

## 2150 KEITH DRIVE

2150 Keith Drive is a 10-storey office building planned for East Vancouver's False Creek Flats. Nine storeys of mass timber over a concrete base, the building will include office space, flexible meeting areas, wellness and social spaces, and a rooftop deck. Fitted with natural materials and designed to encourage employee wellbeing and productivity through open, day-lit spaces, the project will be targeting LEED® Gold and the AIA 2030 Challenge toward carbon neutral buildings.





## PROJECT OVERVIEW

The proposed 10-storey development will rise to a total height of nearly 45 metres (147 feet) above it's False Creek Flats location. With nine levels of mass timber construction built above a concrete base, the building will be well situated near the VCC Clark Skytrain Station.

Boasting a honeycomb structure of diagonally oriented braces in a cellular pattern, the use of mass timber in 2150 Keith Drive is complemented by a palette of earthtone materials, including composite metal panels, wood soffits, and ample glazing. With balconies located between brace bays on the south, west and east elevations, the building features unique alternating outdoor space on each floor.

At the top of the building, the facade extends beyond the top office floor to create a windscreen and guard for an open-air roof deck with plants, urban agriculture, and views to the North Shore mountains and the Downtown Vancouver skyline.

The Urban Design Panel commended the generous use of mass timber—a sustainable, locally-sourced green building material. The design application passed unanimously without any recommended changes, a testament to the building's design, which was applauded as an example for others to aspire to.

*Since the inception of the design the team has stayed true to the idea of structure as finish. By exposing the timber structure on the columns, ceilings and sheer walls, they reduce the need for interior finishes, further lessening the building's environmental impact.*

### LOCATION

Vancouver, BC

### SIZE

15,096 m<sup>2</sup>

### COMPLETION

2021

### ARCHITECT

DIALOG

### STRUCTURAL ENGINEER

Fast+Epp

### GENERAL CONTRACTOR

TBC

### DEVELOPMENT MANAGER

BentallGreenOak



Rendering courtesy of DIALOG

*Artist rendering aerial perspective | Buttressed by an influx of high-density housing, tech companies, nearby transit and a creative campus, the proposed development, located at the corner of Clark Drive and East 6th Avenue, contributes to the City of Vancouver's vision for turning False Creek Flat's into a richly-diverse mixed-use sustainable neighborhood where industry, educators, and residents dwell side-by-side.*



## STRUCTURE+DESIGN

Mass timber was selected as the structural system for the building because of its sustainability, aesthetic, and functional qualities. The future building occupants will benefit from having an office environment based on principles of biophilia and natural materials.

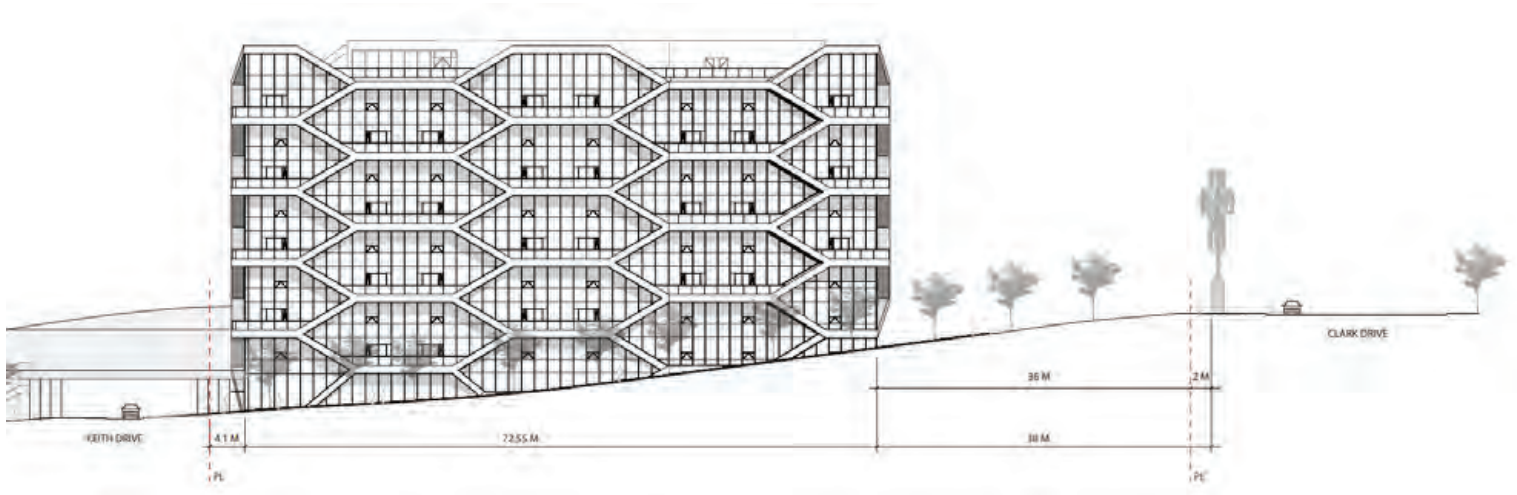
The building's design uses a perimeter braced structural system that creates a striking expression of the building from the exterior and eliminates the need for conventional cast-in-place concrete cores. An innovative mass timber structure is proposed for all floors above Level 2; a series of timber shear walls in the interior and a series of structural braces at the exterior resist the wind and seismic load.

The distinctive structural seismic and lateral design of diagonal glue-laminated timber (glulam) buckling-restrained

braces creates a cellular expression on the façade that wraps around the building and is continuous to all elevations.

This design is a direct reflection of the structural system, achieved through a self-supporting thermally broken series of balconies. The exterior cellular structure works at multiple scales. At the neighborhood scale, it creates a strong identity with an exoskeleton that references nature. At the street scale, the 2-storey cells reduce the mass of the building and create a finer grain texture. At the human scale, the cells create a place that can be occupied and provides prospect, refuge, and protection from the elements.

This unique design forms a network of balconies on the south, west, and east façades, providing shade and spaces for building occupants to enjoy the outdoors next to balcony-integrated gardens.



Drawing courtesy of DIALOG

**Streetscape Elevation** | Above the landscape-oriented ground floor, the building is constructed with mass timber, a contemporary update of the typology of heavy timber buildings that were historically built for commerce and industry in East Vancouver.

## PRODUCTS+SYSTEMS

Assembled as a prefabricated kit of parts, this project will use a variety of engineered wood products to achieve its design goals. The wood components and systems include glulam beams, columns, and braces, cross-laminated (CLT) floor panels, shear walls and balconies. This strategic mix of mass timber components adds unique warmth and character to the building, while leveraging the distinctive strengths and characteristics of each product type. When considered as a whole, the mass timber building system offers durability, flexibility, thermal advantages and seismic benefits.

### Cross-laminated Timber

CLT is an engineered wood product consisting of layers of dimension lumber (usually three, five, or seven) oriented at right angles to one another and then glued to form structural panels.



### Glue-laminated Timber

Glulam is composed of dimension lumber pieces bonded together with durable, moisture-resistant adhesives. The grain of all laminations runs parallel with the length of the member.



## A SUSTAINABLE CHOICE

Canada is recognized as a global leader in sustainable forest management and has more land independently certified to international forest certification programs than any other jurisdiction in the world. Certification gives added assurance that Canadian forest products are from legal, sustainable sources and are managed to consider environmental, social and economic values. The range of engineered and mass timber products from Canada offer incredible design versatility and high-performance options for any building project, residential or commercial.

## ABOUT TALLER WOOD

Modern mass timber products and systems such as glulam, CLT and structural composite lumber, allow the construction of taller and larger wood buildings. Over 44 tall wood buildings are underway or have been built around the world in the past six years.<sup>1</sup>

Wood is increasingly being recognized by the construction sector as an important, innovative and safe construction choice. The environmental benefit of tall wood buildings, through lower embodied energy and carbon stored in the wood, plays an important role in sustainable

B.C. is a leader in wood building systems and technologies, with projects showcased across the province. Many, such as Brock Commons Tallwood House, are garnering international attention, creating new market opportunities for B.C. wood products and building technologies.

Tall wood structures, built with renewable wood products from responsibly managed forests, such as those in Canada, can help transform a construction industry that is increasingly focused on accelerating the adoption of more sustainable practices in the built environment.

development and climate change mitigation. Advancements in wood product research and development, coupled with the ongoing modernization of building and fire codes, contribute towards breaking down barriers and dispelling misconceptions that exist regarding the capacity and performance of wood products in construction. Adopting and promoting these approaches in Canada and encouraging the consideration of wood in buildings helps to strengthen the Canadian forest and building sectors both locally and internationally.

<sup>1</sup> <https://www.thinkwood.com/building-better/taller-buildings>



Rendering courtesy of DIALOG

**Artist rendering |** *The balconies are connected by a diagonal strut visually aligned with the timber braced frames, creating a self-supported balcony structure that does not rely on cantilevers from the primary building structure. This allows the balcony elements to be pinned back to the primary structure, therefore reducing thermal breaks through the building envelope.*

## FOR MORE INFORMATION

This profile is published by Forestry Innovation Investment, the Government of British Columbia's market development agency for forest products.

For more information on building with wood in Canada and the National Building Code visit [cwc.ca](http://cwc.ca).

For more information on mass timber and tall wood buildings in North America and around the world, visit [thinkwood.com/building-better/taller-buildings](http://thinkwood.com/building-better/taller-buildings)

For more examples of innovative wood building projects throughout British Columbia, visit:

[naturallywood.com](http://naturallywood.com)

## INNOVATION PARTNERS

