



KOMOREBI - THE PLAY OF SUNLIGHT THROUGH THE TREES

At F3 Timber Technologies, we embrace Komorebi as a core value recognizing the interplay of light and shadow not just in nature, but in the way we approach mass timber construction.

Just as sunlight filtering through trees creates moments of warmth and clarity, we strive to bring innovation, efficiency, and precision to every project, illuminating better ways to build with timber.

More than just a poetic concept, Komorebi reflects our belief in finding solutions amidst challenges, appreciating small yet significant advancements, and integrating sustainable practices into daily work. We see mass timber as more than a material—it's a pathway to a brighter, more sustainable future, where every beam, fastener, and connection contributes to a larger vision.

At F3 Timber Tech, we don't just wait for the light at the end of the tunnel; we recognize and harness the beams of progress along the way.



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INNOVATING FOR A MORE CONSTRUCTABLE FUTURE

At F3 Timber Technologies, we are committed to supporting the future of mass timber construction with reliable connection systems, high-performance fasteners, and practical lifting solutions. Our focus is on precision, sustainability, and efficiency, helping builders, manufacturers, and engineers achieve strong and efficient timber structures across North America.

We believe that form, fit, and function should complement each other, improving installation processes, optimizing load-bearing performance, and promoting safety on every job site. Whether working with cross-laminated timber (CLT), nail-laminated timber (NLT), glued-laminated timber (Glulam), or framed panels, our range of structural fasteners, rigging systems, bracing, and lifting solutions is designed to provide the durability and accuracy that modern timber construction requires.



OUR VISION: ELEVATING MASS TIMBER WITH SMARTER SOLUTIONS

Timber is becoming an increasingly important material in construction, valued for its sustainability, strength, and natural aesthetic. At F3 Timber Technologies, we support the growth of prefabrication and modular building by providing fastening, lifting, and bracing systems designed to improve efficiency, reduce material waste, and simplify installation.

We work closely with trusted European manufacturers such as Schmid Screws, SHERPA Connectors, Pewag Rigging, Fisch Tools, and Regupol, bringing proven and certified solutions to the North American market. With a focus on connection detailing, load path optimization, and reliable fastening technology, we aim to support builders and engineers in constructing durable, safe, and efficient timber structures.

As mass timber continues to evolve, we recognize the importance of innovation and collaboration in the industry. Our approach is centered on practical, field-tested solutions that integrate seamlessly into existing workflows, helping to address common challenges in timber construction. By equipping professionals with high-quality fastening and lifting systems, we strive to make timber projects more accessible, efficient, and resilient, contributing to a more sustainable built environment.

INNOVATION THAT WORKS FOR YOU

At F3 Timber Technologies, we focus on developing practical solutions that meet the demands of modern timber construction. Our expertise in timber connections ensures that every component—from custom bracing to lifting hardware—is designed for efficiency, reliability, and ease of use.

The BRGN Plate System simplifies panel lifting, enabling faster and more precise installations, while our GRI (Glued Rod Imbeds) system provides a streamlined approach to glued-in rod connections, enhancing both accuracy and structural integrity.

Beyond fastening and lifting, we continue to innovate with the CRUX Bracing System, which allows for quick, adaptable temporary bracing, and the BRGN Brace, designed for secure and efficient load stabilization.

Additionally, our Hy-Horse—a hybrid steel and timber sawhorse brings durability and versatility to mass timber job sites. Whether improving installation workflows, reinforcing structural elements, or optimizing site logistics, our solutions help builders work safer, smarter, and more efficiently.

OUR COMMITMENT: QUALITY, SAFETY, AND SUSTAINABILITY

At F3 Timber Technologies, we focus on providing practical and effective solutions for timber construction. Working alongside some of the best timber engineers in the industry, we ensure that our products are designed for precision engineering, optimizing loadbearing efficiency and installation speed.

Safety is at the core of what we do, with our lifting, fastening, and bracing systems meeting high industry standards to support secure and reliable builds.

We also recognize the importance of sustainability—our solutions help minimize waste, improve efficiency, and maximize the performance of timber as a renewable building material.

By combining expert collaboration with innovative design, we aim to support the future of mass timber and modular construction in a way that is both practical and forward-thinking.

SCHMID FASTENERS



Schmid Schrauben fasteners are the gold standard for mass timber construction. With over 180 years of experience, the company has built a strong reputation for precision engineering, reliability, and innovation in the construction and timber industries.

Their products meet rigourous quality standards and certifications, ensuring durability and performance.

Engineered and manufactured in Austria with cuttingedge technology, these high-performance timber screws ensure seamless connections, superior load-bearing capacity, and long-term durability for all your timber structures.





The Schmid RAPID® T-Lift system enables safe, efficient lifting of mass timber elements, including CLT panels. Available in 1.3-ton and 2.5-ton capacities, it uses self-drilling screws (Ø12mm or Ø16mm, ETA-12/0373 certified) to handle axial and transverse loads.

The Schmid RAPID® Hardwood screw is designed for high-density woods like oak, beech, and LVL-beech. Its larger core diameter increases bending strength and pull-out resistance, making it more durable in hardwood applications.





The Schmid RAPID® T-Con screw is specifically designed for timberconcrete composite (TCC) systems. Ideal for TCC floors and ceilings, it enables efficient load transfer between timber and concrete. reducing deflection and increasing fire resistance. This screw is versatile for new construction and refurbishments.





ICC-FSR

Schmid Schrauben Hainfeld's ICC-ES Evaluation Report (ESR-4549) certifies RAPID® wood-drilling screws for compliance with IBC and IRC codes (2021-2012). These high-strength, heat-treated, galvanized screws support engineered wood-to-wood and steelto-wood connections. Featuring self-tapping tips, partial and full threads, and optimized knurling, they meet structural performance standards.



The Schmid RAPID® Secure screwin tool ensures fast, precise, and secure installation of long timber construction screws. It firmly holds the screw head, preventing slippage and reducing wear. Ideal for overhead and angled applications, it enhances work safety and efficiency while extending bit and screw life.



FPD

Schmid Schrauben Hainfeld has released an Environmental Product Declaration (EPD) for its selfdrilling wood screws, in accordance with EN 15804+A2 and ISO 14025 / ISO 21930. The EPD, published on August 30, 2024, and valid until 2029, provides a comprehensive assessment of the environmental impact of these screws from cradle to gate, including modules A4-A5, C1-C4, and D.

SCHMID SCHRAUBEN DOCUMENTATION & RESOURCES



Schmid has recently published two comprehensive Design Guides for Timber Construction, tailored for both the Canadian and U.S. markets. These guides serve as essential resources for architects, engineers, and builders working with mass timber and engineered wood products. They provide indepth technical data, application strategies, and connection details optimized for structural integrity, ease of installation, and compliance with regional building codes.



Hydrogen Embrittlement As mass timber structures grow in scale and complexity, the durability of metal fasteners is crucial. Schmid Schrauben takes proactive measures to ensure the risk of hydrogen embrittlement (HE) remains extremely low. Through tested and proven methods, including controlled material selection, precise heat treatment, and optimized coatings, they uphold the highest standards for fastener reliability in mass timber construction. As the **exclusive North American distributor** of Schmid Schrauben products, F3 Timber Technologies provides architects, engineers, and builders with direct access to premium fastening solutions.

Visit our online store today!

www.F3TimberTech.shop







BRGN PLATE LIFTING SYSTEM

The BRGN Plate, developed by F3 Timber Technologies, is a highperformance lifting system designed for handling mass timber panels, including Cross-Laminated Timber (CLT), Nail-Laminated Timber (NLT), and framed panels. Its versatile design supports both flat and vertical lifting, making it ideal for diverse construction applications.

KEY FEATURES:

LOW PROFILE DESIGN

The load plate can be pre-installed in the shop with minimal dunnage required during transport.





DETACHABLE LOAD PLATE

The load plate detaches from the lift anchor, allowing for a combined thickness of less than 1.5 inches when fastened. which is advantageous for pre-installation and transportation.





HIGH EFFICIENCY

The BRGN plate lifting system was instrumental in the efficient and safe construction of Brock Commons Tallwood House, enabling rapid CLT Panel installation.

By securing lifting plates to the top of CLT panels, the system allowed for quick crane rigging attachment and release, achieving cycle times of less than six minutes per panel, significantly boosting construction speed.

Brock Commons Tallwood House is an 18-story hybrid mass timber **building** at the University of British Columbia, completed in 2017.

It was one of the tallest mass timber structures in the world at the time of its construction.

The building features a concrete foundation and cores, with a structure primarily composed of glulam columns and CLT floor panels.

The use of prefabricated components, including CLT and steel connectors, allowed for rapid assembly, with the **timber structure** completed in just 66 days.

The project demonstrated the potential of mass timber for high-rise construction, emphasizing sustainability, speed, and precision in modern building methods.



PEWAG

F3 Timber Technologies is an authorized distributor of Pewag products, offering a range of rigging equipment tailored for mass timber construction.



PRODUCTS INCLUDE:

Lifting Chains: High-strength chains designed for secure lifting operations.

Balancers: Devices that ensure balanced and stable lifting of heavy timber components.

Spreader Bars: Used to distribute load evenly during lifting, enhancing safety and efficiency.

Chains and Shackles: Durable chains and shackles that provide reliable connections and securement during lifting and rigging tasks.





TIMBER DOGG

Timber Doggs are robust panel pullers designed by F3 Timber Technologies to facilitate the efficient installation of mass timber panels. These heavy-duty panel movers are engineered for durability and high capacity, capable of pushing and pulling with a Working Load Limit (WLL) of 13,000 pounds, allowing precise movement and adjustment of almost any mass timber panel. For lighter applications, a smaller version with a 3,500-pound WLL is also available.



KEY FEATURES

- 13,000-lb WLL for heavy-duty applications.
- 3,500-lb WLL version for lighter tasks.
- Enables precise positioning of mass timber panels.
- Compatible with the ANKR Bracket

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• Durable construction designed to withstand demanding use.

SHERPA CONNECTORS



SHERPA CLT CONNECTOR

TECHNICAL DATA

Configuration			Characteristic value ¹⁾		
Configuration		Interlayer ≤ 12 mm	Compriband ≰ 2 mm		
Normal forces	Carrying capability	R _{1,k}	18,	80 ²⁾	kN
Normacionces	Stiffness	K _{ser}	9.	750	N/mm
Choor force on the surface	Carrying capability	R _{2,k}	10,00 ²⁾		kN
Shear force on the surface	Stiffness	K_{ser}	3.300		N/mm
Shear force from the surface	Carrying capability	R _{3,k} (+)	16,00 ⁻²⁾	16,50 ²⁾	kN
(positive) Stiffness		K _{ser}	3.	600	N/mm
Shear force from the surface	Carrying capability	R _{3,k} .[-]	5,30	7,00	kN
(negative)	Stiffness	K	870	1.000	N/mm

SHERPA SONUS SILENT TIMBER CONNECTOR

SONUS M

115 x 75 x 140 mm (L x W x H) Art. no. 10000037415

Load capacity in kN	R _{1,k}	R _{2/3,k}	R _{4,k}	R _{5,k}
Option 1	5.40	7.36	10.5	1.25
Option 2	17.8	10.6	14.8	2.34
Option 3	7.73	7.36	10.5	2.33
Option 4	17.9	10.6	14.8	4.38

SONUS L

235 x 75 x 140 mm (L x W x H) Art. no. 10000037416

Load capacity in kN	R _{1,k}	R _{2/3,k}	$R_{4,k}$	$R_{5,k}$
Option 1	11.8	27.3	20.6	2.84
Option 2	34.9	32.4	29.7	4.70
Option 3	16.7	27.8	20.6	5.32
Option 4	36.6	33.9	29.7	8.79

PERFORMANCE COMPARISON

L-joint in CLT wall (100 mm) and CLT ceiling (140 mm) with sound insulation support tested in 1:1 format and with load application of 0.18 N/mm².

Joint insulation measurement K_{ij} tested in each case with and without elbow connector with comparable load capacity $R_{2/3,k}$ (kN/running metre).

With sound insulation support only
With sound insulation support and elbow connector
Joint insulation measurement modified by elbow connector (ΔK_{ii})

GEOMETRY

CLT connector		
Dimensions 18 x 40 x 110 mm		
Connecting material	8 pcs. 8,0 x 100 /120 / 140 mm	
connecting materiat	2 pcs. 6,5 x 65 mm	









SHERPA CONCEALED CONNECTOR

CONCEALED CONNECTION



XL

XL 55

XL 70 XL 80

XL 100 XL 120 XL 140

XL 170

XL 190

XL 220 XL 250



м	min. beam height in mm			min. beam height	
м	6.5 x 65*	6.5 x 85	6.5 x 105		
M 15	120	160	180		
M 20	140	180	200		
M 25	160	200	220		
M 30	180	220	240		
M 40	200	240	260		

	min. beam height in mm		
Ľ	8 x 100*	8 x 120	8 x 140
L 30	180	220	240
L 40	200	240	260
L 50	240	280	300
L 60	280	320	340
L 80	320	360	380
L 100	360	400	420
L 120	400	440	460

Recessecor	ssing in ndary bean	n
min. beam he	eight in mm	
8 x 120/140 8 x 160*/180	8 x 200	

8 x 120/140 8 x 160*/180	8 x 200	XXL
280	300	XXL 10
320	340	XXL 12
360	380	XXL 14
400	420	XXL 17
440	460	XXL 19
480	500	XXL 22
520	540	XXL 25
560	580	XXL 28
600	620	XXL 30
670	440	

	min. beam h	eight in mm
XXL	8 x 120/140 8 x 160*/180	8 x 200
XXL 100	320	360
XXL 120	360	400
XXL 140	400	440
XXL 170	440	480
XXL 190	480	520
XXL 220	520	560
XXL 250	560	600
XXL 280	600	640
XXL 300	640	680



REGUPOL

F3 Timber Tech is proud to be the new rep for Regupol Sonus curve Series, an acoustic underlayment offering highperformance for superior impact sound insulation. Made from recycled rubber, it effectively reduces structure-borne noise in multi-story buildings and suits various flooring types, including tile, hardwood, and vinyl. Engineered for durability and sustainability, it meets strict building code requirements while enhancing acoustic comfort in residential and commercial spaces.

SONUS CURVE SERIES







sonus curve 6
sonus curve 8
sonus curve 15
sonus curve 17
sonus curve 25
sonus curve 50
sonus curve 75

HY-HORSE



This high-capacity, collapsible sawhorse is developed by F3 Timber Technologies. It features a hybrid steel and timber construction with a customizable saddle. Designed for heavy-duty applications, these sawhorses are anticipated to have a Working Load Limit (WLL) of 5,000 lbs, ensuring strength and reliability for industrial and construction use. *Capacity not yet tested





FISCH

FORSTNER BIT

Fisch's Forstner bits are forged and CNC-machined, making them stronger, longer-lasting, and more precise.



ENON PLUG CUTTER

Fisch's Tenon Plug Cutter is trusted for its precision and accuracy, and is used to create F3 Timber Tech's wood plugs.



F3 Timber Tech supplies custom wood plugs in edge or face grain, with diameters up to 2 inches (imperial) and 80mm (metric). Suitable for mass timber, these plugs are made for a precise fit and a clean finish.











CRUX BRACING SYSTEM

The CRUX Bracing System is a highly efficient temporary bracing system solution designed to enhance safety, speed, and flexibility on mass timber construction sites. It's quick deployment and easy installation reduce setup time while providing rigid, adjustable support to keep timber elements stable. The system is versatile, adaptable and minimizes disruptions by ensuring construction stays on schedule.

On the Google MT1 project, the CRUX Bracing System played a crucial role in temporary bracing, sequencing, and logistics. It provided secure support of mass timber elements, ensuring stability during installation and preventing delays. The system's adaptability helped streamline the construction process, allowing multiple trades to work efficiently while accommodating design changes and varying site conditions. By integrating CRUX, the project successfully navigated the

complexities of large-scale mass timber construction.











KEY FEATURES:

IMPROVED STRUCTURAL STABILITY

The CRUX Bracing System played a crucial role in the construction of **Google's MT1** building in Sunnyvale, California.

This 182,500-sqft mass timber office building utiilized the **CRUX BKT1 brackets** to ensure structural stability during assembly.



The **CRUX BKT1** brackets allowed for temporary bracing that stabilized columns and beams during assembly.

Shorter columns (up to 16 feet), rigid bracing with turnbuckles ensured they remained upright.

Taller columns (up to 30 feet), wire ropes in mupltiple directions provided additional support.

FASTER, MORE EFFICIENT INSTALLATION

Temporary brace bays provided lateral stability while the permanent system was still being assembled. The braces were anchored to the bottom of adjacent columns during the second bracing phase, allowing for reinforcement and concrete work without obstruction.

REDUCED DAMAGE TO TIMBER ELEMENTS

Unlike traditional steel bracing methods, the CRUX system minimizes direct steel-to-wood contact. This design helped maintain the integrity of the mass timber components and reduced the need for post-installation cleaning or repairs.



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GENERAL NOTES:

1. ALL FASTENERS TO BE SCHMID RAPID T-LIFT 12 MM (1/2") DIAMETER FULLY THREADED SCREWS.

2. BRACKETS MUST BE INSTALLED IN PAIRS ON OPPOSITE CORNERS WITH RATCHET STRA

3. RIGGING SHALL ENGAGE BOTH BRACKETS AT ALL TIMES.

4. PLYWOOD SPACER THICKNESS NOT TO EXCEED 1/2".

5. SCREWS MUST NOT BE SCREWED INTO DRYING CHECKS OR SIMILAR DEFECTS

6. SCREWS ARE TO BE USED ONLY ONCE. DO NOT RE-USE.

7. COLUMN DENSITY ASSUMED TO BE G = 0.42. MAXIMUM ALLOWABLE LIFTING LOADS MUST BE REDUCED WITH LOWER DENSITIES. CONTACT F3TT FOR GUIDANCE.

8. LOADS PROVIDED ARE ACTUAL WEIGHTS OF COLUMN INCLUDING ALL PRE-ATTACHED HARDWARE.

MAXIMUM LOAD TABLE - STATIONARY CRANE

	LIFTING SPEED		
SCREW	≤ 5 FT/SEC (DYNAMIC FACTOR = 1.1)	> 5 FT/SEC (DYNAMIC FACTOR = 1.3)	
RAPID T-LIFT 12x120	5800 lb.	4900 lb.	
RAPID T-LIFT 12x160	7800 lb.	6600 lb.	

MAXIMUM LOAD TABLE - MOBILE CRANE

	TERRAIN		
SCREW	EVEN (DYNAMIC FACTOR = 1.65)	UNEVEN (DYNAMIC FACTOR = 2.0)	
RAPID T-LIFT 12x120	3900 lb.	3200 lb.	
RAPID T-LIFT 12x160	5200 lb.	4200 lb.	



CRUX BRACKET LIFTING APPLICATIONS

CRUX Brackets can be mounted to columns and serve as lifting points, facilitating efficient handling and installation of timber components. They also provide connection points for timber or cable braces, streamlining the construction process.

This feature was applied during construction of the **Capilano University ECCE** building in North Vancouver, British Columbia.

*Engineering on Page 31







BRGN BRACE

The BRGN Brace, developed by F3 Timber Technologies, is available in two adjustable sizes: the 156X and the 249X. These two-stage telescoping braces offer independent adjustability or can be combined for extended reach, with a maximum extension of 349 inches. This flexibility allows builders to adapt to a wide range of mass timber construction needs, ensuring optimal support and stability.

For even greater versatility, two BRGN Braces of a similar design can be combined to create a three-stage telescoping brace, offering an extended reach beyond standard configurations. This modular approach enhances adjustability, load-bearing capacity, and ease of deployment, making the BRGN Brace a powerful and adaptable solution for securing mass timber elements. Additionally, it is fully compatible with the CRUX Bracing System, ensuring seamless integration into modern construction workflows.







STEDOX RENTALS

Stedox braces are lightweight and durable wall supports designed for the precise installation of prefabricated wall elements, particularly in mass timber construction. Their ergonomic design allows for quick and accurate positioning, improving safety and efficiency on construction sites.



For details on rental availability, visit our website.

www.F3TimberTech.com



F3 Timber Technologies offers Stedox braces for rent, providing a cost-effective solution for construction professionals in need of temporary bracing for mass timber projects. Renting allows builders to access highquality bracing without a longterm investment, ensuring greater flexibility in project planning and budgeting.

For those seeking even greater strength and durability, check out our newly developed BRGN brace, designed for superior loadbearing capacity and long-term performance.



GRI SYSTEM GLUED-ROD IMBE

F3 Timber Technologies' Glued Rod Imbed (GRI) System enables strong, precise, and easy-to-install connections for mass timber structures. It includes glued rod imbeds, threaded rods, and driver bits for efficient assembly.

A notable application of the GRI System is in the Malahat Skywalk project, where it was utilized to securely and accurately connect 40-meter columns to their base plates, ensuring structural integrity and streamlined installation.



noto courtesy of: Malahat Sky Walk Corporation



HOW IT WORKS

The Glued Rod Imbed (GRI) System, developed by F3 Timber Technologies, is designed to improve the installation of glued-in rods for mass timber connections.

This system addresses common installation challenges, including gravity-induced epoxy sagging, rod misalignment, air pockets, inconsistent embedment depths, and prolonged installation times.





THE PROBLEM: too slow or poor quality

		m julia and an and an 		
Gravity	Centering rod	Air Pockets	Consistent	Speed of Installation
Most connections are	in hole	Epoxy is placed in the	Depth	High-quality glued-
installed horizontally,	Holes are drilled for	hole before inserting	Achieving uniform	in-rod methods exist,
causing rods to shift	precise alignment,	the rod, with twisting	rod depth can be	but they are slow
and epoxy to sag or	ensuring rods stay	motions helping it	challenging, with	and impractical for
leak.	centered for accurate	reach the desired	air pockets causing	on-site use.
	connnections.	depth.	outward pressure.	
	Current methods	However, air pockets	Without restraint,	
	often require a jig to	can be difficult to	rods may shift during	
	maintain proper rod	fully eliminate.	curing.	
	positioning.	5		

Current methods of installing epoxied rods are







THE



Fast and Easy Installation

A slightly larger secondary hole is drilled to the depth of the imbed, allowing the GRI to be friction-fit by hammering it into place.

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$S \cap L \cup T \cap N$: GRI System (A New Method)



Maintains Consistent placement of epoxy

The imbed acts as a dam, preventing epoxy from escaping while its relief channel allows excess epoxy to flow out.



Keeps rod in place and centered in hole

The internally threaded imbed centers the rod and maintains proper spacing. Threading the rod through ensures accurate depth, even epoxy coverage, and minimizes air pockets.

SHAPING THE FUTURE OF MASS TIMBER CONSTRUCTION WITH BCIT

This summer 2025, BCIT will be launching the Mass Timber Constructability and Connections Hub, a modular, mobile solution designed to modernize mass timber education. Led by Nate Bergen (our founder and CEO) and the Mass Timber team at BCIT, this initiative enhances training accessibility and fosters hands-on learning in connection techniques.

Unlike traditional large-scale training methods, the hub focuses on precision in mass timber connections, making education safer, more adaptable, and widely accessible. It also serves as a collaborative space, testing platform, and workforce training tool, equipping future builders with the practical skills needed to drive innovation in the mass timber industry.

For those interested in learning more about the Mass Timber Constructability and Connections Hub, BCIT welcomes inquiries from industry professionals, educators, and students looking to enhance their expertise in mass timber construction.



Whether you're seeking training opportunities, collaboration, or details about upcoming courses, reach out to Nate Bergen at nathan_ bergen@bcit.ca for more information.



F3 Timber Technologies is proud to have collaborated on the NLT Canadian Design and Construction Guide 2.0.

This comprehensive resource combines design, construction, and fabrication expertise from built projects into an easy-to-use reference, providing builders, engineers, and architects in the mass timber industry with valuable insights and best practices for designing and constructing with NLT. We are excited to support the advancement of sustainable and innovative timber construction through this essential guide.







A MESSAGE OF APPRECIATION FROM OUR CEO

To our valued partners, clients, and supporters, At F3 Timber Technologies, our mission is to drive innovation in mass timber construction, but we know that progress is never achieved alone. Your trust, collaboration, and shared commitment to excellence are what make this industry thrive.

From advanced bracing systems to precision-engineered connections, we are dedicated to providing solutions that make mass timber construction safer, faster, and more efficient. Your support fuels our innovation, and together, we are building not just structures but a more sustainable future.

Thank you for being part of this journey. We look forward to what we will accomplish together in the years ahead.

Nate Bergen CEO, F3 Timber Technologies





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FORM FIT FUNCTION