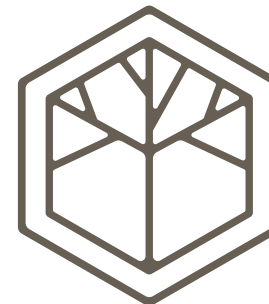
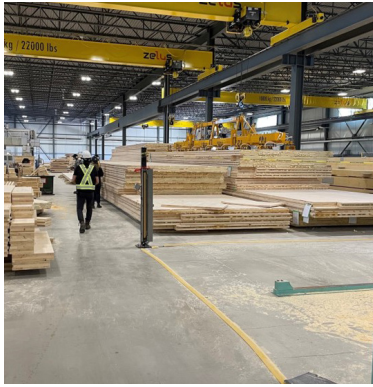


# A NEW PARADIGM FOR MULTI-UNIT RESIDENTIAL BUILDINGS:

Building better, faster, and more profitably with off-site  
manufactured mass timber solutions from Element5



**ELEMENT5**  
MODERN TIMBER BUILDINGS



# PARADIGM SHIFT:

## MOVING MULTI-UNIT RESIDENTIAL CONSTRUCTION OFF-SITE

### ELEMENT5 PROVIDES STATE OF THE ART TOOLS

The construction industry today faces many challenges including increased complexity, thinning margins, labour shortages, supply chain disruption and poor productivity. Add to this the fact that we are in the midst of a global environmental crisis that is exacerbated by the carbon-intensive way we build, and it is clear that the construction industry is in serious need of transformation.

Prefabricated mass timber construction, where buildings are manufactured and assembled instead of being strictly site-built, reduces a project's environmental impact and helps reduce risk, improve quality, and shorten construction timelines leading to a better overall return on investment. The team at Element5 are experts in the delivery of modern timber buildings and we are ready to help you transform the delivery of your next project.



# Introducing Element5's Sustainable Mass Timber Multi-Unit Residential Building Solution



\*Architectural design supplied by Edge Architects - Renderings by Tango Studio

# WHY MASS TIMBER?

## Faster to Market

In a prefabricated mass timber project, the building components can be manufactured the same time as site and foundation work. Depending on the size and complexity of the manufactured components, this has the potential to considerably reduce a construction schedule.

## Higher ROI

Time is money. Prefabricated, modular mass timber structures go up much faster than strictly site-built projects and a shorter timeline means decreased carrying costs, a quicker close-out and faster occupancy. This streamlined construction approach increases overall project ROI.

## Lower Risk

Mass timber building components are fabricated in a controlled indoor setting. This process reduces risk and significantly increases efficiency and quality. Increasing the amount of prefabrication in a project improves both scheduling and cost predictability.

## Simplified Construction

The building industry today faces a growing scarcity of skilled labor. Prefabricated mass timber construction makes more efficient use of material and labour resources, delivering buildings quickly and economically, while still offering exceptional performance and customization.

## Adaptable

Designed for manufacture and assembly, the optimized CLT structural grid presented in this solution is easily modifiable. No building is too big or small. It can be modified not only to offer alternative unit sizes, but also to meet the unique site, size, and height requirements of a project.

## High Performance

The superior quality control of the factory means a site assembled building performs better than a site built one. Our CLIPs envelope solution exceeds the energy efficiency standards of the 2015 National Energy Code for Buildings and can be customized to achieve any standard, even Passive.

## Sustainable

Wood is a natural, renewable, and sustainable construction material with a lighter carbon footprint than steel or concrete. Prefabricated mass timber offers enhanced sustainability by increasing performance and minimizing waste. We use sustainably sourced Ontario wood to manufacture our products.

## Healthy

Research shows that the materials we use in construction contribute significantly to health and happiness. Incorporating wood, other natural materials, and biophilic design principles into our buildings can have a significant, positive impact on occupant health and well being.



# SOLUTION COMPONENTS

CLT  
STAIRWELLS

CLT  
ROOF PANELS

CLT  
WALL PANELS

PREFABRICATED  
ENVELOPE  
PANELS  
(CLIPs)

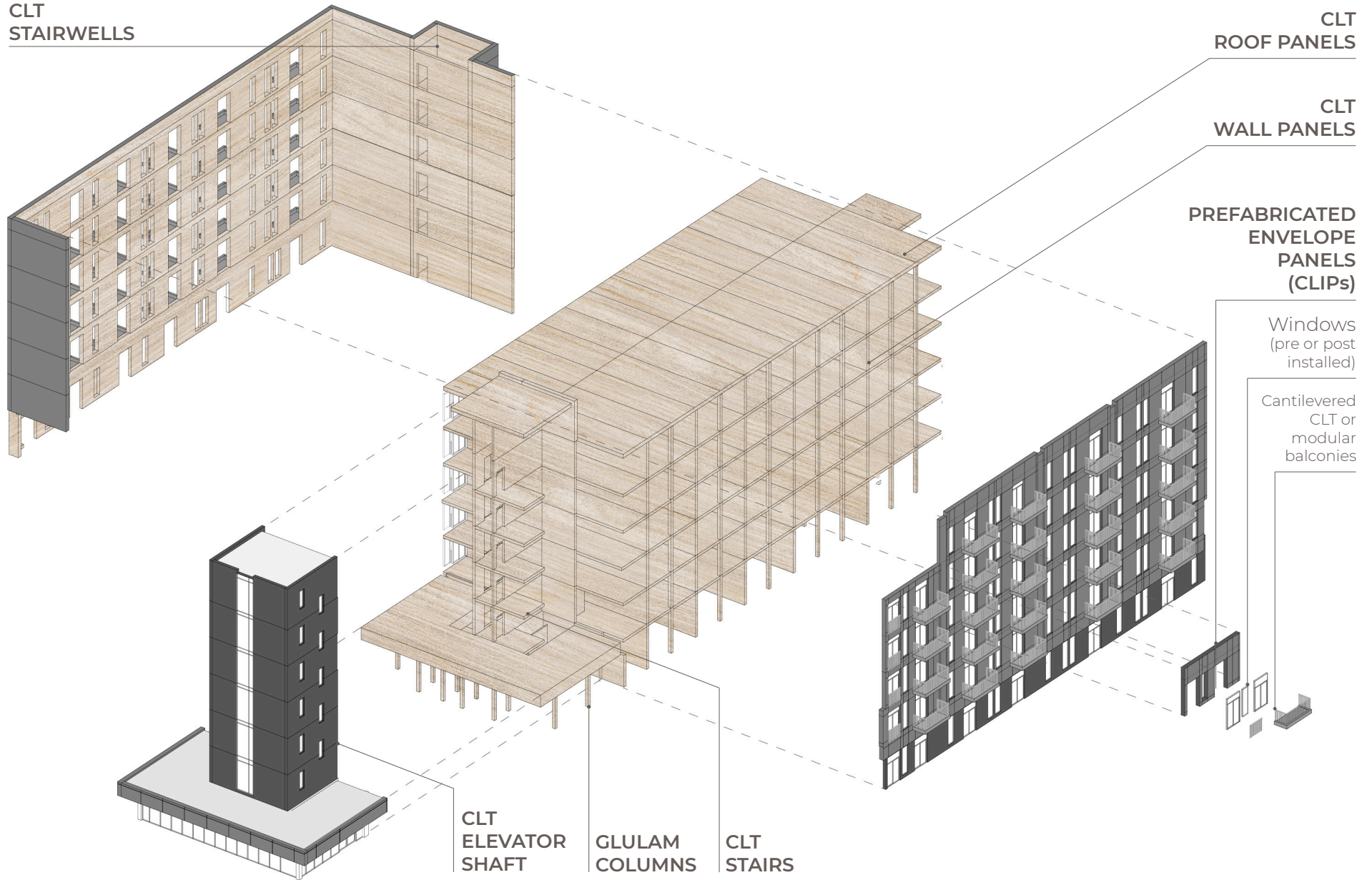
Windows  
(pre or post  
installed)

Cantilevered  
CLT or  
modular  
balconies

CLT  
ELEVATOR  
SHAFT

GLULAM  
COLUMNS

CLT  
STAIRS

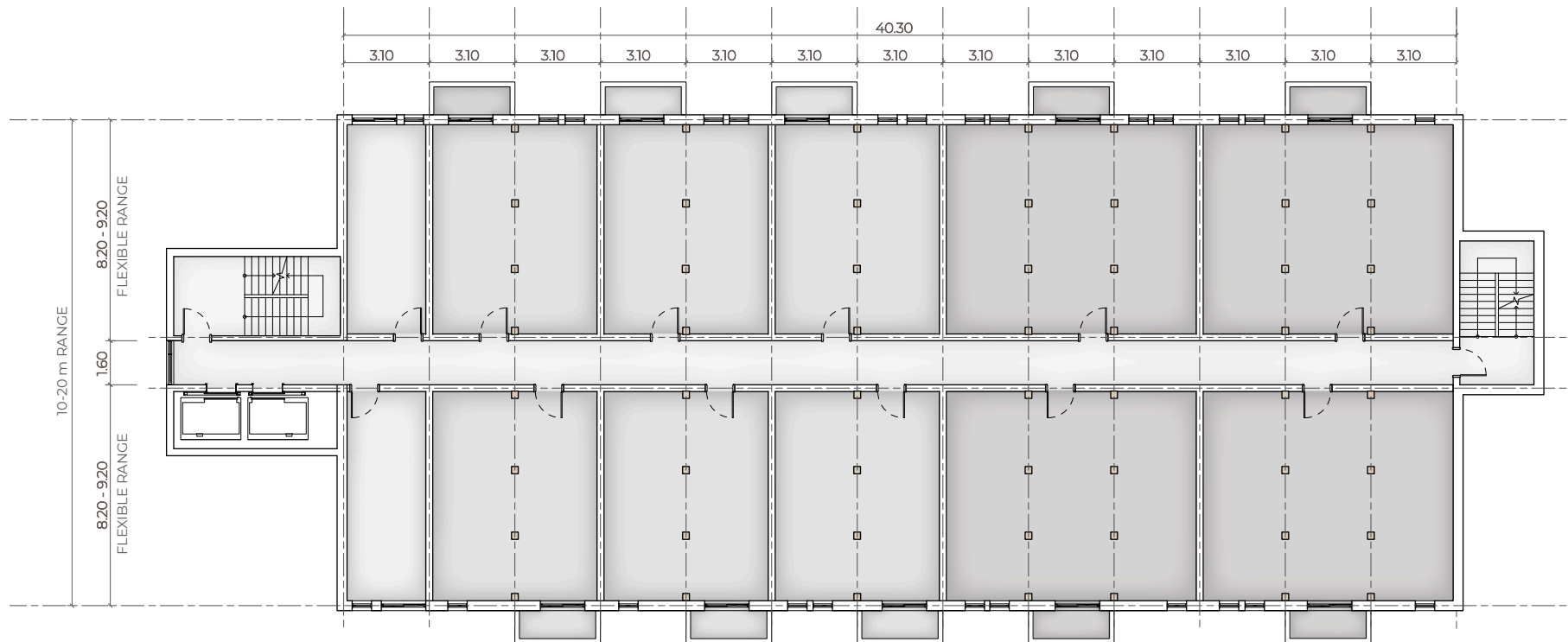


# SUPERIOR SPEED

This four storey, 41 unit, 27,000 s.f. multi-unit residential building was assembled in only 20 working days.



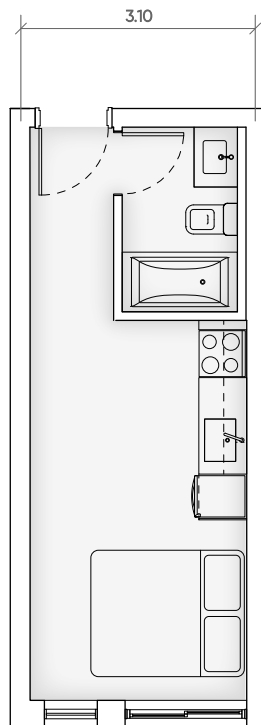
# TYPICAL FLOOR PLAN



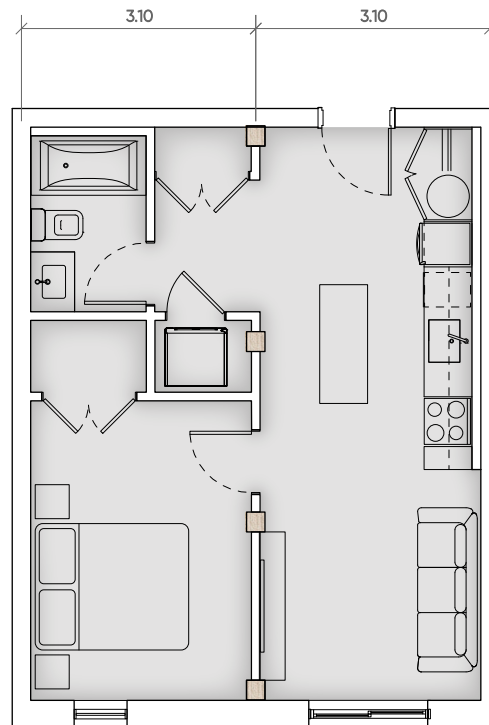
\*Architectural design supplied by Edge Architects



# ADAPTABLE UNIT STRUCTURE



Studio  
270-300 sqft



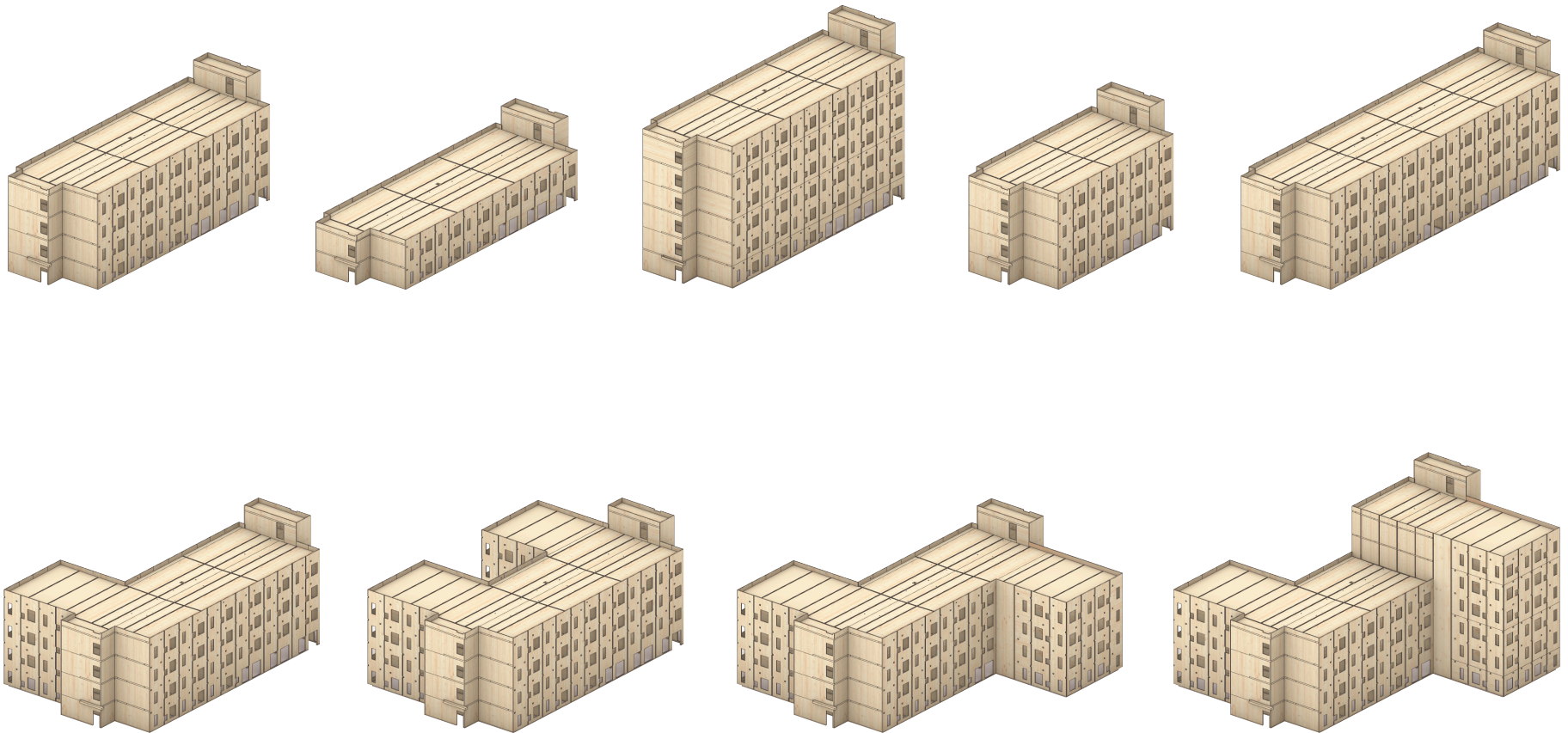
1-bed  
540-600 sqft



2-bed  
810-900 sqft

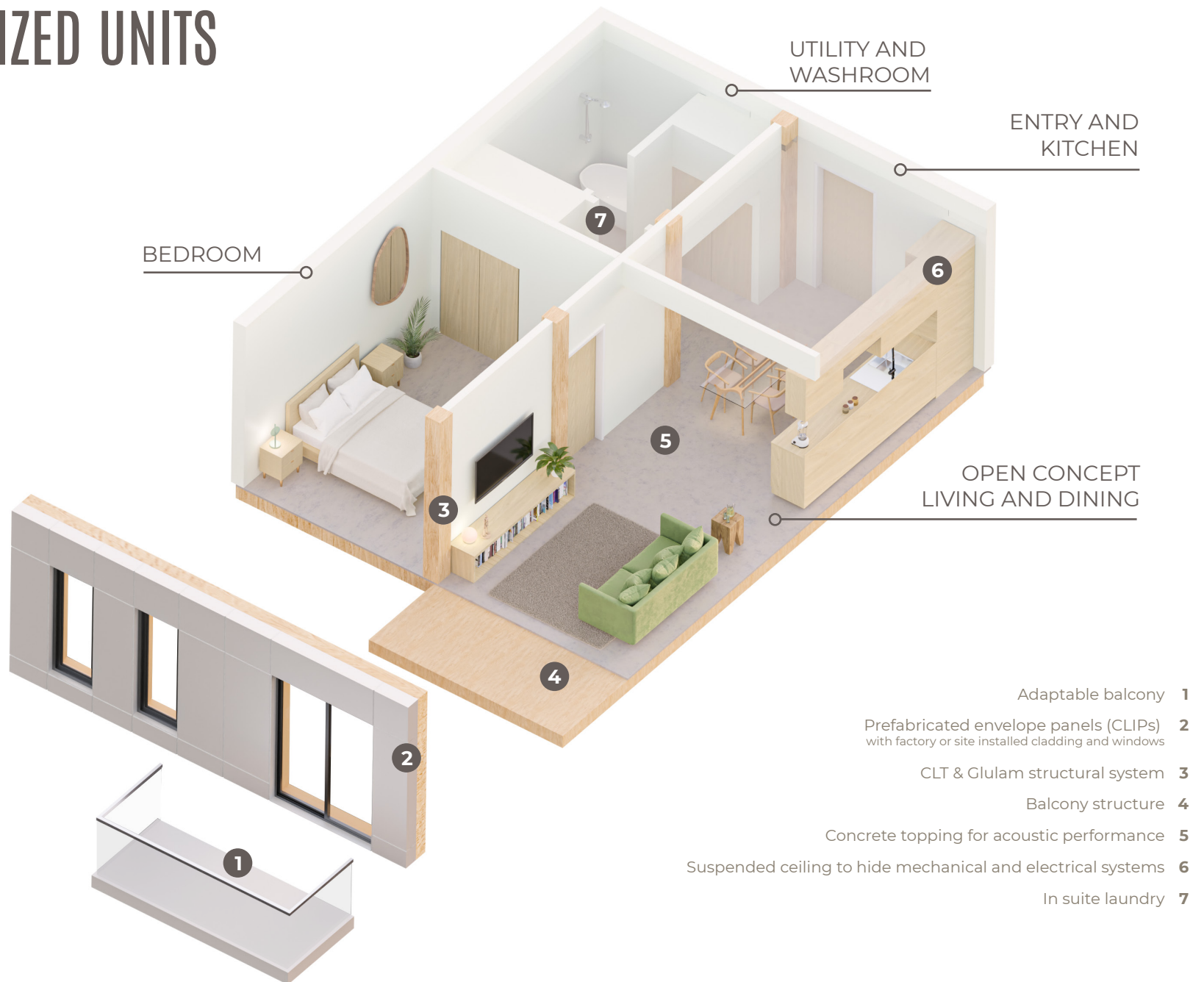
\*Architectural design supplied by Edge Architects

# ADAPTABLE BUILDING STRUCTURE



\*Massing examples meant to convey a wide range of possibilities, not limited to those which appear on this page

# OPTIMIZED UNITS







\*Architectural design supplied by Edge Architects - Renderings by Tango Studio



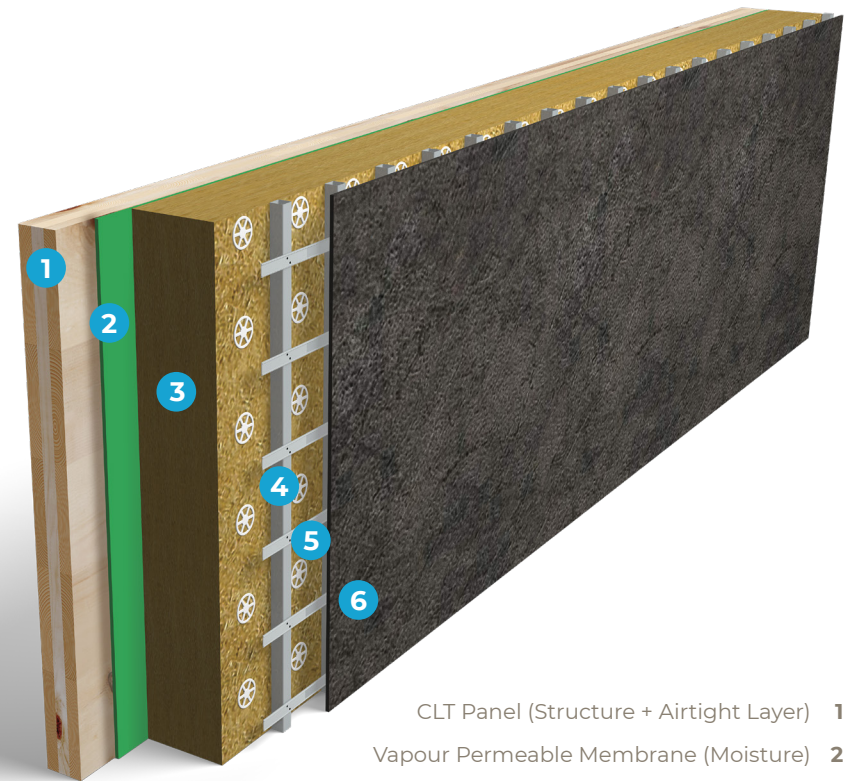


\*Architectural design supplied by Edge Architects - Renderings by Tango Studio

# CROSS LAMINATED INSULATED PANELS (CLIPs)

Cross-Laminated Insulated Panels (CLIPs) are a cost-effective, customizable, complete building envelope solution made from CLT. CLIPs are prefabricated off-site in a controlled factory environment and add value to projects by shortening overall construction timelines, facilitating rapid building enclosure, and increasing both the quality and energy performance of the building envelope.

Although they are prefabricated components, CLIPs provide a bespoke solution that can be designed to meet the needs of each project. The wall assembly can be structural or non-structural and customized to achieve any R-value or thermal criteria including Passive House. They can be built to varying degrees of completion in the factory where windows, doors and cladding can all be pre-installed, and are suitable for both all-wood and hybrid construction.



- CLT Panel (Structure + Airtight Layer) 1
- Vapour Permeable Membrane (Moisture) 2
- Insulation (Thermal Layer) 3
- Insulation Screws with Washers (Fasteners) 4
- Battens (Ventilation Layer) 5
- Horizontal Channel (Cladding Attachment) 6
- Cladding (Protective Layer + Aesthetics) 7





# CLADDING AND BALCONY OPTIONS

Fibre cement

Panel-framed balcony

\*Architectural design supplied by Edge Architects  
Renderings by Tango Studio



# CLADDING AND BALCONY OPTIONS

HPL (High Pressure Laminates)

Picket balcony

\*Architectural design supplied by Edge Architects  
Renderings by Tango Studio





# CLADDING AND BALCONY OPTIONS

ACM (Aluminium Composite Materials)

Hung balcony

\*Architectural design supplied by Edge Architects  
Renderings by Tango Studio





# CLADDING AND BALCONY OPTIONS

Solar facades  
Fibre cement

Framed balcony

\*Architectural design supplied by Edge Architects  
Renderings by Tango Studio

# PERFORMANCE

## FIRE

Fire Resistive Rating

Reference IBC 703.2

ASTM E119 1-hr and 2-hr floor and roof assembly

Through Penetration Fire stop

Reference IBC 714.4.1.2

ASTM E814 (Hilti)

Flame Spread Index and Smoke Development Index

Reference IBC 803.1.1

ASTM E84

## SOUND

Acoustic floor assembly

ASTM E336

ASTM E1007

## VIBRATION

Seismic panel strength

ASTN D5456 for in-plane shear strength



# ENVIRONMENTAL STANDARDS

## LEED

Materials And Resources

Credit 5 Regional Materials 1-2

Credit 6 Rapidly Renewable Materials 1

Credit 7 Certified Wood 1

Indoor Environmental Quality

Credit 4.4 Low-Emitting Materials:

Composite Wood and Agrifibre Products

## NBCC ENVIROMENTAL SEPARATION

5.3.1.1. Required Resistance to Heat Transfer

Using CLT in an exterior wall assembly provides a continuous thermal break between interior and exterior providing up too 1.25 R/inch.

5.4.1.1. Required Resistance to Air Leakage

When designed as such, Wood can act as an air barrier. Consult a professional to ensure continuity if the air barrier system is achieved.

5.5.1.1. Required Resistance to Vapour Diffusion

A Vapour permeable membrane is part of the Element5 clip system.

## PASSIVE HOUSE CANADA

Passive House windows

Adequate ventilation strategy

Thermal insulation

Airtightness

Thermal bridge reduced design



**NRC · CNRC**

**PASSIVEHOUSE**  
**CANADA** Build better.  
Feel better.



# PRODUCT CERTIFICATIONS

## Certified CLT

CLT from Element5 is manufactured and tested for its intended use in Canada and the U.S. in compliance with ANSI/APA PRG 320-2019 North American Standard for Performance-Rated Cross-Laminated Timber.

Our production facility in St. Thomas, Ontario, is 3rd party certified to meet the certification requirements of APA to manufacture cross laminated timber.

## Certified GLULAM

Glulam products for use in Canada are manufactured and tested for its intended use in compliance with the CSA O122 standard for structural glued-laminated timber.

Our production facility in St. Thomas, Ontario, is 3rd party certified to meet the certification requirements of APA to manufacture structural glued laminated timber.

## FSC Certified

Element5 is Forest Stewardship Council® (FSC®) Chain-of-Custody certified by SCS Global Services for manufacturing in St. Thomas, Ontario.

As an FSC Certificate Holder, we can produce mass timber products certified as FSC Mix (Trademark License Code: FSC-C166066).



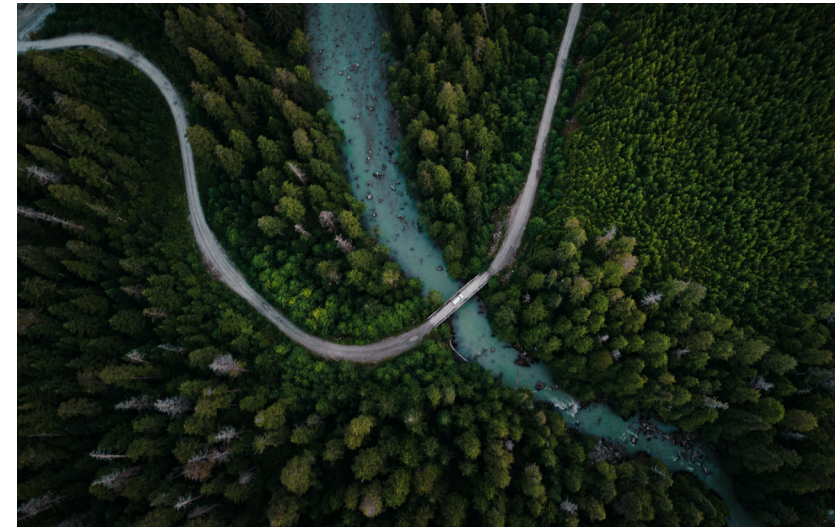
# HEALTHY PEOPLE

There's no question anymore that building with wood products from sustainably managed forests is the best choice for the environment. Not surprisingly, new research is showing it is the best choice for people, too.

When considering the impact of the built environment on human health, there are many reasons to build with wood instead of alternative materials. Beyond its pleasing aesthetics, wood is hypoallergenic, has antimicrobial properties, has excellent sound absorption and does not emit VOCs. Collectively, these benefits help mitigate the negative physiological effects a building can have on occupants, creating instead natural, healthier indoor environments where people can thrive.

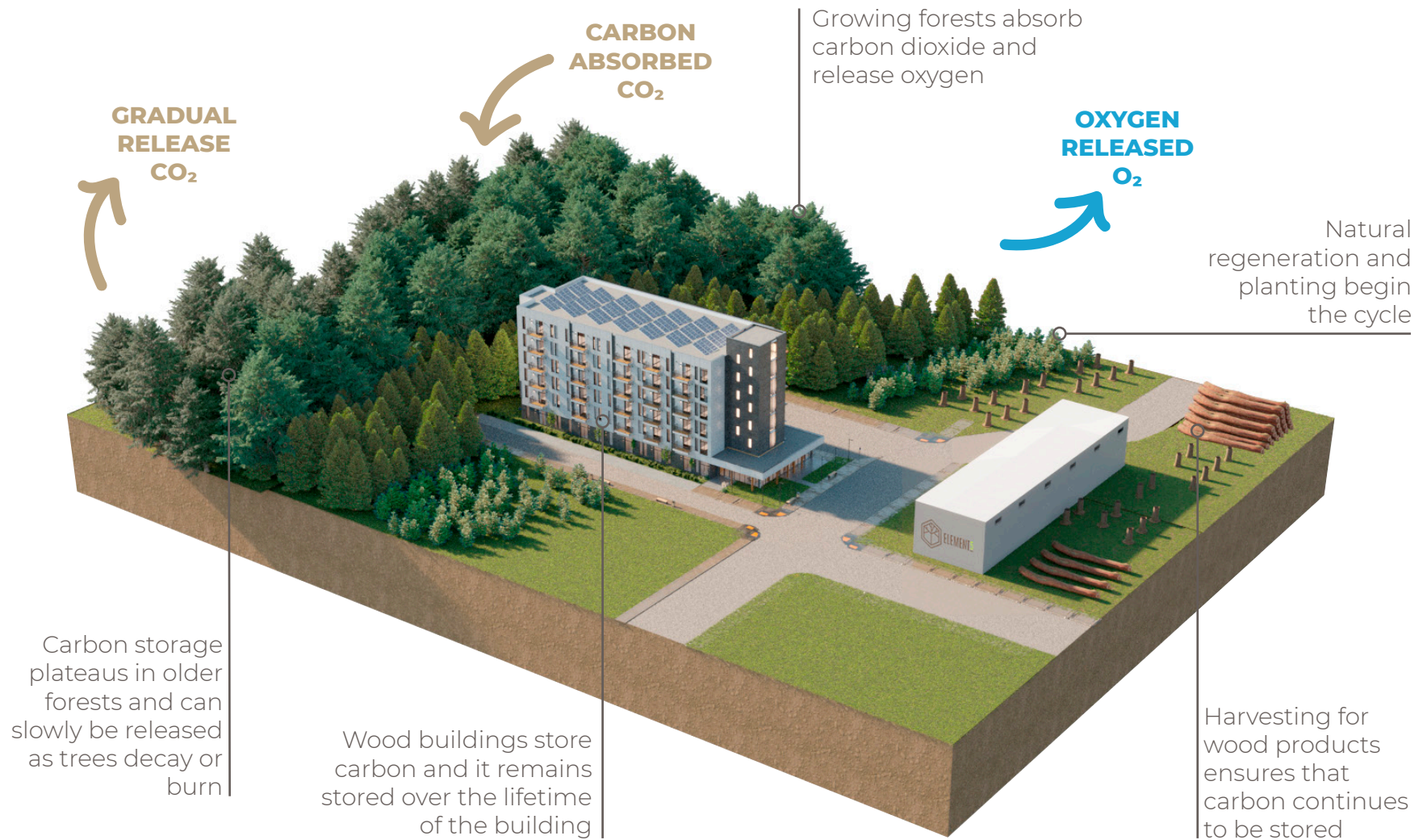
Recent studies suggest the use of wood indoors lowers stress reactivity of the sympathetic nervous system—which is associated with lower blood pressure, lower heart-rate, reduced psychological stress, improved resistance to illness, and a better ability to focus attention.

The term 'biophilia' that is commonly used today means 'the love of living things' in ancient Greek. Biophilic design is an antidote to humanity's growing disconnection from nature, and the negative human health impacts resulting from increasing urbanization. By incorporating wood, other natural materials, and biophilic design principles into our buildings, we have the power to make a significant, positive impact on occupant health and well being.



# HEALTHY PLANET

## BENEFITS OF BUILDING WITH WOOD





# SERVICES OFFERED

Comprehensive professional services are part of the total solution.

Mass timber construction is bringing much-needed change to the way we build. Enhanced collaboration and offsite technologies are increasing the speed and quality of construction, delivering better value for owners and occupants alike.

If you are new to mass timber, we can help you assemble the skilled team needed to successfully realize a project under this delivery model.

## Disciplines covered include:

- Cost Consulting
- Design Consulting
- Planning
- Timber Engineering
- General Contracting
- MEP Consulting
- Fire, Envelope and Acoustic Consulting
- 3D/BIM Modeling
- Shop Drawings
- Manufacturing
- Delivery
- Assembly

# ABOUT ELEMENT5

Element5 is a rapidly growing fabricator and off-site manufacturing company committed to using sustainably sourced lumber to produce high-performance mass timber products and systems that improve the built environment.

We are specialists in the design for manufacture and assembly (DfMA), production, and installation of mass timber structures. The vertical integration of our company minimizes risk, reduces interferences, and maximizes value for project owners.

We support the advancement of mass timber construction by offering a fully integrated suite of professional services and products as a simplified solution for the design, supply, and construction of mass timber buildings.



## **Fabrication Excellence**

We are Canada's newest and most technologically advanced mass timber manufacturer. We produce visually superior edge-glued CLT that is perfect for exposed architectural applications.

## **Investment in Innovation**

Our St. Thomas operation is the most automated CLT production facility in North America. We also develop innovative, value-added components like Cross-Laminated Insulated Panels (CLIPs) and hollow core CLT floor cassettes (BOXX panels).

## **Integrated Professional Services**

We offer a complementary suite of professional services and products as a single-point solution for the design, supply, and construction of mass timber structures. We help make mass timber easy.

## **Commitment to Sustainability**

We take pride in using FSC - certified Ontario lumber inputs to manufacture our mass timber products for use in sustainable, high-performance wood buildings.

# OUR PROCESS

Element5 is a mass timber fabricator and offsite manufacturing company that specializes in using sustainably sourced local lumber inputs to manufacture high performance mass timber components and buildings. We offer a fully integrated suite of professional services and products as a single point solution for the design, supply, and construction of mass timber buildings.

Interested in learning more? Scan the QR code to access a virtual tour of our factory to see our CLT manufacturing process up close.





# THANK YOU FOR YOUR INTEREST IN ELEMENT5

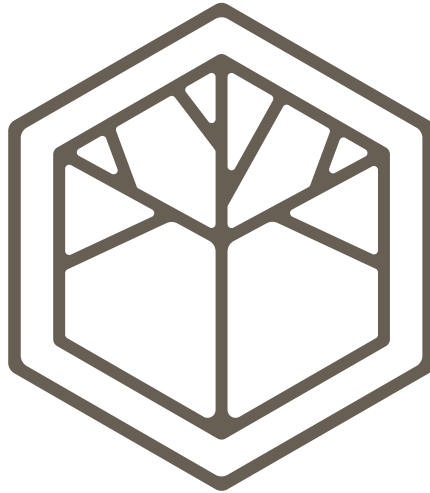
We welcome the opportunity to answer any questions you may have about our products, services, or the design and development of sustainable mass timber housing that can be delivered quickly to meet the needs of housing providers and the people they serve.



**CONTACT US TODAY**

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[patrick@elementfive.com](mailto:patrick@elementfive.com)

**[www.elementfive.co](http://www.elementfive.co)**



**ELEMENT5**  
MODERN TIMBER BUILDINGS