KALESNIKOFF

TIMBER INSPIRES

NORTH AMERICA'S LEADER IN MASS TIMBER

FROM SEEDLINGS TO SOLUTIONS, WE BRING YOUR BUILDINGS TO LIFE.

An Introduction & Design Guide to Mass Timber for North American Builders

SEEDLINGS TO SOLUTIONS

WE DESIGN AND MANUFACTURE MASS TIMBER INTO HIGH-PERFORMING, SUSTAINABLE, AND AESTHETICALLY-STUNNING BUILDINGS.

With over 80 years rooted in timber, our legacy draws inspiration from the forests and the endless possibilities of designing and building with wood. From planting to final construction, we are committed to supporting our innovative building partners across North America with mass timber solutions that meet all design and sustainability goals.

CONTENTS

Like the mass timber products we manufacture, this Introduction & Design Guide is designed to serve as a functional and lasting reference for the building community. Within this guide, you'll find:

- **An introduction to mass timber and the Kalesnikoff legacy**
- **A portfolio that shares how we support our building partners with mass timber**
- **A breakdown of the mass timber products and services we offer**
- **A range of span tables to confirm load capacities**

INSIDE BACK COVER:

A thank-you letter from our leadership team – a family with four generations of history in the building industry.

SEEDLINGS

WE ARE INSPIRED BY FORESTS, AND HAVE SHAPED
OUR CULTURE AND BUSINESS OPERATION TO SUSTAIN THEM.

WEIGHING UP TO FIVE TIMES LESS THAN CONCRETE, MASS TIMBER SYSTEMS OFFER SIGNIFICANT BENEFITS TO BOTH BUILDERS AND BUILDING OWNERS ALIKE:

MASS TIMBER BENEFITS FOR BUILDERS

EFFICIENCY

Mass timber builds can be constructed up to 25% faster than traditional builds, significantly reducing labour costs.

DESIGN FLEXIBILITY

With a variety of panel dimensions and wood species to choose from – fabricated to precise tolerances – mass timber offers endless design possibilities.

PERFORMANCE

At only 20% of the weight of comparable buildings, mass timber reduces foundation size and inertial seismic forces.

MASS TIMBER BENEFITS FOR BUILDING OWNERS

SUSTAINABILITY

As a renewable resource, mass timber can significantly reduce a building's carbon footprint.

COMFORT

As an attractive, long-spanning structural system, mass timber supports spacious, open concept planning for biophilic advantages.

HEALTH & HAPPINESS

Introducing natural elements in architectural design has shown to increase productivity and reduce stress.

FOUR GENERATIONS OF WOOD EXPERTS

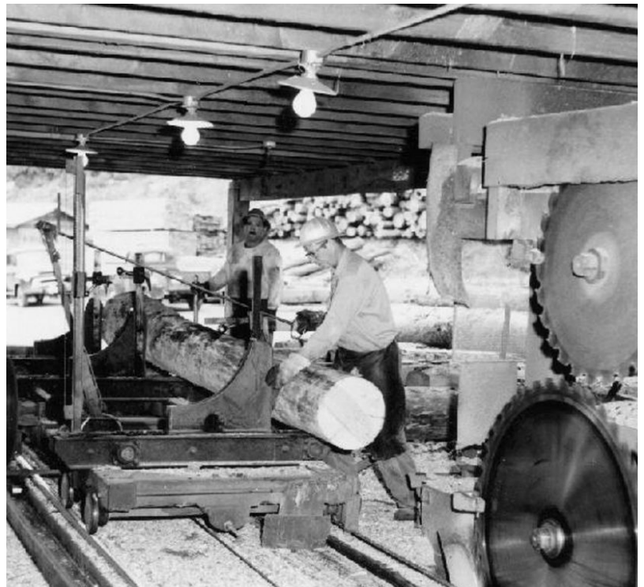
SINCE 1939, THE KALESNIKOFF FAMILY COMPANY HAS GROWN A LEGACY OF TRUST AND INTEGRITY, WITH A REPUTATION FOR PRECISION AND QUALITY.

What began with three brothers in 1939 with axes, horses, cross-cut saws, and a vision for a sustainable life working on the land has evolved into an innovative building partner with the capacity to design and manufacture over 50,000 cubic metres of mass timber product each year.

Though the equipment and technology has changed, what has sustained across four generations has been our respect for people, our passion for the forest, and our expertise.

By offering quality timber products with a personalized service, the Kalesnikoff family quickly earned its reputation as the timber supplier of choice.

Today, we are working hard to continue this legacy with our expansion into mass timber. As North America's most advanced, vertically integrated, multi-species mass timber manufacturer, we offer a high degree of flexibility in the services and products we offer our building partners.



OUR APPROACH TO MANUFACTURING MASS TIMBER IS GROUNDED IN OUR COMMITMENT TO THE FOREST.

"TAKE CARE OF THE LAND, AND THE LAND WILL TAKE CARE OF YOU."

For over 80 years, Kalesnikoff has maintained a history of exemplary sustainable forest management practices, ensuring our renewable resources flourish as much today as they will tomorrow. Through our connection to the forest, our support of local communities, and our commitment to environmental standards, we ensure a healthy and vigorous wood supply for generations to come.

We are excited to be part of an industry that is revolutionizing construction methods across North America. With expertise, experience, and an industry-leading mass timber facility, our passionate team creates structures you can trust and solutions that inspire. **Our mass timber solutions include:**

- **Cost effective materials**
- **Multiple species for a variety of cosmetic appearances**
- **Variety of lumber and stress grades**
- **Flexibility in design**
- **Services that include design and fabrication solutions to achieve project goals**
- **Sequencing and logistics planning**

WORLD CLASS FACILITY, WORLD CLASS PEOPLE

WE BELIEVE MASS TIMBER BELONGS IN NORTH AMERICA.

We invested in developing North America's most advanced, state-of-the-art mass timber manufacturing facility.

From stewardship to advanced manufacturing to final delivery, our people are inspired by a future that is built naturally and responsibly.

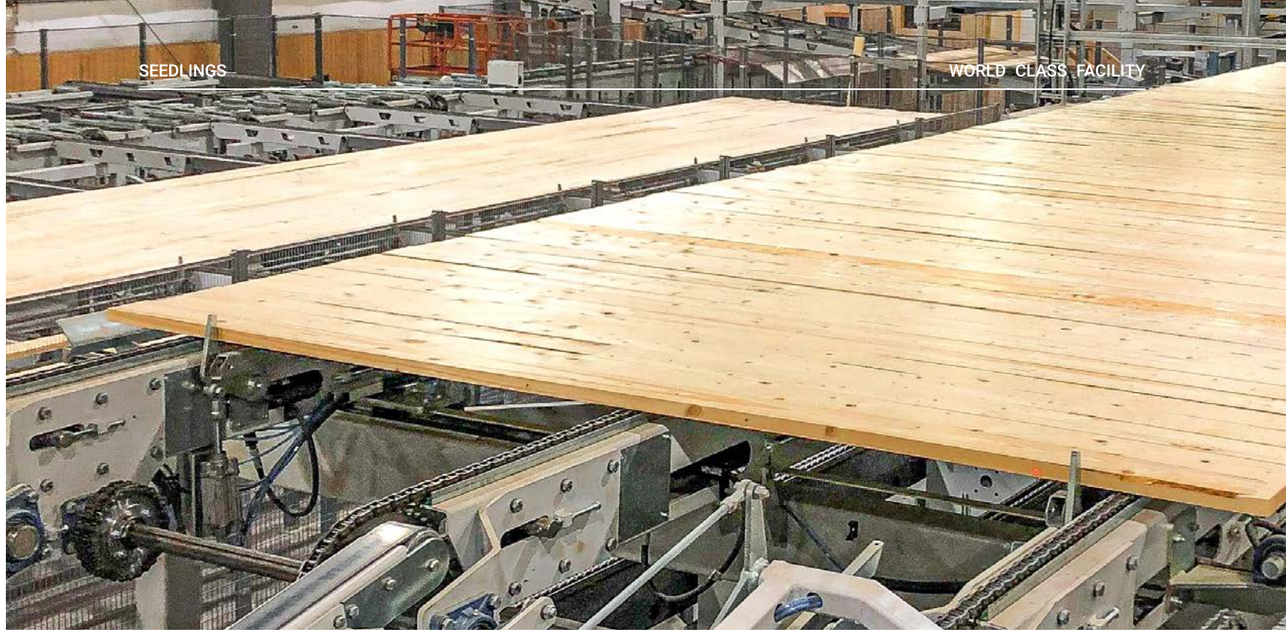
A WORLD CLASS FACILITY FOR NORTH AMERICA'S LEADING BUILDERS

ONLY THE BEST FOR NORTH AMERICA

We spent years studying the mass timber industry to best understand the process and where we can maximize manufacturing efficiencies. By incorporating leading-edge technology and equipment from around the world, we deliver innovative solutions and unmatched service to North American builders.

WE COLLECTED INPUT FROM OUR CUSTOMERS

We listened to builders across North America – architects, engineers, and general contractors – about what they require from a mass timber supplier, and we are delivering on what we heard. This includes service, product variety, and delivery expectations.



WE INVESTED IN THE FUTURE OF CONSTRUCTION

WE ACHIEVED THE CAPACITY TO DELIVER

By being able to plant and harvest our own trees, as well as control our supply through our sawmill, we achieve a capacity of 50,000 cubic metres of mass timber product each year. Our integrated system ensures a precise, consistent product delivered on schedule.

WE ARE ADVANCING NORTH AMERICAN BUILDING PRACTICES

Our investment in equipment and technologies allows us to improve our cutting abilities to create custom grades. Combined with our diverse fibre basket, we can fulfill a wide range of mass timber solutions.

SOLUTIONS

WE HELP SHAPE THE WAY NORTH AMERICA BUILDS
BY CONNECTING WITH NATURE AND CONTRIBUTING TO SUSTAINABILITY.

UNIVERSITY OF VICTORIA STUDENT RESIDENCES

VICTORIA, BC CANADA

PROJECT OWNER: University of Victoria
ENGINEER: Fast + Epp
ARCHITECT: Perkins&Will
CONSTRUCTION MANAGER: EllisDon, Kinetic
COMPLETION: November 2021

SIZE: 650 m3
SPECIES: Douglas Fir
PROJECT TYPE: Institutional, Residential
SUSTAINABLE FEATURES: LEED Gold, Passive House
PROJECT DELIVERY: Design-Bid-Build

A NEW SUSTAINABLE GOAL FOR A NEW GENERATION

With a dynamic and sustainable plan to elevate social living and student engagement, this new residence targets LEED Gold and Passive House certification, which will be a first for the University of Victoria.

DEDICATED SUPPORT THROUGHOUT THE DESIGN AND CONSTRUCTION PHASES

While the two-building, 320,000-square-foot development is predominantly cast-in-place concrete, Kalesnikoff was selected to provide the fabrication and installation support of a large exposed mass timber dining hall.

A COLLABORATIVE APPROACH

True to our collaborative and supportive processes, we worked closely with the engineers and architects throughout the pre-construction phase to accommodate updates to the mechanical and structural drawings.

A SEAMLESS FINISH

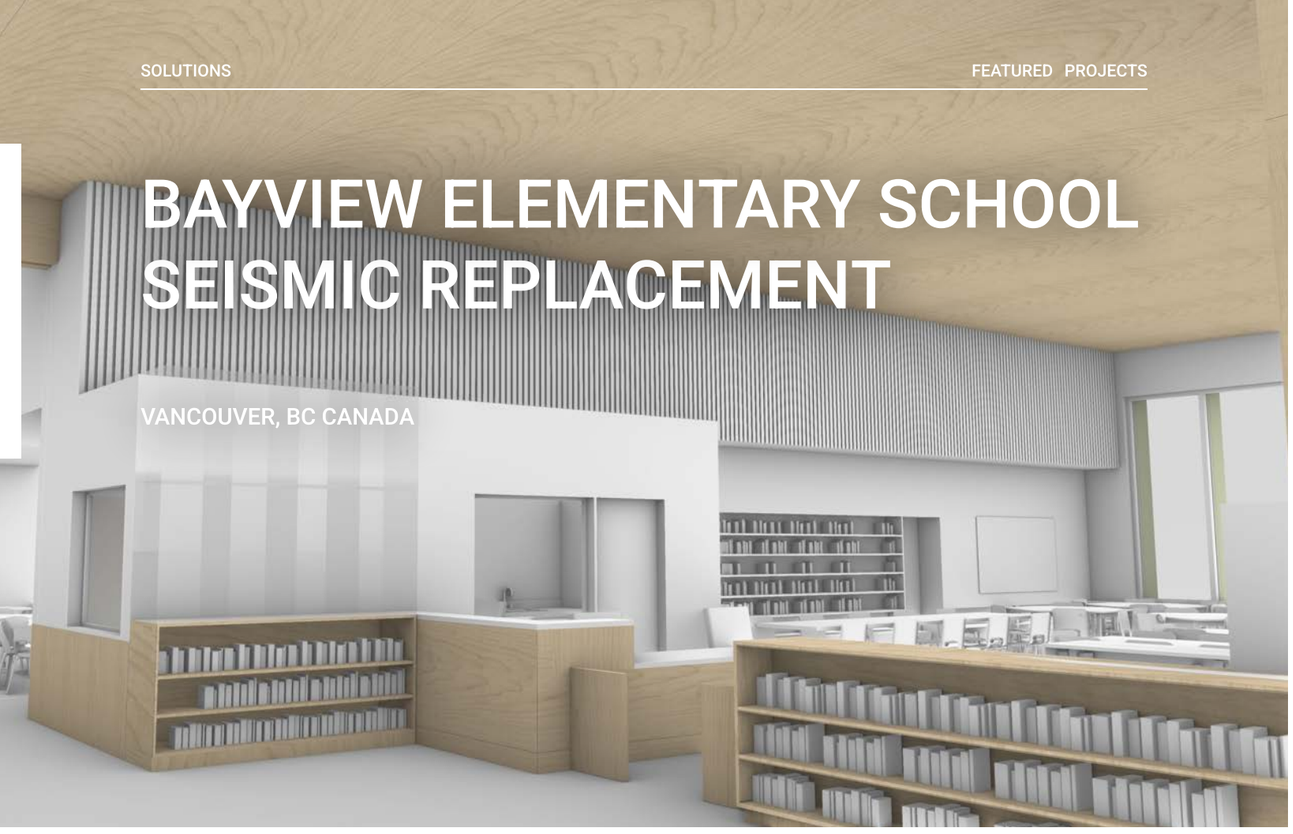
We also modified the design of the CLT panels from Spruce to Douglas Fir to match the Glulam beams for a seamless finish throughout the structure.

PRODUCT OFFERED:

- CLT
- Glulam

SERVICES PROVIDED:

- Detailing
- Shop Drawing
- Pre-Machining
- Pre-Fabrication
- Hardware Assembly
- Sequence Delivery
- Installation Support



BAYVIEW ELEMENTARY SCHOOL SEISMIC REPLACEMENT

VANCOUVER, BC CANADA

PROJECT OWNER: Vancouver School Board
ENGINEER: Fast + Epp
ARCHITECT: Francl Architecture
CONSTRUCTION MANAGER: Chandos Construction
COMPLETION: January 2022

SIZE: 1,335 m3
SPECIES: Spruce (CLT), Fir (Glulam)
PROJECT TYPE: Institutional
SUSTAINABLE FEATURES: TBD
PROJECT DELIVERY: Design-Bid-Build

A NEW SUSTAINABLE GOAL FOR A NEW GENERATION

Delivering a net CO2 benefit of 1,137 metric tons, this new two-storey school will accommodate 365 students, with a preschool, two kindergarten classrooms and 13 classrooms for grades one through seven. The lower level will house administrative offices, classrooms, two multipurpose rooms and a large gymnasium, while the upper level will contain more classrooms and the library.

A ROBUST DESIGN FOR A FLEXIBLE LEARNING ENVIRONMENT

Throughout the pre-construction and design phases, we worked closely with the architect and engineer to deliver a school experience focused on collaborative learning spaces. This included widening corridors, while allowing for break-out rooms, seating, hang-out space, and flexible spaces for informal learning options.

MEETING ALL SEISMIC REQUIREMENTS

To comply with seismic requirements, we ensured the CLT system serves double duty as both gravity and shear walls to resist the high seismic forces of the region. The gymnasium and multipurpose spaces in the lower level are comprised of a composite double-T design, combining CLT with glulam beams to form 16 metre long spanning panels.

PRODUCT OFFERED:

- **CLT**
- **Glulam**

SERVICES PROVIDED:

- **Detailing**
- **Shop Drawing**
- **Pre-Machining**
- **Pre-Fabrication**
- **Hardware Assembly**
- **Sequence Delivery**
- **Installation Support**

TIMBER HOUSE

NEW WESTMINISTER, BC CANADA

PROJECT OWNER: Aragon Properties
ENGINEER: Fast + Epp
ARCHITECT: RWA Group
CONSTRUCTION MANAGER: Aragon Construction
COMPLETION: 2022

SIZE: 3,000 m3
SPECIES: Spruce
PROJECT TYPE: Residential
SUSTAINABLE FEATURES: TBD
PROJECT DELIVERY: Bid-Build

A COST-EFFECTIVE MASS TIMBER KIT-OF-PARTS SOLUTION

Kalesnikoff was brought into this project as a building partner that can offer a cost-effective mass timber kit-of-parts solution that could be fabricated off-site and installed on-site with complete efficiency. By working closely with our client and partnering engineering, architectural, and construction management teams, we helped provide mass timber floors, bearing walls, and shearwalls throughout an entire mid-rise residential development that is both structurally sound and aesthetically pleasing.

CAPITALIZING ON EFFICIENCIES

For a kit-of-parts project of this scale, it's critical to deliver and off-load trucks in sequence to be installed on-site quickly and efficiently. We worked closely with the construction management partner throughout the planning and construction stages, helping them understand how the product would arrive to be assembled on-site. This ensured they were able to accurately schedule truck delivery, material unloading and installation sequencing to minimize time and labour.

A WOOD SPECIES THAT MEETS ALL EXPECTATIONS

We reviewed the different species of wood available with the client to understand which unique features were most important to them and what they were looking to achieve. We ultimately selected spruce as a species that is lightweight, dimensionally stable, and can be fabricated to tight tolerances, while maintaining appealing aesthetic preferences.

COMBINING STRUCTURAL AND AESTHETIC QUALITIES

Mass timber will not only be used as the primary structure throughout the 77-unit mid-rise housing project, but it also serves as an integral design feature of the interior finish, with many walls left exposed to showcase the natural and attractive aesthetic of the wood. As a true kit-of-parts solution, Timber House optimizes mass timber's structural and aesthetic design qualities with constructability and cost efficiency.

PRODUCT OFFERED:

- **CLT**
- **Glulam**

SERVICES PROVIDED:

- **Machining**
- **Fabrication**
- **Hardware Assembly**
- **Delivery**
- **Installation Support**

OAKCREST HEADQUARTERS

VICTORIA, BC CANADA

PROJECT OWNER: Oakcrest Park Estates LTD.
ENGINEER: Skyline Engineering
ARCHITECT: Studio 531
CONSTRUCTION MANAGER: Story Construction
COMPLETION: 2022

SIZE: 235 m3
SPECIES: Spruce (CLT), Fir (Glulam)
PROJECT TYPE: Commercial
SUSTAINABLE FEATURES: TBD
PROJECT DELIVERY: Bid-Build

A TRUE BUILDING PARTNER

This project is a perfect example of how well Kalesnikoff is able to work with a builder that is new to mass timber, guiding them through the nuances of the process to optimize constructability and efficiency. From the early project tender and scheduling stages to on-site delivery and installation, the Kalesnikoff team was a true building partner that offered a complete 360-degree perspective.

DESIGN ASSIST SUPPORT

We leveraged our technical experience with the design and building teams to provide feedback on the engineering details, including offering guidance throughout the specific code requirements of this commercial building. We also standardized all of the screws and fasteners that were specified in the hardware connections, simplifying the materials required for a streamlined and more cost-efficient installation.

INSTALLATION SEQUENCING IN THE SHOP DRAWING STAGE

Early in our shop drawing process, we're able to offer installation sequencing to optimize the delivery and on-site installation of the mass timber panels and beams. Particularly helpful for builders who are new to mass timber, or for projects that are constructed in heavily-populated urban areas with limited room for staging or storing materials, installation sequencing ensures the trucks are scheduled to arrive at the job site and be unloaded directly in place.

PRODUCT OFFERED:

- **CLT**
- **Glulam**

SERVICES PROVIDED:

- **Detailing**
- **Shop Drawing**
- **Machining**
- **Fabrication**
- **Hardware Assembly**
- **Delivery**
- **Installation Support**

MAPLEWOOD FIRE & RESCUE CENTER
NORTH VANCOUVER, BC

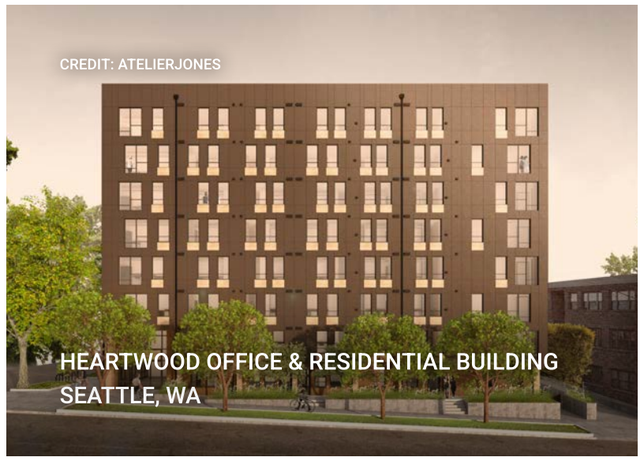
SOUTHSIDE ELEMENTARY SCHOOL
CHILLIWACK, BC

CREDIT: MIGUEL ORELLANA AND HCMA

NEW WEST AQUATIC & COMMUNITY CENTER
NEW WESTMINSTER, BC

SONRISA STUDIO APARTMENTS
SACRAMENTO, CA

ROCKFORD APARTMENTS & COMMERCIAL SPACE
LANGFORD, BC



CREDIT: ATELIERJONES

HEARTWOOD OFFICE & RESIDENTIAL BUILDING
SEATTLE, WA

LATONA OFFICE & LIFE SCIENCE BUILDING
SEATTLE, WA

EGLISE MOUNTAIN SKI LODGE
BIG SKY, MT

CASTLEGAR CHILDCARE CENTER
CASTLEGAR, BC

THE ANNEX AFFORDABLE HOUSING DEVELOPMENT
PORTLAND, OR

PLACE MAILLARDVILLE COMMUNITY CENTER
COQUITLAM, BC

UNIVERSITY OF WASHINGTON TACOMA
TACOMA, WA

CUSTOMIZED SOLUTIONS THROUGH SUPPORTIVE & COLLABORATIVE PROCESSES

WE WORK WITH BUILDING OWNERS, ARCHITECTS, AND ENGINEERS TO DELIVER INNOVATIVE, COST-EFFECTIVE, AND SUSTAINABLE SOLUTIONS.

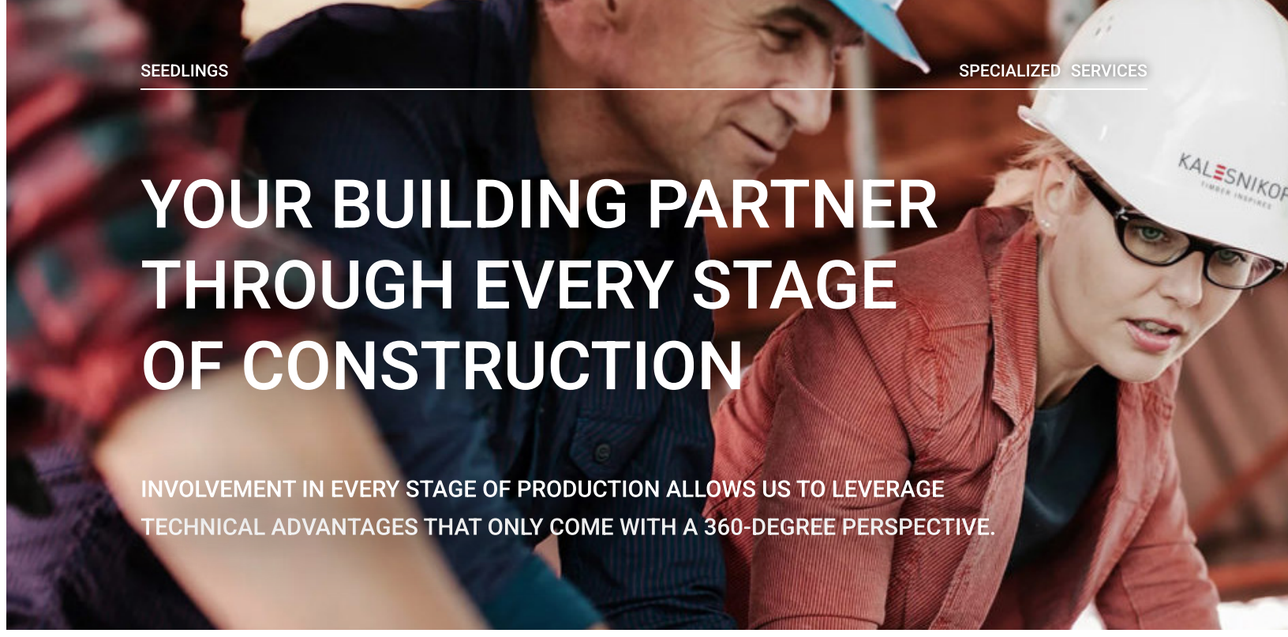
From planting and harvesting, to design and fabrication, to delivery and installation, we are as involved in your mass timber project as you want us to be. With a passionate, knowledgeable, and experienced team, we continuously seek ways to make the most out of each phase and project milestone.

WE ARE RELATIONSHIP BUILDERS

Personalized service is the foundation of our company's legacy. Our team of mass timber specialists will listen to your needs and help you solve your unique building challenges to achieve every design and sustainability goal.

OUR PROVEN PROCESS

We carefully manage everything we plant, harvest, and cut, offering a true seedlings-to-solutions mass timber supply. Through state-of-the-art facilities and access to a variety of species, we're able to meet design specifications with precise machining tolerances.



YOUR BUILDING PARTNER THROUGH EVERY STAGE OF CONSTRUCTION

INVOLVEMENT IN EVERY STAGE OF PRODUCTION ALLOWS US TO LEVERAGE TECHNICAL ADVANTAGES THAT ONLY COME WITH A 360-DEGREE PERSPECTIVE.

Through our integrated delivery approach, we can make design and constructability recommendations in the pre-construction stage that will provide measurable cost savings at the installation stage.

DESIGN ASSIST

We offer complete design-assist guidance and feedback as needed, leveraging our years of technical experience and expertise to customize a plan that achieves your vision.

FABRICATION

With an efficient, precise, and strict tolerance process, we manage our building partners' mass timber fabrication needs to optimize on-site installation.

INSTALLATION SUPPORT

Our knowledgeable and creative team supports our building partners' installation crews with a detailed and proven On-Site Installation Management Strategy, maximizing on-site delivery and scheduling.

CROSS-LAMINATED TIMBER (CLT)

FROM FLOORS TO WALLS TO ROOFING, OUR EDGE-GLUED CLT PANELS PROVIDE NATURALLY BEAUTIFUL, RESPONSIBLE, AND EFFICIENT STRUCTURAL SOLUTIONS.

OUR CLT PROCESS

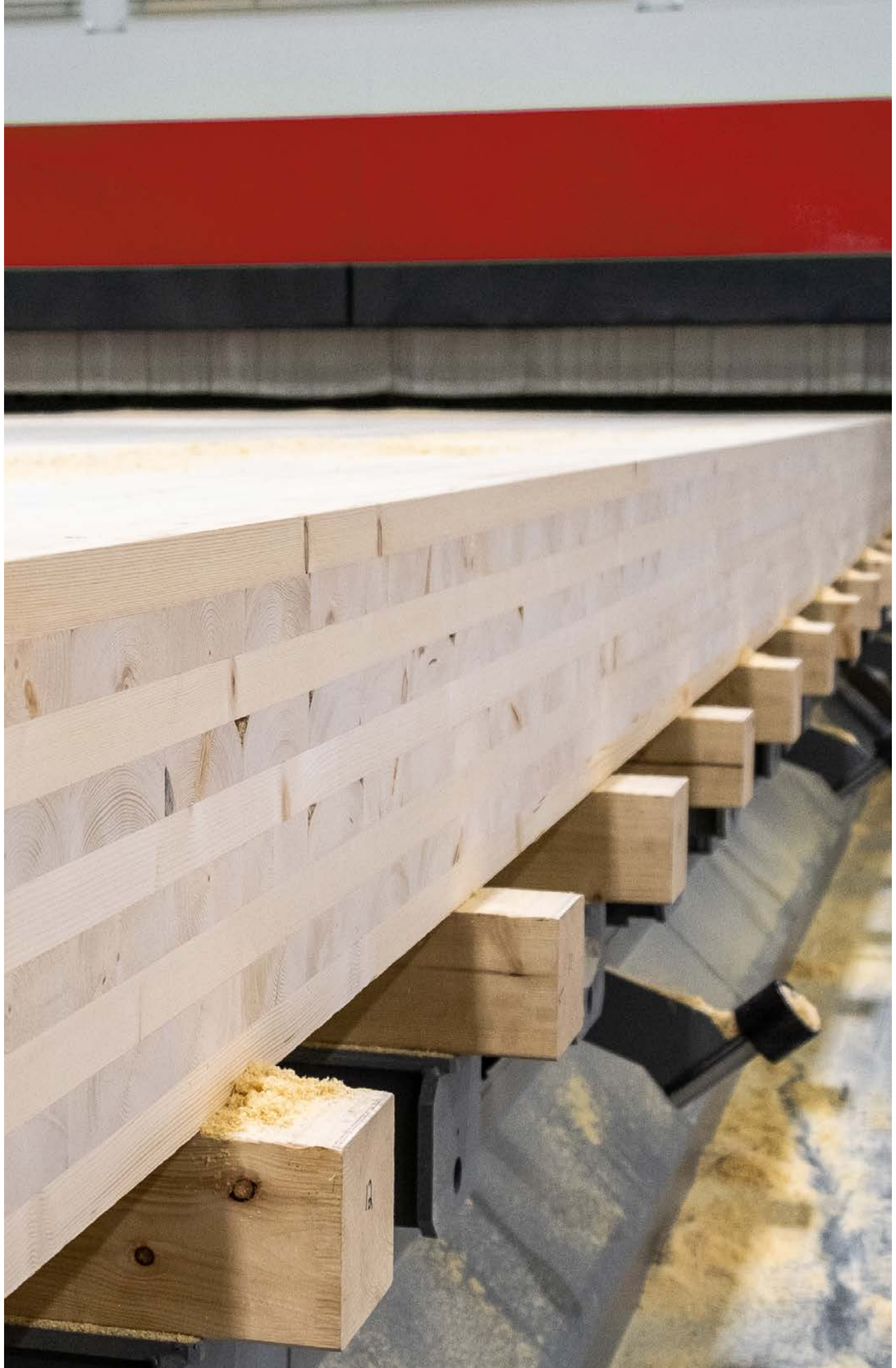
Formed by stacking and gluing together multi-layers of dimensional lumber at an alternating 90-degree orientation, CLT stacks are pressed both vertically and horizontally to allow for an exceptionally clean, edge-glued panel. Using CNC machines, we fabricate to precise tolerances and finish to be installation-ready on the job site.

CLT VS. CONCRETE OR STEEL

Lighter than concrete or steel, CLT panels can reduce foundation costs while remaining extremely durable, carbon neutral, and cost effective, particularly on multi-storey and long-span diaphragm applications.

THE CLT ADVANTAGE

Combined with other materials such as Glulam Beams and GLT Panels, builders can create innovative and stable structures that can save installation time on the job site, while meeting all compliance, design, and sustainability goals.



AVAILABLE SIZES

WIDTHS: up to 3.5 m
HEIGHTS: from 87 mm (3 ply)
up to 315 mm (9 ply)
LENGTHS: up to 60 ft

Custom depths and layups available.

AVAILABLE GRADES

V2	**E1**
V2.2	**E1.2**
V2.4	**E1.3**

V are visually rated input lumber; E are machine stress rated input lumber. All of the layups come in Spruce, Fir, and Hemlock.

MOISTURE CONTENT

12% moisture content plus or minus 2%. Max. 15%.

FINISH

Machining, sanding, patching, and filling as per design specifications. Visual grade finishes are edge-glued.

CERTIFICATION

PRG - 320
Sustainably certified product available by request.

AVAILABLE SPECIES

Douglas Fir/Larch
Spruce (SPF)
Hemlock

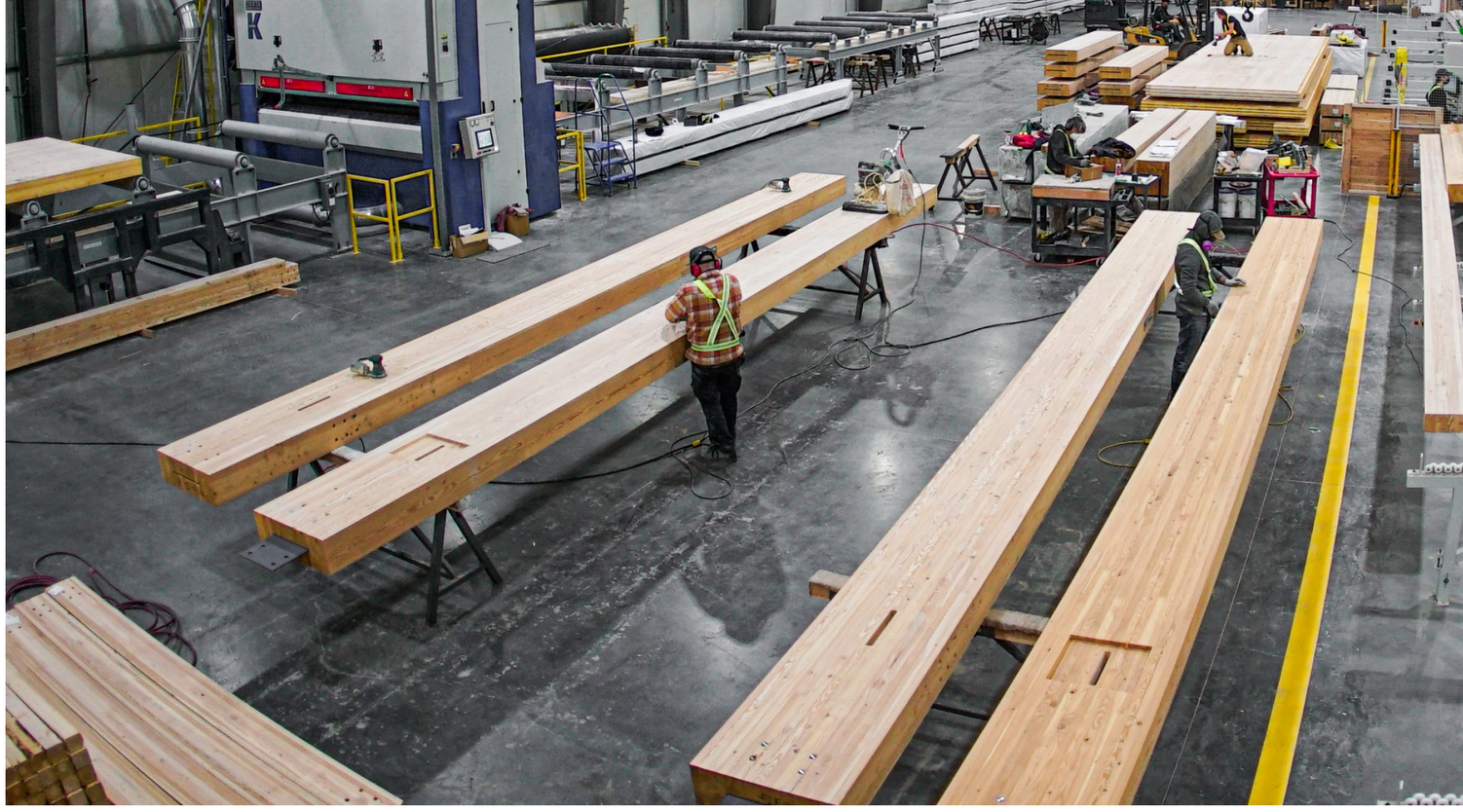
SPAN TABLES

Refer to pages 32-39 for our common CLT Span Tables

GLULAM BEAMS

AN IDEAL SOLUTION FOR HORIZONTAL OR VERTICAL FRAMEWORK IN TALL WOOD BUILDINGS OR STRUCTURES, GLULAM IS A NEXT-GENERATION ALTERNATIVE TO CONCRETE AND STEEL.

Our Glulam can be manufactured into beams and columns of varying size, shape, and configuration to be used in innovative applications where strength, durability, and design are critical. With a world class facility that manufactures lamstock material in a variety of species, our manufacturing precision has been perfected over 30 years.



GLUE-LAMINATED TIMBER PANELS (GLT)

WHEN LAID FLAT FOR FLOOR OR ROOF APPLICATIONS, GLT PANELS COMBINE STRUCTURAL PERFORMANCE WITH AN ATTRACTIVE FINISH.

GLT Panels combine traditional mass timber construction techniques with the precision and quality of engineered wood products. The result is a strong, light-weight structural material that can be engineered in a broad range of configurations, species, and sizes with a clean and attractive aesthetic.

INDUSTRIAL ENGINEERED WOOD PRODUCTS

WE ALSO ENGINEER TIMBER INTO INDUSTRIAL ACCESS AND RIG MATS, ENSURING A HIGH-STRENGTH, LIGHT-WEIGHT, AND COST-EFFECTIVE SOLUTION.

More durable than traditional bolted mats, our industrial access and rig mats transport easily and install quickly, and are engineered to ensure your people and heavy equipment arrive safely, wherever the job site takes you. This includes:

- **Temporary Roadways**
- **Swamp Mats**
- **Crane Mats**
- **Rig Mats**

PREMIUM STRENGTH LUMBER PRODUCTS

WE BRING OVER 80 YEARS OF EXPERIENCE MANUFACTURING WOOD INTO A VARIETY OF HIGH STRENGTH, CONSISTENT, AND DEPENDABLE LUMBER PRODUCTS.

With access to some of the strongest fine grain softwood available across North America, we offer a wide range of premium strength, stress-graded lumber products, designed for framing, general construction, and other high-strength applications. This includes:

- **Dimensional Lumber**
- **Lamstock**
- **Timbers**

DESIGN TABLES

CROSS LAMINATED TIMBER PANEL LAYUPS

PLY	PANEL DEPTH		GRADE	LAYUP								
	mm	in.										
3 Ply	105	4 1/8	V2	35	35	35						
5 Ply	175	6 7/8		35	35	35	35	35				
5Ply	175 EL	6 7/8		35 x 2	35	35 x 2						
7 Ply	245	9 5/8		35	35	35	35	35	35	35		
7 Ply	245 EL	9 5/8		35 x 2	35	35	35	35 x 2				
8 Ply	280 EL	11		35 x 2	35	35	35	35	35	35		
9 Ply	315	12 3/8		35	35	35	35	35	35	35	35	35
3 Ply	87	3.42	V2.2	35	17	35						
5 Ply	139	5.47		35	17	35	17	35				
5 Ply	157 EL	6.17		35 x 2	17	35 x 2						
7 Ply	191	7.52		35	17	35	17	35	17	35		
7 Ply	209 EL	8.22		35 x 2	17	35	17	35 x 2				
9 Ply	243	9.56		35	17	35	17	35	17	35	17	35
9 Ply	261 EL	10.27		35 x 2	17	35	17	35	17	35 x 2		
3 Ply	114	4.5	V2.4	38	38	38						
5 Ply	190	7.5		38	38	38	38	38				
7 Ply	266	10.5		38	38	38	38	38	38	38		
9 Ply	342	13.5		38	38	38	38	38	38	38	38	38
3 Ply	105	4 1/8	E1	35	35	35						
5 Ply	175	6 7/8		35	35	35	35	35				
7 ply	245	9 5/8		35	35	35	35	35	35	35		
9 Ply	315	12 3/8		35	35	35	35	35	35	35	35	35
3 Ply	87	3.42	E1.3	35	17	35						
5 Ply	139	5.47		35	17	35	17	35				
7 Ply	191	7.52		35	17	35	17	35	17	35		
9 Ply	243	9.56		35	17	35	17	35	17	35	17	35
3 Ply	114	4.5	E1.2	38	38	38						
5 Ply	190	7.5		38	38	38	38	38				
7 Ply	266	10.5		38	38	38	38	38	38	38		
9 Ply	342	13.5		38	38	38	38	38	38	38	38	38

LSD STIFFNESS AND UNFACTORED RESISTANCE VALUES

GRADE	MAJOR STRENGTH DIRECTION				MINOR STRENGTH DIRECTION			
	(FbS)eff.f.0 (10^6 N-mm/m)	(EI)eff.f.0 (10^9 N-mm2/m)	(GA)eff.f.0 (10^6 N/m)	Vs.0 (kN/m)	(FbS)eff.f.90 (10^6 -mm^2/m)	(EI)eff.f.0 (10^9 N-mm2/m)	(GA)eff.f.90 (10^6 N/m)	Vs.90 (kN/m)
V2	18	884	7.2	35	1.4	32	7.5	12
	41	3,388	14	58	12	837	15	35
	51	4,210	15	58	1.4	32	8.9	12
	72	8,388	22	82	29	3,213	23	58
	93	10,788	22	82	12	837	16	35
	96	13,660	25	93	29	3,213	23	58
	112	16,724	29	105	51	7,958	30	82
V2.2	13	518	7.5	29	0.34	4	4.4	6
	29	1,907	15	46	4.9	215	8.7	23
	41	3,060	18	52	0.34	4	6.3	6
	52	4,659	22	64	11	856	13	40
	71	7,008	25	70	4.9	215	11	23
	80	9,230	30	81	19	2,147	17	58
	107	13,218	32	87	11	856	15	40
V2.4	21	1,131	7.8	38	1.7	41	8.2	13
	48	4,336	16	63	15	1,071	16	38
	85	10,735	23	89	34	4,112	24	63
	132	21,403	31	114	60	10,185	33	89
E1	42	1,088	7.3	35	1.4	32	9.1	12
	98	4,166	15	58	12	837	18	35
	172	10,306	22	82	29	3,220	27	58
	267	20,536	29	105	51	7,984	36	82
E1.3	30	637	7.7	29	0.34	4	5.3	6
	69	2,347	15	46	4.9	216	11	23
	123	5,732	23	64	11	860	16	40
	191	11,351	31	81	19	2,161	21	58
E1.2	50	1,392	7.9	38	1.7	41	9.8	13
	115	5,332	16	63	15	1,072	20	38
	203	13,190	24	89	34	4,121	30	63
	315	26,282	32	114	60	10,218	39	89

CLT PANEL LOAD TABLE, MAXIMUM SPAN - E1

SINGLE SPAN (m) \ LOAD (kPA)	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11
3	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
3.5	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	175	175	175
4	105	105	105	105	105	105	105	105	105	105	175	175	175	175	175	175	175	175	175
4.5	105	105	105	105	105	105	175	175	175	175	175	175	175	175	175	175	175	175	175
5	105	105	105	105	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175
5.5	105	105	175	175	175	175	175	175	175	175	175	175	175	175	175	175	245	245	245
6	105	175	175	175	175	175	175	175	175	175	175	175	245	245	245	245	245	245	245
6.5	175	175	175	175	175	175	175	175	175	245	245	245	245	245	245	245	245	245	245
7	175	175	175	175	175	175	245	245	245	245	245	245	245	245	245	245	245	245	245
7.5	175	175	175	175	175	245	245	245	245	245	245	245	245	245	245	245	315	315	315
8	175	175	175	245	245	245	245	245	245	245	245	245	245	315	315	315	315	315	315
8.5	175	175	245	245	245	245	245	245	245	245	315	315	315	315	315	315	315	315	315
9	175	245	245	245	245	245	245	245	315	315	315	315	315	315	315	315	315	315	315
9.5	175	245	245	245	245	245	315	315	315	315	315	315	315	315	315	315			
10	245	245	245	245	245	315	315	315	315	315	315	315	315						
10.5	245	245	245	245	315	315	315	315	315	315	315								
11	245	245	245	315	315	315	315	315	315										
11.5	245	245	315	315	315	315	315												
12	245	315	315	315	315	315													
12.5	245	315	315	315	315														
13	315	315	315	315															
13.5	315	315	315																
14	315	315	315																
14.5	315	315																	
15	315	315																	
15.5	315																		
16	315																		

MAXIMAL LENGTH TO FULFILL VIBRATION REQUIREMENTS:

	lv (m)
105 - E1	3.9
175 - E1	5.4
245 - E1	6.7
315 - E1	7.9

NOTES:

1. Only for preliminary design. Panels should be validated with detailed calculation.
2. Panel to fulfill L / 180 deflection requirement for the selected load.
3. Hatched panels are exceeding the allowable length for vibration requirements - see panel maximal length for vibration requirements.
4. Table for single span panel only.
5. If floor buildup weight (not including CLT slab weight) exceeds 2 times the CLT slab weight, maximal span lv shall be multiplied by 0.9.
6. When used in double span, maximal span lv can be multiplied by 1.2 but not more than 8 m.

CLT PANEL LOAD TABLE, MAXIMUM SPAN - E1.1

SINGLE SPAN (m) \ LOAD (kPA)	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11
3	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93
3.5	93	93	93	93	93	93	93	93	93	93	93	148	148	148	148	148	148	148	148
4	93	93	93	93	93	93	148	148	148	148	148	148	148	148	148	148	148	148	148
4.5	93	93	93	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148
5	93	93	148	148	148	148	148	148	148	148	148	148	148	148	203	203	203	203	
5.5	148	148	148	148	148	148	148	148	148	148	203	203	203	203	203	203	203	203	203
6	148	148	148	148	148	148	148	203	203	203	203	203	203	203	203	203	203	203	203
6.5	148	148	148	148	148	203	203	203	203	203	203	203	203	203	203	203	258	258	
7	148	148	148	203	203	203	203	203	203	203	203	203	203	258	258	258	258	258	258
7.5	148	148	203	203	203	203	203	203	203	203	258	258	258	258	258	258	258	258	258
8	148	203	203	203	203	203	203	203	258	258	258	258	258	258	258	258	258	258	
8.5	203	203	203	203	203	203	258	258	258	258	258	258	258	258	258				
9	203	203	203	203	258	258	258	258	258	258	258	258							
9.5	203	203	203	258	258	258	258	258	258	258									
10	203	203	258	258	258	258	258	258											
10.5	203	203	258	258	258	258													
11	203	258	258	258	258														
11.5	258	258	258	258															
12	258	258	258																
12.5	258	258																	
13	258	258																	
13.5	258																		
14	258																		

MAXIMAL LENGTH TO FULFILL VIBRATION REQUIREMENTS:

	lv (m)
93 - E1.1	3.6
148 - E1.1	4.9
203 - E1.1	6.1
258 - E1.1	7.2

NOTES:

1. Only for preliminary design. Panels should be validated with detailed calculation.
2. Panel to fulfill L / 180 deflection requirement for the selected load.
3. Hatched panels are exceeding the allowable length for vibration requirements - see panel maximal length for vibration requirements.
4. Table for single span panel only.
5. If floor buildup weight (not including CLT slab weight) exceeds 2 times the CLT slab weight, maximal span lv shall be multiplied by 0.9.
6. When used in double span, maximal span lv can be multiplied by 1.2 but not more than 8 m.

CLT PANEL LOAD TABLE, MAXIMUM SPAN - E1.2

SINGLE SPAN (m) \ LOAD (kPA)	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11
3	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114
3.5	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114
4	114	114	114	114	114	114	114	114	114	114	114	114	114	190	190	190	190	190	190
4.5	114	114	114	114	114	114	114	114	114	190	190	190	190	190	190	190	190	190	190
5	114	114	114	114	114	190	190	190	190	190	190	190	190	190	190	190	190	190	190
5.5	114	114	114	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190
6	114	114	190	190	190	190	190	190	190	190	190	190	190	190	190	190	266	266	266
6.5	114	190	190	190	190	190	190	190	190	190	190	190	266	266	266	266	266	266	266
7	190	190	190	190	190	190	190	190	190	266	266	266	266	266	266	266	266	266	266
7.5	190	190	190	190	190	190	190	266	266	266	266	266	266	266	266	266	266	266	266
8	190	190	190	190	190	266	266	266	266	266	266	266	266	266	266	266	266	342	342
8.5	190	190	190	190	266	266	266	266	266	266	266	266	266	266	342	342	342	342	342
9	190	190	190	266	266	266	266	266	266	266	266	342	342	342	342	342	342	342	342
9.5	190	190	266	266	266	266	266	266	266	342	342	342	342	342	342	342	342	342	342
10	190	266	266	266	266	266	266	342	342	342	342	342	342	342	342	342	342		
10.5	266	266	266	266	266	266	342	342	342	342	342	342	342	342	342				
11	266	266	266	266	266	342	342	342	342	342	342	342							
11.5	266	266	266	266	342	342	342	342	342	342									
12	266	266	266	342	342	342	342	342	342										
12.5	266	266	342	342	342	342	342												
13	266	342	342	342	342	342													
13.5	266	342	342	342	342														
14	342	342	342	342															
14.5	342	342	342	342															
15	342	342	342																
15.5	342	342																	
16	342	342																	
16.5	342																		
17	342																		

MAXIMAL LENGTH TO FULFILL VIBRATION REQUIREMENTS:

	lv (m)
114 - E1.2	4.1
190 - E1.2	5.7
266 - E1.2	7.1
342 - E1.2	8.4

NOTES:

1. Only for preliminary design. Panels should be validated with detailed calculation.
2. Panel to fulfill L / 180 deflection requirement for the selected load.
3. Hatched panels are exceeding the allowable length for vibration requirements - see panel maximal length for vibration requirements.
4. Table for single span panel only.
5. If floor buildup weight (not including CLT slab weight) exceeds 2 times the CLT slab weight, maximal span lv shall be multiplied by 0.9.
6. When used in double span, maximal span lv can be multiplied by 1.2 but not more than 8 m.

CLT PANEL LOAD TABLE, MAXIMUM SPAN - E1.3

SINGLE SPAN (m) \ LOAD (kPA)	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11
3	87	87	87	87	87	87	87	87	87	87	87	87	87	87	139	139	139	139	139
3.5	87	87	87	87	87	87	87	87	139	139	139	139	139	139	139	139	139	139	139
4	87	87	87	87	87	139	139	139	139	139	139	139	139	139	139	139	139	139	139
4.5	87	87	139	139	139	139	139	139	139	139	139	139	139	139	139	139	139	191	191
5	87	139	139	139	139	139	139	139	139	139	139	139	191	191	191	191	191	191	191
5.5	139	139	139	139	139	139	139	139	191	191	191	191	191	191	191	191	191	191	191
6	139	139	139	139	139	191	191	191	191	191	191	191	191	191	191	191	191	191	243
6.5	139	139	139	139	191	191	191	191	191	191	191	191	191	243	243	243	243	243	243
7	139	139	191	191	191	191	191	191	191	191	243	243	243	243	243	243	243	243	243
7.5	139	191	191	191	191	191	191	191	243	243	243	243	243	243	243	243	243	243	
8	191	191	191	191	191	191	243	243	243	243	243	243	243	243					
8.5	191	191	191	191	243	243	243	243	243	243	243	243							
9	191	191	191	243	243	243	243	243	243										
9.5	191	191	243	243	243	243	243												
10	191	243	243	243	243	243													
10.5	191	243	243	243	243														
11	243	243	243	243															
11.5	243	243	243																
12	243	243																	
12.5	243																		
13	243																		

MAXIMAL LENGTH TO FULFILL VIBRATION REQUIREMENTS:

	lv (m)
87 - E1.3	3.4
139 - E1.3	4.7
191 - E1.3	5.8
243 - E1.3	6.9

NOTES:

1. Only for preliminary design. Panels should be validated with detailed calculation.
2. Panel to fulfill L / 180 deflection requirement for the selected load.
3. Hatched panels are exceeding the allowable length for vibration requirements - see panel maximal length for vibration requirements.
4. Table for single span panel only.
5. If floor buildup weight (not including CLT slab weight) exceeds 2 times the CLT slab weight, maximal span lv shall be multiplied by 0.9.
6. When used in double span, maximal span lv can be multiplied by 1.2 but not more than 8 m.

CLT PANEL LOAD TABLE, MAXIMUM SPAN - V2; EL-V2

SINGLE SPAN (m) \ LOAD (kPA)	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11
3	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
3.5	105	105	105	105	105	105	105	105	105	105	105	105	105	175	175	175	175	175	175
4	105	105	105	105	105	105	105	175	175	175	175	175	175	175	175	175	175	175	175
4.5	105	105	105	105	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175
5	105	105	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175
5.5	105	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	245	245	245
6	175	175	175	175	175	175	175	175	175	175	175	175	245	245	245	245	245	245	245
6.5	175	175	175	175	175	175	175	175	175	245	245	245	245	245	245	245	245	245	245
7	175	175	175	175	175	175	245	245	245	245	245	245	245	245	245	245	245	245	245
7.5	175	175	175	175	175	245	245	245	245	245	245	245	245	245	245	245	245	315	315
8	175	175	175	245	245	245	245	245	245	245	245	245	245	315	315	315	315	315	315
8.5	175	175	245	245	245	245	245	245	245	245	245	315	315	315	315	315	315	315	315
9	175	245	245	245	245	245	245	245	315	315	315	315	315	315	315	315	315	315	315
9.5	175	245	245	245	245	245	245	315	315	315	315	315	315	315	315	315	315		
10	245	245	245	245	245	315	315	315	315	315	315	315	315	315	315				
10.5	245	245	245	245	315	315	315	315	315	315	315								
11	245	245	245	315	315	315	315	315	315	315									
11.5	245	245	315	315	315	315	315	315											
12	245	245	315	315	315	315	315												
12.5	245	315	315	315	315														
13	245	315	315	315	315														
13.5	315	315	315	315															
14	315	315	315																
14.5	315	315																	
15	315	315																	
15.5	315																		
16	315																		

LEGEND: = EL - V2 Grade

MAXIMAL LENGTH TO FULFILL VIBRATION REQUIREMENTS:

	lv (m)
105 - V2	3.6
175 - V2	5.1
175 EL - V2	5.4
245 - V2	6.3
245 EL - V2	6.8
315 - V2	7.5
315 EL - V2	8.0

NOTES:

1. Only for preliminary design. Panels should be validated with detailed calculation.
2. Panel to fulfill L / 180 deflection requirement for the selected load.
3. Hatched panels are exceeding the allowable length for vibration requirements - see panel maximal length for vibration requirements.
4. Table for single span panel only.
5. If floor buildup weight (not including CLT slab weight) exceeds 2 times the CLT slab weight, maximal span lv shall be multiplied by 0.9.
6. When used in double span, maximal span lv can be multiplied by 1.2 but not more than 8 m.

CLT PANEL LOAD TABLE, MAXIMUM SPAN - V2.2

SINGLE SPAN (m) \ LOAD (kPA)	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11
3	87	87	87	87	87	87	87	87	87	87	87	87	139	139	139	139	139	139	139
3.5	87	87	87	87	87	87	139	139	139	139	139	139	139	139	139	139	139	139	139
4	87	87	87	139	139	139	139	139	139	139	139	139	139	139	139	139	139	139	139
4.5	87	139	139	139	139	139	139	139	139	139	139	139	139	157	157	157	157	157	157
5	139	139	139	139	139	139	139	139	139	157	157	157	157	157	157	157	191	191	191
5.5	139	139	139	139	139	139	157	157	157	157	157	191	191	191	191	191	191	191	191
6	139	139	139	139	157	157	157	157	191	191	191	191	191	191	209	209	209	209	209
6.5	139	139	157	157	157	157	191	191	191	191	209	209	209	209	209	209	209	243	243
7	139	157	157	157	191	191	191	191	209	209	209	209	209	243	243	243	243	243	261
7.5	157	157	157	191	191	191	209	209	209	209	243	243	243	243	261	261	261	261	261
8	157	191	191	191	209	209	209	209	243	243	243	261	261	261	261	261	261		
8.5	157	191	191	209	209	209	243	243	243	261	261	261	261	261					
9	191	191	209	209	243	243	243	261	261	261	261								
9.5	191	209	209	243	243	261	261	261	261										
10	209	209	243	243	261	261	261												
10.5	209	209	243	261	261	261													
11	209	243	261	261	261														
11.5	243	243	261	261															
12	243	261	261																
12.5	261	261																	
13	261	261																	
13.5	261																		
14	261																		

MAXIMAL LENGTH TO FULFILL VIBRATION REQUIREMENTS:

	lv (m)
87 - V2.2	3.2
139 - V2.2	4.4
157 - V2.2	5.0
191 - V2.2	5.5
209 - V2.2	6.1
243 - V2.2	6.5
261 - V2.2	7.1

NOTES:

1. Only for preliminary design. Panels should be validated with detailed calculation.
2. Panel to fulfill L / 180 deflection requirement for the selected load.
3. Hatched panels are exceeding the allowable length for vibration requirements - see panel maximal length for vibration requirements.
4. Table for single span panel only.
5. If floor buildup weight (not including CLT slab weight) exceeds 2 times the CLT slab weight, maximal span lv shall be multiplied by 0.9.
6. When used in double span, maximal span lv can be multiplied by 1.2 but not more than 8 m.

On behalf of the Kalesnikoff team, my family and I would like to thank you for considering our mass timber offerings.

As a fourth-generation family company, we have business partnerships going back several decades, and we take pride in the relationships we've established over the years.

We are driven by our passion for the forests, and have a storied history of helping our customers achieve their goals. Ever since my grandfather and his brothers started our company, we've been taking care of the land and protecting our natural resources for future generations.

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We look forward to helping bring your buildings to life.

Sincerely,
Ken Kalesnikoff, Krystle Seed and Chris Kalesnikoff

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