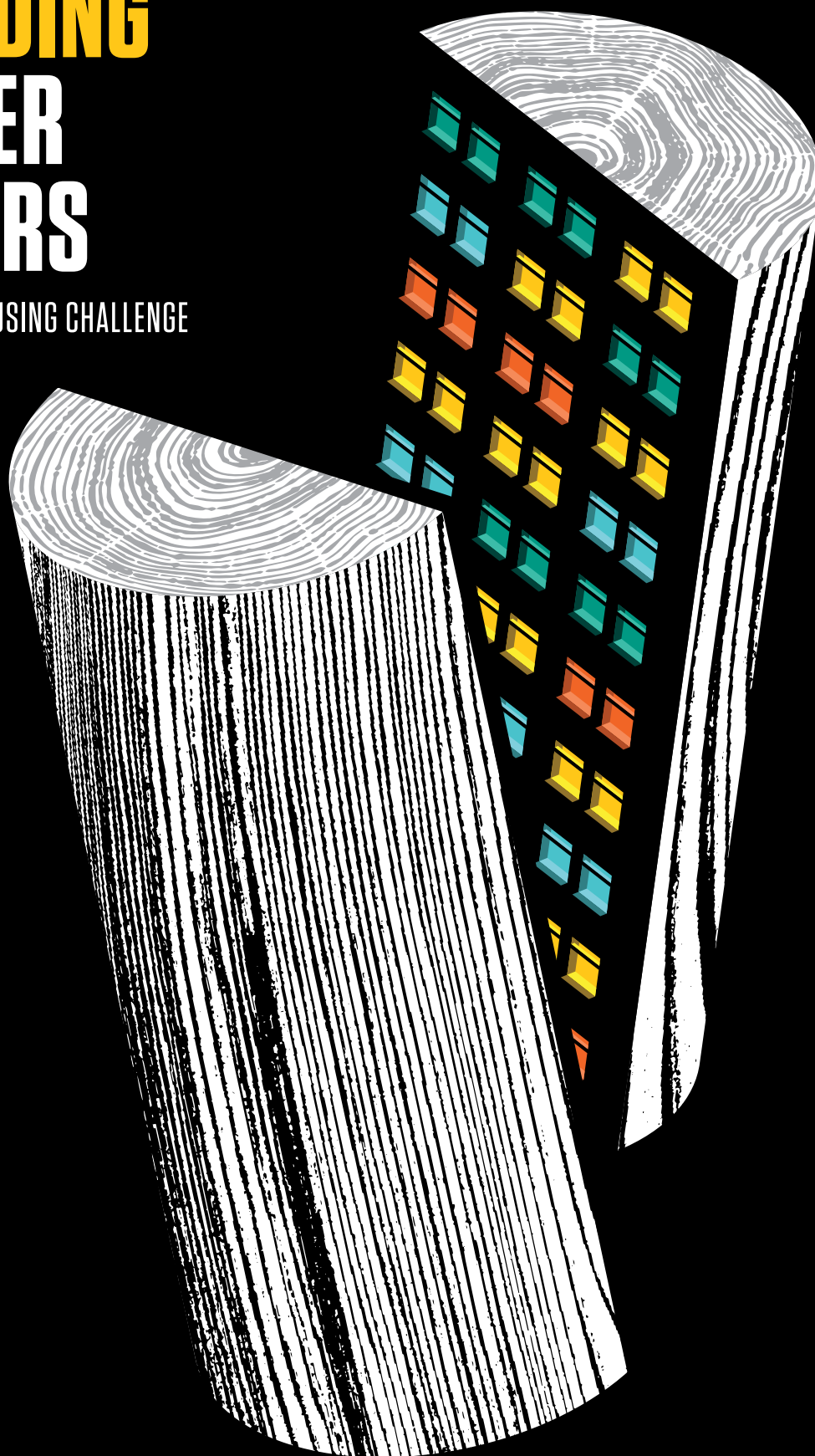


DECODING TIMBER TOWERS

AFFORDABLE HOUSING CHALLENGE



**URBANARIUM
COMPETITIONS**



COMPETITION BRIEF
DECODINGTIMBERTOWERS.COM



URBANARIUM
FOR SMART CITIES

DECODING TIMBER TOWERS: Affordable Housing Challenge

PRESENTED BY Urbanarium

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1. OVERVIEW

Decoding Timber Towers is the fourth ideas competition presented by Urbanarium to foster dialogue and encourage design investigations that promote housing affordability and address the effects of climate change. Entrants are asked to consider design solutions for mass timber residential and mixed-use buildings that, as with the earlier Missing Middle, Mixing Middle, and Decoding Density competitions, also explore how housing innovations and higher densities are constrained by building code, zoning, and other regulations.

The **Decoding Timber Towers** ideas competition highlights the challenges facing designers, builders, and developers in implementing designs that emphasize modularization, prefabrication, and standardization in the delivery of low-carbon buildings. Increasingly, the ability to rapidly address affordability and climate change depends on the industry's capacity to deliver high quality, low carbon buildings at an unprecedented scale.

While the technology to build large wood buildings has developed considerably, these projects tend to take longer and cost more to deliver than their industry-standard concrete counterparts. The competition asks: how can we streamline the system of delivery of large-scale low carbon buildings to unlock their potential to address climate change and housing unaffordability?

2. LAND ACKNOWLEDGEMENT

Urbanarium acknowledges that Metro Vancouver is the unceded, traditional, and ancestral territory of many First Nations including the Katzie, Kwantlen, Kwikwetlem, Matsqui, Musqueam, Qayqayt, Semiahmoo, Squamish, Tsawwassen, and Tsleil- Waututh. As an organization that focuses on city-making on unceded territory, Urbanarium knows that how we relate to the land and the people who are its original stewards especially matters. Our programming and other outputs work to reflect and honour Indigenous perspectives, of both the host nations and urban Indigenous peoples who live away from their traditional territory, and elevate respectful approaches to land use and rights, planning, policy, practices, and governance.

3. OBJECTIVES OF THE COMPETITION

The Vancouver Urbanarium Society announces its fourth open international design ideas competition **Decoding Timber Towers** to explore the potential of mass timber construction in residential buildings to address climate change, housing unaffordability, and other challenges.

The competition focuses on the challenges facing designers, builders, and developers in replacing concrete residential high rise buildings with an industry-wide approach to deliver low-carbon buildings more competitively, while maintaining a high standard of comfort, livability, and connection to land.

Taking the typical concrete residential high-rise building as a base case, competitors will be encouraged to develop prototype proposals that lower costs of project delivery while simultaneously reducing embodied carbon.

One of the goals of this competition is to communicate the potential benefits of mass timber construction and its use in many different contexts. By highlighting innovative approaches to widespread applicability and repeatability, Urbanarium hopes to increase investment in the development of mass timber potential by associated industries, designers, builders, developers, governments, and approving authorities. Another key objective of the competition is to raise public awareness of the potential upsides of mass timber construction, while alleviating concerns surrounding fire safety, water intrusion, and potential impacts on building amenities, including balconies.

As a second agenda, competitors will be asked to identify current regulatory, code, and industry roadblocks that stand in the way of suggested innovations. Consideration of life cycle costs and operations of the building in terms of low dependence on energy sources and simplicity of systems is part of this challenge. Entrants are encouraged to imagine less expensive buildings that will not be complicated and time consuming to build or costly to maintain over time.

Competitors are encouraged to present design ideas for a building system made up of mass-produced timber components using regional wood resources that can be used to build residential towers of varying height and density in the 8 to 20 storey range. Such building systems should recognize that standardization would permit several manufacturers to produce

the same components, and that manufacturers of those optimized components would need sufficient demand for these pre-manufactured building components in order to make them affordable. While recognizing that it will take time for the wood manufacturing industry to mature and for the chicken-and-egg dilemma of demand versus price to be resolved, addressing systemization is a key step. To stimulate the industry, the competition encourages designs that utilize the principles of system building to develop a limited number of mass-produced prefabricated components that could be adapted to various site conditions.

The Province of British Columbia (BC) and various levels of government have recently shown renewed interest in standardized designs as a way to streamline review and approvals. However, these designs often fall short of adequately allowing for varying site conditions. On the other hand, standardized building components have the potential to be easily understood by designers and builders, and adaptable to a range of conditions. “Stick framing” with dimensional lumber remains the dominant example of this flexibility, but results in imprecise builds and large amounts of waste. If designers can envision a system of wood building that harnesses both the efficiency of off-site production, with the widely understood design parameters of standard components, it could be possible to unlock a generational shift in the building industry: low cost, low-carbon buildings that are easy to design, easy to review and approve, and easy to construct.

In British Columbia, the Transit-Oriented Development Areas legislation (Bill 47, 2023) has tasked municipalities with rapid transit and bus exchanges to enable towers and mid-rise residential development in many areas where they were previously not allowed. Finding ways to promote mass timber construction with BC-sourced wood now has a potential to impact development opportunities in smaller municipalities as well as in urban centres.

Entrants to Decoding Timber Towers are challenged to propose creative optimized mass timber structures for one of four hypothetical sites, inspired by three tiers of the Transit-Oriented Area legislation and developed in partnership with First Nations housing developers. The conditions described by each site may influence the form and scale of the proposed building(s). These may range from urban mixed-use towers to residential infill towers, to more mid-rise podium typologies, or other building types. The proposed process of fabrication and delivery will likewise influence the designs and demonstrate a path to housing affordability and a low-carbon future.

In order to assess the potential of the various submissions, entrants will be asked to provide a design rationale that speaks not only to the form and building systems of the proposed project, but also its tangible contribution toward affordability and carbon reduction. Subsequently, entrants are asked to provide:

1. A proforma utilizing either the format provided in the competition package that will be sent following registration, or entrants are welcome to develop their own proforma format. The goal is to compare proposed solutions to an industry benchmark of costs and associated affordability in current tower buildings.

2. An embodied carbon calculation. The goal is to compare proposed solutions to an industry benchmark of embodied carbon in a typical concrete building. Calculators will be provided in the competitor resources and entrants are asked to indicate which calculator was used and demonstrate their rationale.

4. PRODUCERS

Urbanarium
598 West Georgia Street
Vancouver, BC V6B 2A3
Attention: Samantha Francey, competition@urbanarium.org
(236) 361-4202

Co-Chairs of the Competition Committee:

Kari Dow and Travis Hanks

Competition Committee Members:

Catherine Alkenbrack, Jacob Henriquez, Marta Farevaag, Richard Henriquez, Sara Stevens, Zoe Acton

Staff:

Amy Nugent and Samantha Francey

5. JURY

The Jury will name the prize winners.

The Jury shall have unlimited authority and discretion as the final arbiter of the competition. Its decisions shall be final. The jury shall appoint a chairperson whose role will be managing the work of the Jury.

The following individuals will make up the Prize Jury:

1. Andrew Lawrence, Structural Engineer | Arup Fellow, Director, Arup
2. Brenda Knights, Housing Developer | CEO, BC Indigenous Housing Society
3. Emilie Adin, Planner | President, Planning Institute of British Columbia
4. Gary Hack, Planner | Professor Emeritus, UPenn, MIT
5. Ian Boyle, Structural Engineer | Principal, Fast + Epp
6. Mingyuk Chen, Architect, AIBC | Associate Director, LWPAC
7. Natalie Telewiak, Architect AIBC, AIA | Principal, MGA | Michael Green Architecture
8. Norm Leech, Community Leader | Executive Director, Frog Hollow Neighbourhood House
9. Richard Henriquez, Retired Architect, AIBC | Founding Principal, Henriquez Partners Architecture
10. Sailen Black, Architect, AIBC | Senior Green Building Planner, Planning, Urban Design

and Sustainability, City of Vancouver

6. TECHNICAL ADVISORS

The following technical advisors will be available to the jury for technical questions arising during the evaluation process. Individuals to be determined in the following categories:

1. Cost Consultants: Neil Murray, Director, BTY and Ping Pang, Director, BTY
2. Code Consultant: To be confirmed
3. Carbon Consultant: To be confirmed
4. Constructability Consultant: Mark Gaglione, Director Building and Material Sciences, EllisDon Construction

7. ELIGIBILITY

This is a competition open to anyone from anywhere.

- A. Entrants need not be registered professionals or local.
- B. Entrants may be teams or individuals.
- C. Multi-disciplinary teams and teams that include students and youth members are encouraged.

Entrants that have business relationships with members of the jury or advisors of the competition should not discuss their entries with those members. Jury members will not know the identity of the entries until the winners have been decided. The jury sees only anonymous entries. Those affiliated with a firm that is sponsoring the competition are eligible to enter. Immediate family members and employees of design firms of jury members are not eligible to enter.

8. REGISTRATION

Each entry shall be registered in advance by filling out the online registration form on decodingtimbertowers.com. There is a registration fee of \$140 Canadian, payable to the Vancouver Urbanarium Society. There is a student rate for registration of \$55 for teams entirely composed of students. Registration is free for Indigenous people.

Payment is made on the online form. If you wish to pay by cheque, please contact competition@urbanarium.org. Early bird registration will be open with a discounted fee of \$95 Canadian per team until Friday April 11, 2025, with the extra advantage of first choice of site.

A set of anonymized sites are provided. Entrants will be asked to state their first, second, and third preferences among the choices for their entry. Each entrant will be assigned a site based on their stated preference and to assure distribution across all sites. Digital site plans of the four sites and their immediate context will be provided.

Entrants will also be provided with additional resources including a financial base case, carbon calculators, mass timber guides, building code and First Nations resources following

registration.

9. AWARDS AND PAYMENTS TO COMPETITORS

Overall Prize Winners

First Prize	\$15,000 CAD
Second Prize	\$10,000 CAD
Third Prize	\$5,000 CAD
5 Honourable Mentions	\$2,000 CAD each

Digital Award

Innovation in Systemization and Standardization Award	\$10,000 CAD
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10. COMPETITION SCHEDULE

Early Bird Registration Opens	Monday, March 31, 2025
Site Allocations Begin*	Monday, April 7, 2025
Early Bird Registration Deadline	Friday, April 11, 2025
Deadline for Questions Round 1**	Thursday, April 3, 2025
Answers Posted Round 1	Tuesday, April 8, 2025
Deadline for Questions Round 2	Thursday, April 24, 2025
Answers Posted Round 2	Tuesday, April 29, 2025
Registration Deadline	Friday, May 2, 2025
Deadline for Questions Round 3	Thursday, May 8, 2025
Answers Posted Round 3	Tuesday, May 13, 2025
Submission Deadline	Monday, August 25, 2025
Jury Deliberation	Saturday, September 6, 2025
Awards Presentation	Tuesday, September 16, 2025
Woodrise Congress Winners Showcase	September 22-26, 2025
Party! Publication & Solutions Video	Monday, November 24, 2025

*The first wave of site packages will be distributed on Monday, April 7, with subsequent packages being distributed on an ongoing basis.

**Question Rounds: Competitors have the opportunity to submit questions in three rounds. Answers to competitor questions will be posted online for all entrants.

11. NEIGHBOURHOOD SITES

This will be a regional competition, with each entrant working on one site. Sites vary in size and context. Entrants will be asked to focus their idea on a specific project site and area and to discuss the hypothetical implications of the idea for broader application.

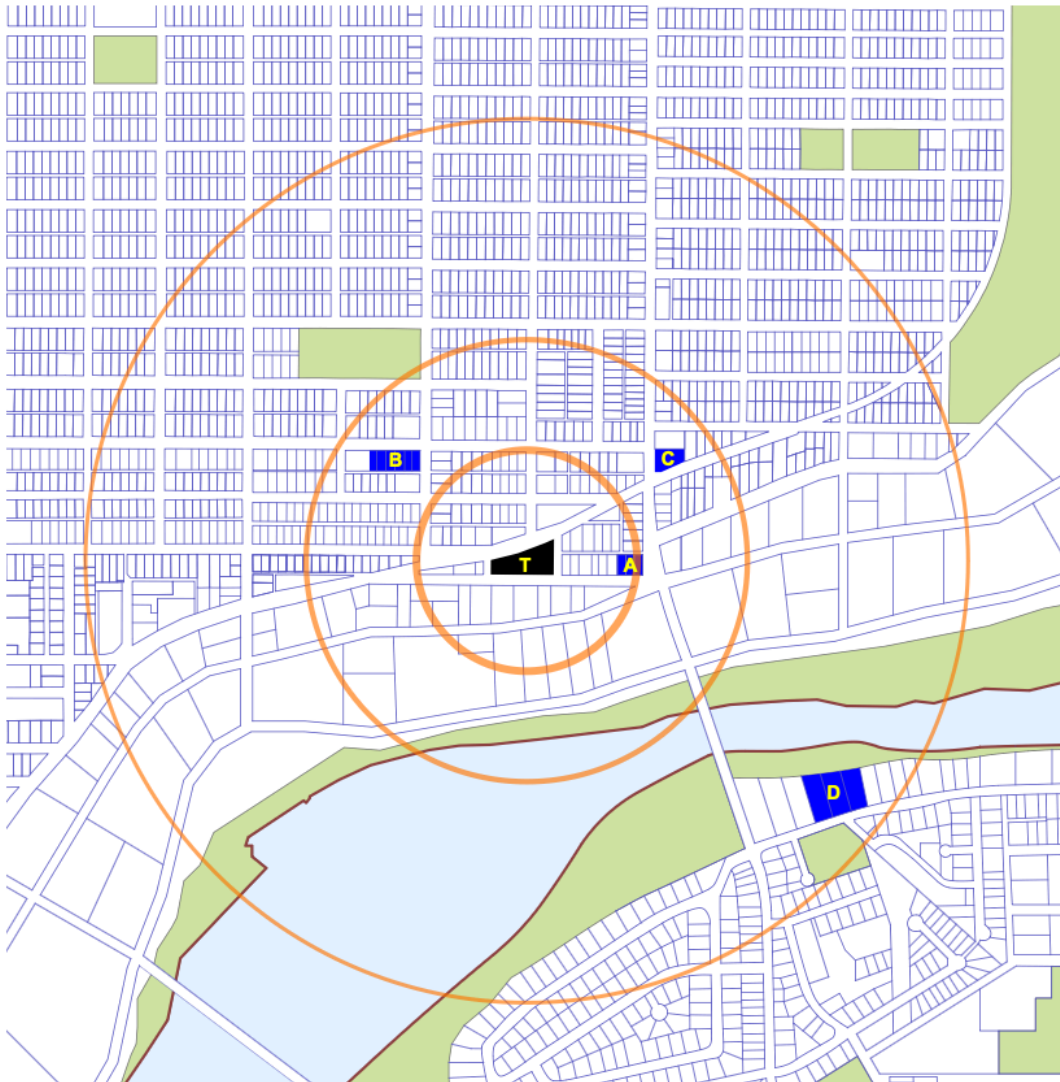
The competition sites are located in a fictionalized Transit Oriented Area (TOA) based on BC provincial legislation and typical TOA conditions found in BC. Four individual sites are distributed across the three tiers of the fictional TOA to capture different urban contexts common to BC municipalities. Urbanarium has also incorporated the input of First Nations designers and Indigenous housing developers to further increase regional applicability and repeatability of proposal ideas.










Competitors will be sent a site package for their assigned sites (based on their preference as described above in Registration) with detailed CAD drawings, site and cultural description of the land, and development scenarios for consideration.

Entrants must propose ideas for the site they are assigned following registration. The intent is to request detailed ideas for low end of market residential development at a suggested density with FSR between 4.0 and 5.0 (and as low as 3.0 in Tier 3), and to encourage experimentation with different land uses and public realm configurations. Consequently, entrants will be asked to consider the context surrounding their chosen site both as it is presently and as it might be redeveloped in a way that complements their proposal.

It is not a requirement that the proposed development include non-residential uses, however the integration of any such uses that benefit residents (for example retail uses, daycare, live/work or institutional uses) and that will make the residential component more affordable, is encouraged; the amount is at the discretion of the entrant.

Neighbourhood Sites Map



LEGEND		 Transit Station
 Site A	 Parks	
 Site B	 TOA Tier 1	
 Site C	 TOA Tier 2	
 Site D	 TOA Tier 3	

Full resolution site map PDF here:

https://drive.google.com/file/d/1Xa7ep38bTwL0mtw55jCvhU-qQ3C-6XSn/view?usp=drive_link

Site Descriptions

Site A

Located in TOA Tier 1

Immediately adjacent to rapid transit and within a 5 minute walk of shops, services, and green space.

Small block-end assembly of three 50' x 122' lots totalling 18,300 sf.

South-facing property fronting onto a mixed use arterial street with lane access at the rear.

On the shared territories of the Musqueam, Squamish, and Tsleil-Waututh Nations

Site B

Located in TOA Tier 2

Within a 5 minute walk of rapid transit, shops, services, and green space.

Large block-end assembly of six 50' x 122' lots totalling 36,000 sf.

North-facing property fronting onto a local residential street with lane access at the rear.

On the shared territories of the Musqueam, Squamish, and Tsleil-Waututh Nations

Site C

Located in TOA Tier 2

Within a 5 minute walk of rapid transit, shops, services, and green space.

Small irregular shaped lot, approximately 20,000 sf.

South-west-facing property fronting onto an arterial street without lane access

On the shared territories of the Katzie, Kwantlen, and Semiahmoo Nations

Site D

Located in TOA Tier 3

Immediately adjacent to a natural area and within a 15 minute walk of rapid transit, shops, services, and green space.

Large irregular shaped site, approximately 1.5 acres, without lane access

South facing property fronting onto a local residential street.

On Tsawwassen First Nation lands

Site Partners

BC Indigenous Housing Society

Frog Hollow Neighbourhood House

Sacred Waters Development

Tsawwassen First Nation

12. SUBMISSION REQUIREMENTS

Submissions will be delivered in:

- (1) PDF not exceeding 10 MB or 6 pages, 8.5x11 inches in landscape orientation. These pages will be used in a publication of winners of the competition.
- (3) JPGs for promotional use that should not exceed 2 MB each.
- (1) Video file for promotional use (will not be seen by the jury but will be used to

promote the submission post-competition) that should not exceed 50 MB or 1 minute. It can be about you or your submission.

- (1) Short biographical profile about the individual or team entrant including a photograph for press purposes (the biographical profile should be in a Word doc with the entrant's photograph as a separate .jpg file).
- (1) PDF poster version of entry, W41" X H65", for exhibition purposes at Woodrise 2025.

Format requirements are intended for the following purposes:

- Digital review by the jury (note that the entries will be anonymous to the Jury and Panel during their deliberations).
- Digital publication on the Urbanarium website and social media; JPGs and video are for social media, press and exhibition purposes. Cell phone quality for the video is fine, ideal JPG dimensions are 1080 X1080 pixels and these can repeat what is contained in the 6-page PDF. Content is open: the idea/key intentions of the submission, a before and after account of the site, an introduction to yourself and why you entered.
- Print publication in the Urbanarium Competition publication (8.5 by 11 inches in landscape orientation).
- Winners showcase at the 2025 Woodrise Congress.

Submissions selected for publication may be requested to provide InDesign files for layout and editing purposes. Each submission should provide six PDF pages that can be printed on standard 8.5 by 11-inch paper in landscape orientation with font sizes that can be read at that size.

The following is a suggested list of contents for the six pages of the submission; this outline lists information to be considered and included (on which page is optional) where relevant, with the design graphics and supporting text.

- A statement of the key intentions
- Graphics: 3D drawings, floor plans, and sections as needed to effectively convey the design response
- Project data: land uses and areas, size of dwelling units in the project, key features and amenities
- Design rationale including how the proposal addresses climate change and contributes to affordability
- Carbon reduction rationale: provide a strategy for reducing carbon compared an to industry standard concrete building, and an embodied carbon calculation using a methodology provided to competitors in the resources package
- Economic rationale: provide a business plan / proforma for the concept for the full development without including land value or carrying costs for comparison to the base case that will be provided in the resources package
- Social rationale: description of the contributions to the sociability of the project and the neighbourhood

- Relationship to the assumed existing zoning and site constraints: where does it follow and where ignore existing guidelines, if applicable; how does it fit or ignore municipal / provincial plans for the site
- Relationship to existing building code: where is it compliant and where does it challenge BC building code and why are these changes proposed
- Relationship to adjacent properties and streets
- Proposed alterations to project delivery, development approvals processes, and/or legal mechanisms for ownership and financing, if applicable
- Potential for the competition ideas to provide a catalyst for change in the context area and larger region

13. JUDGING CRITERIA AND JURY DISCRETION

For the overall prize winners, the Jury will have discretion in the award of prizes and will include in their consideration such factors as:

- a. Design features and proposed industry and regulatory changes that contribute to low-end-of-market affordability as supported by the proforma / business plan
- b. Systemization and standardization of building components and techniques for more streamlined timber tower delivery that reduces industry-wide carbon footprint
- c. Potential to promote quality of life, social interaction, and inclusivity among residents within the building and in the neighbourhood
- d. Innovative ways to both mitigate and adapt to climate change with appropriate, simple, and easily operated and maintained systems – for example, low energy, climate resilient approaches to comfort and livability
- e. Practicality and potential impact of the ideas if implemented
- f. Creativity and presentation quality

For the **DIGITAL Award**, the Jury will have discretion in the award of prizes and will include in their consideration such factors as:

- Innovative use of digital technologies and processes in the entrants' approach to repeatability

The Jury will have latitude in the award of the prizes and honourable mentions to highlight the features that they were impressed by in each submission and these features will be highlighted in the jury statements. They may for instance declare two winners and split the winner and runner up prize money equally between the two, or vary the number of winners, however the total value of the prize money shall not be reduced.

14. POST-COMPETITION ACTIVITIES

Activities will entail the preparation and release of the jury report, media releases, social media and website postings, an About Here video based on the winning entries, and publication of winning submissions with wide circulation including to the Councils and staff of relevant municipalities and First Nations across BC.

Winning submissions will also be featured at the Woodrise 2025 International Congress in Vancouver, BC.