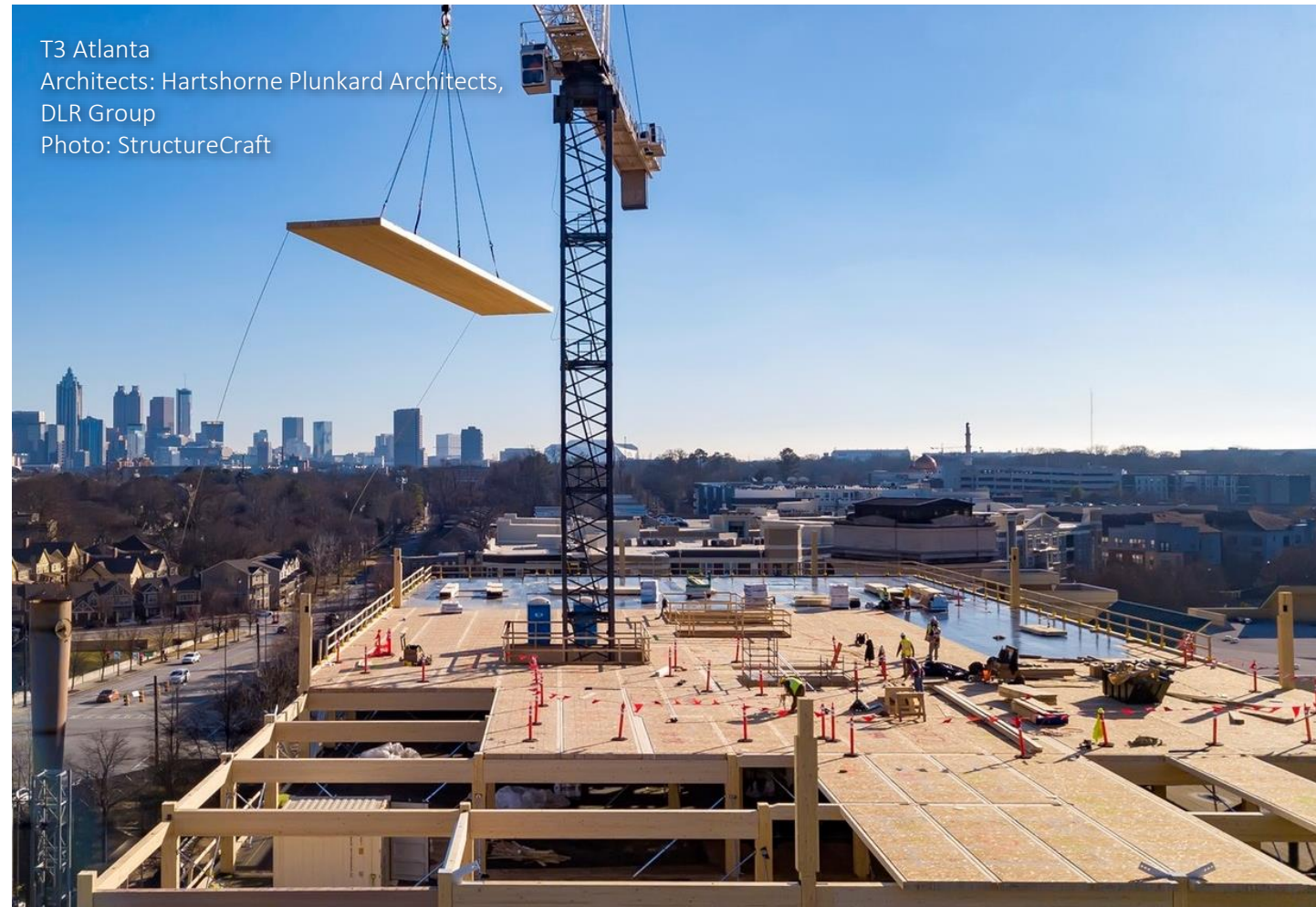
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DBRS Morningstar



Free Assistance for Developers & Design Teams

- Innovative mass timber applications
- New tall wood code provisions
- Maximizing heights and areas
- Finding experienced designers and builders
- Environmental performance
- Structural and other systems

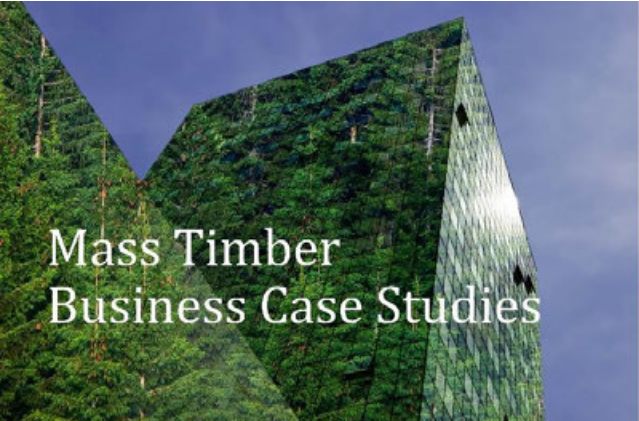
help@woodworks.org



Resources for Developers/Owners

Scan for website





Mass Timber Business Case Studies



WOODWORKS

Meeting Sustainability Objectives with Wood Buildings

Healthy Buildings, Carbon Impact, Resilience, Circularity

Mass timber structural systems help meet several development objectives that fall under the broad sustainability umbrella, including healthy buildings, reduced carbon impact, resilience, and circularity. Developers and owners can take advantage of wood's benefits to create buildings that contribute value by attracting tenants, align with evolving policy requirements, and appeal to investors who are increasingly seeking sustainable investments.

Carbon Benefits of Wood Buildings
Less Embodied Carbon • Stored Carbon • Lower Carbon Impact

Low embodied carbon: Wood products have low embodied carbon compared to steel and concrete. Embodied carbon is a measure of the greenhouse gas (GHG) emissions associated with materials and construction processes throughout the lifetime of a structure. Embodied carbon, especially upfront emissions associated with producing materials and constructing a building, can be significant?

As trees grow, they absorb carbon dioxide (CO₂) from the air, release the oxygen (O₂), and store the carbon in trunks, branches, and roots. Wood elements used in a building store this carbon for the building's lifetime—longer if the wood is reused or recycled.

Wood generally has three choices: materials, wood, steel or concrete. Wood is the most sustainable choice in the life cycle assessment (LCA), a speculative office development project. Wood's low embodied carbon, its ability to sequester carbon, and its alignment with goals for the project team and clients. This successful development project is one of Denver's highest leasing rates, and it was completed one month after completion.

Photo: Wilson + Partners, CO
Crescent Hotel Denver

Find projects & team members

WOODWORKS INNOVATION NETWORK.ORG

Sign in Request an Account

Genentech Child Care Center
Mass Timber

CIT Tall Timber Student Housing
Mass Timber

Crosswood Apartments
Mass Timber

Wingspan Event and Conference Center
Mass Timber

Kresge College Renewal at UC Santa Cruz
Mass Timber

Knight Campus for Accelerating Scientific Impact at the University of Oregon
Mass Timber



Mass Timber Cost and Design Optimization Checklists

WoodWorks has developed the following checklists to assist in the design and cost optimization of mass timber projects. The design optimization checklists are intended for building designers (architects and engineers), but many of the topics should also be discussed with the fabricators and builders. The cost optimization checklists will help guide coordination between designers and builders (general contractors, construction managers, estimators, fabricators, installers, etc.) as they are estimating and making cost-related decisions on a mass timber project. The pre-design checklist should be reviewed by the developer/owner, designers and builders.

WoodWorks offers a wide range of resources at woodworks.org, many of which are referenced in this document. We also recommend that designers and builders download the following:

Mass Timber Design Manual – Includes technical papers, continuing education articles, expert Q&As and more, and is updated regularly. Published in partnership with Think Wood.

U.S. Mass Timber Construction Manual – Provides a framework for the planning, procurement

1 Do Home
San Francisco, CA
ARCHITECT
PERKINS+WILL
ENGINEER
OO Engineers
CONTRACTOR
Hatchway Development



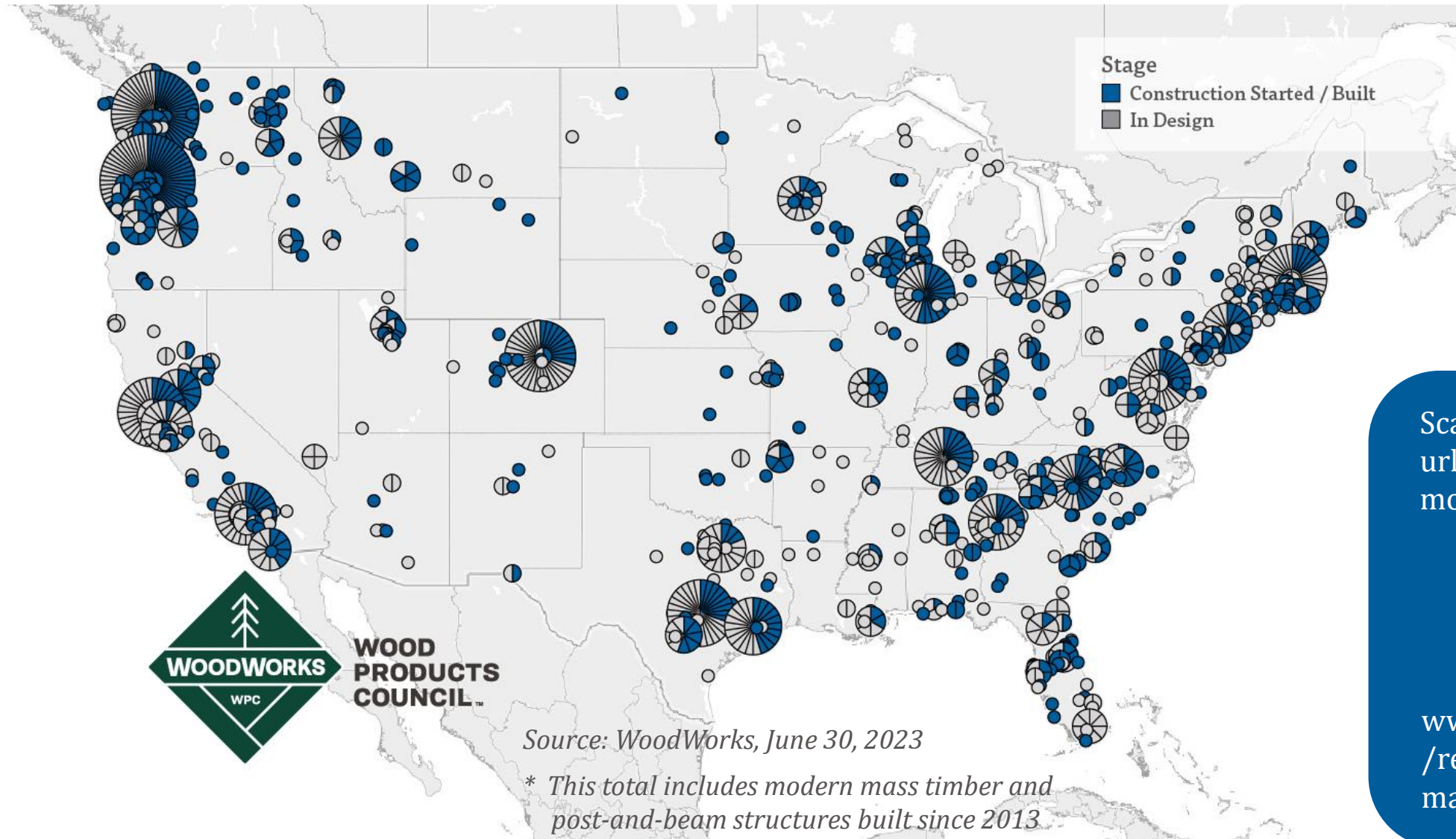


U.S. Mass Timber Construction Manual



Current State of Mass Timber Projects

As of June 2023, in the US, **1,860** multi-family, commercial, or institutional projects have been constructed with, or are in design with, mass timber.

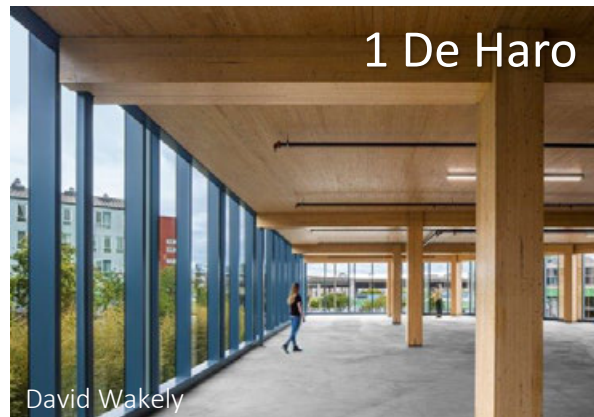
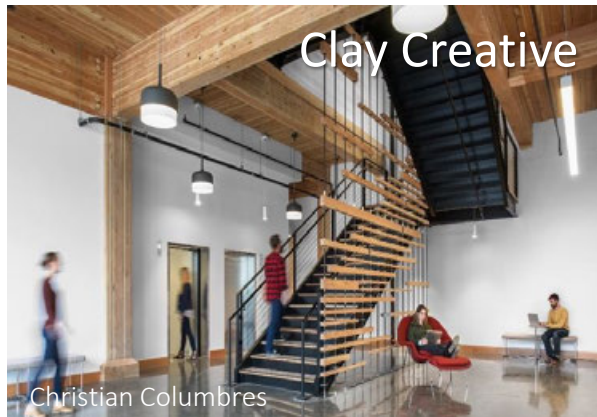
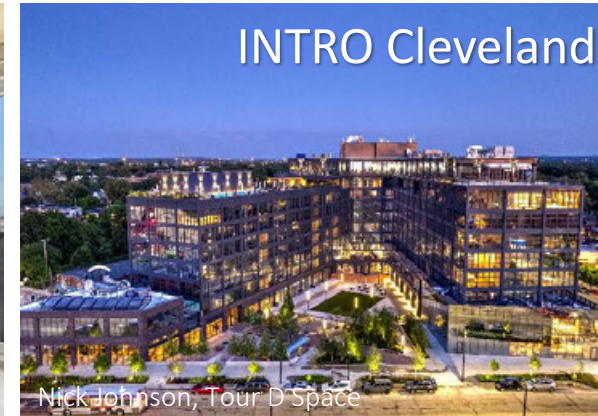


Scan this code or use the url to find the map and more details online.



www.woodworks.org/resources/mapping-mass-timber/

Mass Timber Business Case Studies: Value Creation Analysis



Scan to download



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NOVEMBER 1, 2023

Mass Timber: DBRS Morningstar ESG Outlook and Credit Approach



Kevin Augustyn
DBRS Morningstar

Agenda

1

Background

2

Benefits

3

Pushback; Mitigants

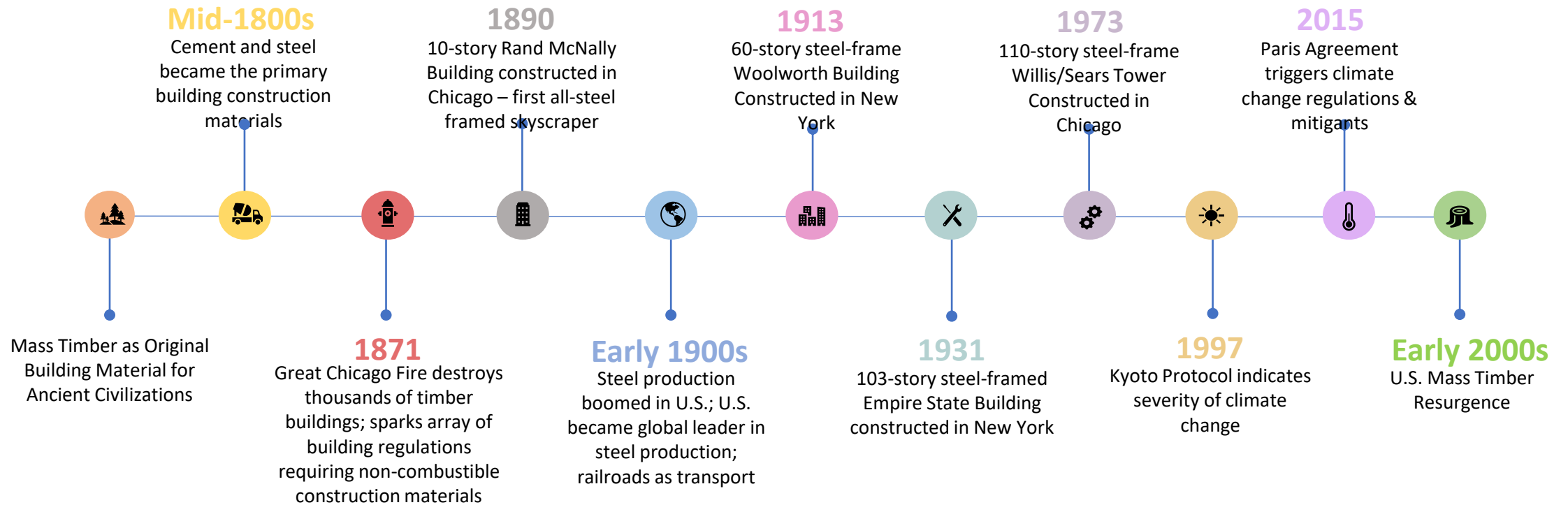
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DBRS Outlook on Mass Timber

5

Looking Forward

Mass Timber: A Brief History



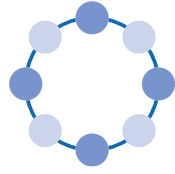
Mass Timber: A Host of Benefits

Mass timber presents an array of benefits to the environment, developers, and prospective tenants.



Cost Efficiency

The pre-fabrication process affords reduced time for on-site labor and hence less interest accumulation on-site labor.



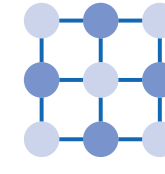
Sustainability

Life-cycle assessments have shown that wood outperforms steel and concrete environmentally. Wood also has a lighter carbon footprint because wood products store carbon absorbed by the trees while growing. [Embodied carbon]



Ease and Speed

Mass timber components are 20-30% lighter than their steel and concrete counterparts, translating to lighter transport and construction processes.



Thermal and Energy Performance

The panel sizes and precise tolerances resulting from the mass timber manufacturing process result in fewer and tighter joints that allow less potential for airflow.

The ESG Implication

DBRS Morningstar uses an ESG consideration lens to account for material ESG factors in our analyses.

Two ESG tenets we consider, through this lens, are especially relevant to mass timber properties:

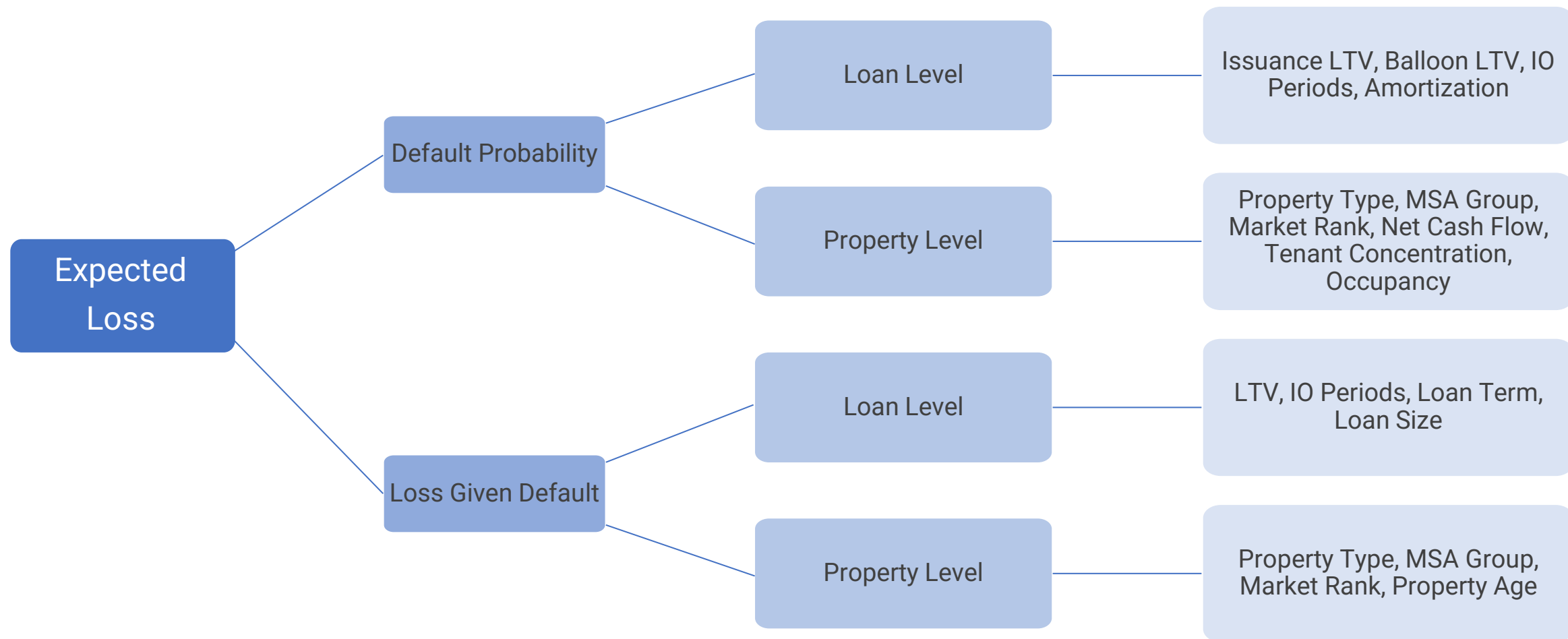
1. Carbon and Greenhouse Gas Costs (E)
2. Social Impact of Products and Services (S)



Estimating the Impact of ESG Considerations

- Estimating the impact of ESG considerations on credit ratings, in the context of CRE historical performance and the state of the CRE market at present and going forward, by estimating the extent to which ESG risks are:
 - Not impactful to estimates of credit risk (Credit-Neutral ESG Risk); or
 - Currently assessed in estimates of credit risk (Attributed ESG Risk); or
 - Currently not assessed in estimates of credit risk, but potentially impactful to credit risk (Accretive ESG Risk)

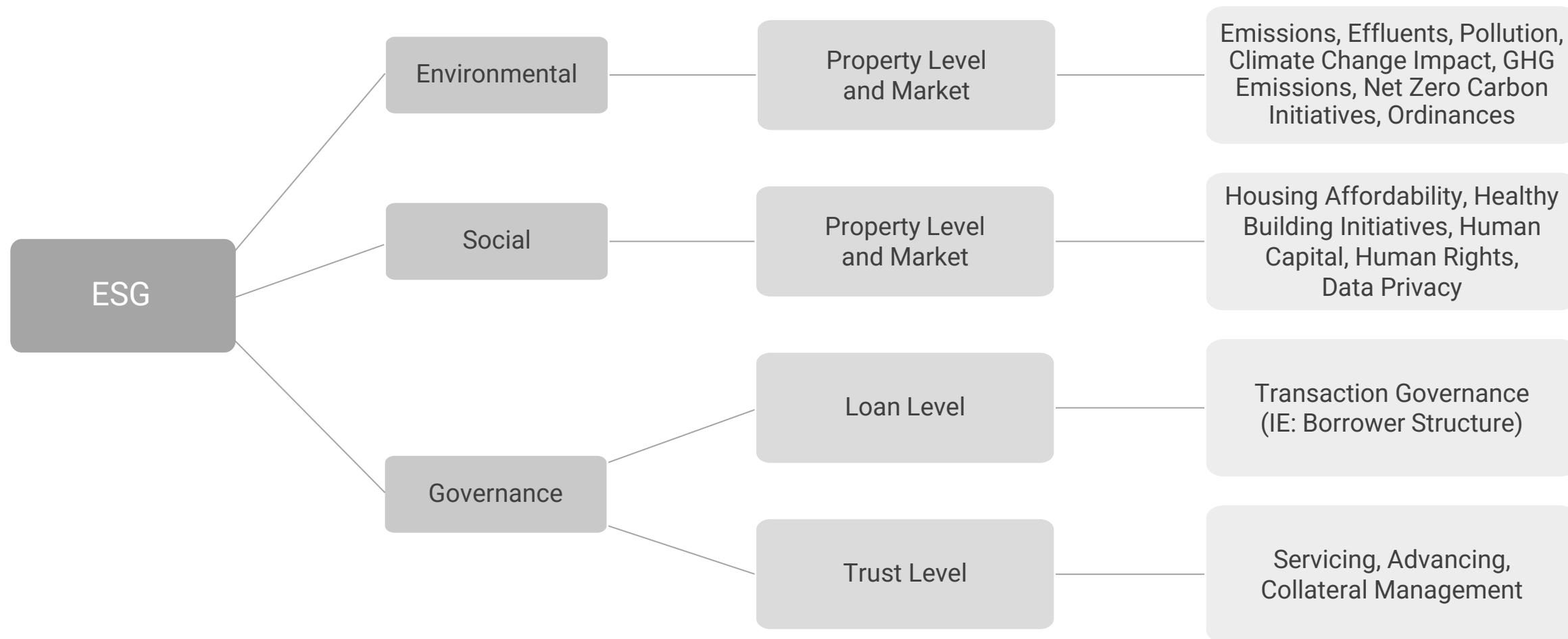
Identifying Credit Risks



ESG Credit Considerations Factors Overview

- Not related to Sustainable/Responsible/Ethical aspects.
- Doesn't focus on how a particular property or investment impacts the world or society.
- It's how the world or society impacts the property or investment:
 - Look inward, self-interest focus.
 - How will the growing ESG risks impact the operations or infrastructure of the property or other collateral?
 - Will the costs of these impacts affect the solvency or credit strength of the collateral?
 - Is investment management making contingencies to mitigate the future effects of the adverse events?
- Example: Climate Change
 - ESG Sustainability viewpoint looks at the company's carbon footprint and actions taken to mitigate
 - ESG Credit Risk analysis looks at the company's vulnerability to increasingly volatile weather and the costs to fortify assets to withstand it.

Identifying Credit Risks



DBRS Morningstar: Analytical Dimensions



Greenhouse Gas Considerations

1

Carbon and
Greenhouse Gas
Costs

- Reduction of greenhouse gas emissions can be accomplished through operational practices or through decreases in embodied carbon.
- Mass timber buildings real contribution stems from its embodied carbon characteristics.
- The process starts with the characteristics of wood itself. Trees capture and lock in carbon as they grow.
- Wood can have a lower carbon footprint than other construction materials.
- Mass timber buildings promote strong forest conservation and Sustainable Forestry supports all 12 United Nation Sustainable Development Goals.
- Lower carbon buildings are in demand from tenants and users who have made net zero commitments.

Social Impact Considerations

2

Social Impact of
Products and
Services

- Investors and owners recognizes the social benefits of attractive properties that reflect healthy building design components.
- Mass timber buildings through their connection to nature, can trigger biophilic responses such as reduced stress, improved cognitive function, better moods, and increased concentration, promoting productivity and creativity.
- Since tenants and users incur considerable labor and personnel costs, maximizing productivity is an important goal.
- Although not common, rating agencies could view these characteristics as credit positive.
- Generally, ESG considerations could be incorporated into the traditional credit rating process.

Traditional Investment Considerations

3

Traditional
Investment
Considerations

- Can mass timber buildings offer an opportunity to outperform the market? Do they achieve higher rents and faster lease up? Are cap rates lower, and therefore values higher, than buildings developed with conventional building materials?
- If this is the case, rating agencies and investors can modify net cash flow projections and capitalization rates. As indicated above, rating agencies can modify inputs to adjust probability of default and loss given defaults.
- Qualitative adjustments can also be made to financial models.
- We expect this to happen over time, but as of now strong historical, quantitative data on building performance is limited or not available.

Q&A

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