

URBAN HABITATS COMPETITION

TIMBER IN THE CITY

THE FUTURE OF EQUITABLE URBAN LIVING

PROGRAM

2024 TIMBER IN THE CITY | Urban Habitats Competition

The Association of Collegiate Schools of Architecture (ACSA) is pleased to announce **TIMBER IN THE CITY 5: Urban Habitats Competition** for the 2023-2024 academic year. The program is intended to challenge students, working individually or in teams, to reimagine the boundaries of wood construction in the urban environment, leading to the transformation of our existing cities through constructing sustainable buildings made from renewable resources, offering expedient affordable construction, innovating with new and traditional wood materials, and designing healthy living and working environments. This is the fifth competition in the TIMBER IN THE CITY series, and this year provides an opportunity to meet urban housing needs through the addition of an overbuild, or vertical extension, made of wood to an existing building or structure. Mass timber's light weight makes it a natural choice for overbuild designs. In addition to helping maintain a building's original architecture or design, wood's light construction footprint may allow tenants to remain in an existing building during construction, as opposed to forcing tenants out while the existing structure is reinforced.

The Challenge

Entrants are asked to select a centrally located building, or structure, in a busy urban area and develop an innovative wood design solution that adds density through additional floor area, via a vertical extension, to address the affordability and sustainability crisis that affects our built environment.

Cities need to develop innovatively to meet the immense housing demands of their growing populations. Often, the proposed solution is centered on replacing old with new – with little regard to environmental, social, or cultural impacts of demolishing existing buildings. A possible approach is to build on top of the existing fabric of our cities, dovetailing new with existing. Entrants are challenged to propose construction systems in scenarios that draw optimally on the performance characteristics of not one but a variety of wood technologies and are encouraged to think about the existing building as a testing ground for socially, materially, and environmentally progressive and innovative models of sustainable urban living.

The program challenges students and educators to think creatively and critically about the way in which choices about building materials and existing infrastructure impact the health of urban environments.

Schedule

April 10, 2024	Registration Deadline (<i>free registration</i>)
June 5, 2024	Submission Deadline
Summer 2024	Winners Announced

Wood

The competition challenges participants to interpret, invent, and deploy numerous methods of building systems, with a focus on innovations in wood design on a real site. For thousands of years, solid wood has been used as a building material. Modern timber products and systems, coupled with advanced digital fabrication technologies, have greatly expanded the potential uses of this historic material. Mass timber is an ideal green building material: it is well suited for a broad range of structural and aesthetic applications; it offers economical construction and high-performance characteristics in strength and energy efficiency and provides an economic driver to maintain working forests and protect jobs in rural communities.

Wood is a natural, renewable, and sustainable material for building, with less environmental impact than other structural materials. Wood stores carbon and, with the least embodied energy of all major building materials, it requires less energy from the raw material extraction, transportation to the manufacturing facility, and production. Moreover, harvesting and replanting increases forests' carbon sink potential as the rate of sequestration is greater during young, vigorous growth. Active forest management, or forest thinning, mitigates wildfires, cuts carbon emissions, replenishes area waterways, expands wildlife habitat, and creates jobs in rural areas.

Awards

Winning students and their faculty sponsors will receive cash prizes totaling **\$40,000**. The design jury will meet in the summer of 2024 to select winning projects and honorable mentions. Winners and their faculty sponsors will be notified of the competition results directly. A list of winning projects will be posted on the ACSA website (www.acsa-arch.org).

	Student	Faculty Sponsor
First Prize	\$7,500	\$4,500
Second Prize	\$6,500	\$3,500
Third Prize	\$5,500	\$2,500
Fourth Prize	\$4,500	\$1,500
Fifth Prize	\$3,500	\$500

Criteria for Judging

Criteria for the judging of submissions will include: timber as the primary structural material, creative and innovative use of timber in the design solution, successful response of the design to its surrounding context, the creative and clear approaches to designing a healthy urban mixed-use environment with timber as a central material, successful response to basic architectural concepts such as human activity needs, commitment to meeting the needs of underserved communities, structural integrity, and coherence of architectural vocabulary.

The Jury will judge each student design proposal based on of the following criteria:

- The quality of the architectural concept and the rigor with which it is developed; Its technical sophistication, resolution, structural feasibility, and use of mass timber to enable a lightweight vertical extension to an existing building that requires limited intervention to the existing structure;
- The effectiveness of its visualization and representation through a variety of material, graphic, and digital media, those prescribed within each studio section as well other techniques that students may employ to supplement and substantiate their presentations;
- The breadth of design consideration with respect to the environmental and social implications and impacts of the building proposed and the way in which those concerns are quantified and visualized.
- A successful sustainability and lower carbon building performance.

Supporting Learning Objectives of the Competition:

- Explore structured collaborative work amongst students and faculty in addition to individual proposals.
- Incorporation of outside community of specialists into discovery and learning process.
- Identify and experiment with specific tools for integrated thinking and making.
- Create and follow a structured workflow for innovation and iteration.
- Specific emphasis on evidence of physical modeling, making, and mock-ups.
- Distill key findings into a compelling discovery and proposal that has a conceptual and physical imperative and is fully described.

Eligibility

Because the support of SLB is derived from companies whose markets are mainly in the U.S., the Timber in the City Student Competition is open to students and/or student teams from ACSA Full and Candidate Member Schools, as well as ACSA Affiliate Members Schools from the U.S. and Canada. Students may work individually or in teams and must work with a faculty sponsor on the submission.

An ACSA member school, faculty sponsor is required to enroll students by completing an online registration form prior to registration by **April 10, 2024**. All student entrants are required to work under the direction of a faculty sponsor. Entries will be accepted for individuals as well as teams. Teams must be limited to a maximum of five students. Submissions should be principally the product of work in a design studio or related class.

PROGRAM

The program allows students and faculty to select an existing building, or structure, in a neighborhood that provides a great opportunity to meet the urban housing needs through the construction of additional living space above the existing structure(s). Buildings of significant historical, social, economic, or cultural value – especially those under the threat of disuse or demolition – are recommended. While solutions can extend out from the existing buildings all proposed solutions must extend upwards, using the existing context and fabric of the city to reinforce the character of the proposed vertical extension.

The primary programmatic element in the proposal must be affordable urban housing, secondary program elements (commercial, recreational, educational, etc.) may be included but are not required. The objective being to increase housing density within the existing building stock, either through a specific site solution or repeatable typology that be replicated across a city.

The program challenges entrants to imagine new possibilities for the future of urban living. What is the relationship between the new dwelling unit and the existing building? What is the relationship between interior and exterior spaces, uses, and views and how is daylighting incorporated into each unit? What are the health issues related to the choice of materials and how can the use of timber and wood be leveraged to create living spaces that are connected to natural systems and biophilic responses to constructed environments. Residences in this project are a mix of small units for single or double occupancy and larger, family-based units with more than one bedroom. All apartments must have exposure to natural light and air, as well as rooms that meet minimums. The following program spaces are the minimum requirements and students may expand and consider any additional options.

<i>APARTMENTS</i>	<i>Individual sq. ft.</i>	<i>Quantity</i>	<i>Total</i>
Micro Units	325	15	4,875 sq. ft.
1 Bedroom	650	15	9,750 sq. ft.
2 Bedroom	850	10	8,500 sq. ft.
3 Bedroom	1,000	10	10,000 sq. ft.
<i>COMMUNITY AREA</i>			
Laundry	750	1	750 sq. ft.
Lobby/mail	1,500	1	1,500 sq. ft.
Restrooms	300	1	300 sq. ft.
Bike parking	1,000	1	1,000 sq. ft.
Bike maintenance/storage	400	1	400 sq. ft.
Office	500	1	500 sq. ft.
Subtotal			37,575 sq. ft.
Gross (Mechanical / Circulation) 15% Residential GSF			5,636 sq. ft.
TOTAL			43,211 sq. ft.

SITE

The existing building & site for the competition is the choice of the student and/or faculty sponsor and should be located in North America. However, the building should be accessible by alternative modes of transportation such as public transportation, biking, or walking. Submissions will be required to explain the site selection, strategy, and access graphically or otherwise.

CODE

Students should refer to the International Building Code and the local zoning ordinance for information on parking requirements, setbacks, easements, flood, egress, and fire containment. Challenges to conventional rules—parking requirements, for example—are encouraged but should be explained, made explicit and integral to the overall solution.

RULES

Registration

A faculty sponsor is required to enroll students online (available at www.acsa-arch.org) by April 10, 2024. Registration can be done for your entire studio or for each individual student or team of students participating. Students or teams wishing to enter the competition on their own must have a faculty sponsor, who should complete the registration. There is no entry or submission fee to participate in the competition. Each registered student and faculty sponsor will receive a confirmation email that will include information on how the student(s) will upload final submissions online. Please add the email address competitions@acsa-arch.org to your address book to ensure that you receive all emails regarding your submission.

During registration the faculty will have the ability to add students, add teams, assign students to teams, and add additional faculty sponsors. Registration is required by April 10, 2024, but can be changed, edited, and added to until a student starts a final submission; then the registration is no longer editable.

Registration Steps:

1. Faculty log into the ACSA website,
2. Click the "Register your Students NOW" button,
3. Select the 2024 Timber Competition from the submission type dropdown menu & Click "Enter",
4. Add an individual student click "Add Student". You will need to know each student's first & last names, email, & institution, which are all required fields for each student,
5. If this is a team registration, you may add additional students by clicking "Add Student" to the same submission to this team, teams must be limited to a maximum of five students,
6. Once the individual student or team is complete, Click "Submit",
7. Repeat steps 3 – 6 for each individual or team registration.

Faculty Responsibility

The administration of the competition at each institution is left to the discretion of the faculty within the guidelines set forth in this document. Work on the competition should be structured over the course of one semester during the 2023-2024 academic year.

Each faculty sponsor is expected to develop a system to evaluate the students' work using the criteria set forth in this program. The evaluation process should be an integral part of the design process, encouraging students to scrutinize their work in a manner similar to that of the jury.

Digital Submission Format

Submissions must be presented on four 20" x 20" digital boards, no more than 20MB. All boards are required to be uploaded through the ACSA website as JPEG files. The names of student participants, their schools, or faculty sponsors, must NOT appear on the boards, or in the project title or project title file name(s).

Design Essay or Abstract

A brief essay, 300 words maximum, is required as part of the submission describing the most important concepts of the design project. Keep in mind that the presentation should graphically convey the design solution and context, and not rely on the design essay to convey a basic understanding of the project. The names of student participants, their schools, or faculty sponsors, must NOT appear in the design essay. This abstract is included in the final online submission, completed by the student(s) in a simple copy/paste text box.

Program Summary

A program summary, 150 words maximum, diagram/text of spaces and areas is required as part of the submission. All interior and exterior spaces are to be included; total net and gross areas are required. The program summary is included in the final online submission, uploaded by the student(s) in a simple copy/paste text box.

Required Submission Documents

Submissions must include (but are not limited to) the following required drawings:

- Three-dimensional representations – in the form of axonometrics, perspectives showing the proposal in its context, montages and/or physical model photographs – to illustrate the character of the project;
- Site plan showing proposal in its context of surrounding buildings and topography, together with details of access/circulation;
- Building/site sections sufficient to show site context and major spatial and program elements;
- Floor plans to show program elements, spatial adjacencies and navigation strategies;
- Large scale drawing(s), either orthographic or three dimensional, illustrating:
 - the use and detailing of timber for building structure and/or envelope
 - integrated design

Incomplete or undocumented entries will be disqualified. All drawings should be presented at a scale appropriate to the design solution and include a graphic scale. The site plan should include a north arrow.

Online Project Submission

After the faculty sponsor completes the online registration, each student will receive a confirmation email, which will include a link to complete the online submission. The student is required to submit the final entries that must be uploaded through the ACSA Competition website at www.acsa-arch.org by 11:59 pm, Pacific Time, on June 5, 2024. If the submission is from a team of students, all student team members will have the ability to upload the digital files. Once the final submit button is pressed no additional edits, uploads, or changes can be made. You may “save” your submission and return to complete. Please note: The submission is not complete until the “complete this submission” button has been pressed. For team projects, each member of team projects may submit the final project, but each project should be submitted only once. Once the final submission is uploaded and submitted, each student will receive a confirmation email notification.

The final submission upload must contain the following:

- Completed online registration including all team members and faculty sponsors,
- Each of the four 20”x20” boards uploaded individually as high resolution JPEG files, no more than 20MB each,
- A design essay or abstract (300 words maximum)
- A program summary diagram/text of spaces and areas (150 words maximum).

The names of student participants, their schools and faculty sponsors must NOT appear on the boards, abstract, program summary, or in the file name.

By uploading your files, you hereby warrant that the submission is original and that you are the author(s) of the submission. Additionally, you agree that the Association of Collegiate Schools of Architecture (ACSA) has the rights to use your submission, images, and materials. ACSA will attribute authorship of the design to you, your team, faculty and institution.

RESOURCES

Entrants are encouraged to research references that are related to both the topic of the competition and precedent projects that demonstrate innovative use of timber such as those listed below. An intention of all ACSA competitions is to make students aware that research is a fundamental element of any design solution.

Wood Technology

1. [Mass Timber Design Manual Vol. 2](#)
2. [Think Wood Research Library](#)
3. [WoodProducts Council](#)
4. [US Forest Products Laboratory](#) – Product & Building Systems Research
5. [FPInnovations](#) – Product & Building Systems Research
6. [American Wood Council](#) – Codes & Standards Support
7. [naturally:wood](#)
8. [CLT Handbook](#)
9. [Timber in the City](#) – Andrew Bernheimer
10. [Mass Timber: Design & Research](#) – Susan Jones
11. [The Case For Tall Wood Buildings: Second Edition](#) – Michael Green
12. [Timber Construction Manual: Sixth Edition](#) - American Institute of Timber Construction

Daylighting

1. Boubekri, Mohamed. Daylighting Design: Planning Strategies and Best Practice Solutions. 2014. Web. (Georgia Tech library online access)
2. Cooper, Kenneth J. "Study Says Natural Classroom Lighting Can Aid Achievement". In Washington Post. November 26, 1999. [LINK](#)
3. Heschong Mahone Group, Daylighting in Schools, An Investigation into the Relationship between Daylighting and Human Performance, Condensed Report. Fair Oaks, Ca.: Pacific Gas and electric Company. 1999. [LINK](#)
4. <http://patternguide.advancedbuildings.net/using-this-guide>
5. Konis, Kyle., and Stephen. Selkowitz. Effective Daylighting with High-Performance Facades Emerging Design Practices. 2017. Green Energy and Technology. Web. (Georgia Tech library online access)
6. Lechner, Norbert, and C. Wallace. Heating, Cooling, Lighting: Sustainable Design Methods for Architects. Fourth ed. 2015. Web. (Georgia Tech library online access)
7. Reinhart, Christoph. Daylighting Handbook I. Cambridge, Ma: Building Technology Press. 2014. Print.
8. Reinhart, Christoph. Daylighting Handbook II. Cambridge, MA: Building Technology Press. 2018. Print.

Thermal Comfort and Bioclimatic Design

1. American Institute of Architects (AIA) Research Corporation, United States. Dept. of Energy, and United States. Dept. of Housing and Urban Development. Office of Policy Development and Research. Regional Guidelines for Building Passive Energy Conserving Homes. Washington: U.S. Dept. of Housing and Urban Development: for sale by the Supt. of Docs., U.S. Govt. Print. Off., 1978. Web. (Georgia Tech library online access)
2. Brew, James. "Achieving Passivhaus Standard in North America: Lessons Learned." ASHRAE Transactions 117 (2011): 51-58. Web. (Georgia Tech library online access)
3. Edelstein, Ken. The site, the shade and passive solar. August 16, 2017. Web. Retrieved 7-17-19 10:35PM. [LINK](#)
4. Gibson, Scott. "Does Passivhaus work in New Orleans?" in Green Building Advisor 7/18/2011. Retrieved 7/20/2019 1:22 PM [LINK](#)
5. Help for [CBE Thermal Comfort Tool](#)
6. Hootman, Thomas. Net Zero Energy Design a Guide for Commercial Architecture. Hoboken, N.J.: John Wiley & Sons, 2012. Web. (Georgia Tech library online access)
7. Knowles, Ralph L. Sun Rhythm Form. Cambridge, Mass.: MIT, 1981. Print.
8. Koti, Ramana & Feucht, Alissa. (2013). Opportunities and Challenges in Employing Energy Analysis Early in the Integrated Design Process. 42nd ASES National Solar Conference 2013
9. (SOLAR 2013). Conference Paper 2013. [LINK](#)
10. Lechner, Norbert, and C. Wallace. Heating, Cooling, Lighting: Sustainable Design Methods for Architects. Fourth ed. 2015. Web. (Georgia Tech library online access)
11. Mazria, Edward. The Passive Solar Energy Book. Expanded Professional ed. Emmaus, Pa.: Rodale, 1979. Print.
12. Milne, Murray, Liggett, Robin, Benson, Andrew, & Bhattacharya, Yasmin. UCLA Department of Architecture and Urban Design. Climate Consultant 4.0 Develops Design Guidelines for Each Unique Climate. American Solar Energy Society, Buffalo, New York, May, 2009. [LINK](#)
13. Ness, H.C. Van. Understanding Thermodynamics. Newburyport: Dover Publications, 2012. Dover Books on Physics. Web. (Georgia Tech library online access)
14. NIST.SP.1204 (re. weather data files accessible through Climate Consultant software)
15. Racusin, Jacob Deva. Essential Building Science: Understanding Energy and Moisture in High Performance House Design. 2016. Sustainable Building Essentials. Web. (Georgia Tech library online access)
16. Reinhart, Christoph. Daylighting Handbook I. Cambridge, Ma.:Building Technology Press. 2014. Print.
17. 2030 Palette: [LINK](#)

Sponsor

Softwood Lumber Board

The Softwood Lumber Board is an industry-funded initiative established to promote the benefits and uses of softwood lumber products in outdoor, residential, and non-residential construction and to increase demand for softwood lumber and appearance products. Through strategic investments in pro-wood communications, standards development, design and engineering assistance, research, demonstrations and partnerships, the organization seeks to make softwood lumber the preferred material choice from both an economic and an environmental standpoint.

Administrative Organization

Association of Collegiate Schools of Architecture

Leading Architectural Education and Research

ACSA is a nonprofit, membership association founded in 1912 to advance the quality of architectural education. The school membership in ACSA has grown from 10 charter members to over 250 schools in several membership categories. These include full membership for all accredited programs in the United States and government-sanctioned schools in Canada, candidate membership for schools seeking accreditation, and affiliate membership for schools for two-year and international programs. Through these schools, over 5,000 architecture faculty members are represented. In addition, over 500 supporting members composed of architecture firms, product associations and individuals add to the breadth of interest and support of ACSA goals. ACSA provides a major forum for ideas on the leading edge of architectural thought. Issues that will affect the architectural profession in the future are being examined today in ACSA member schools.

FOR MORE INFORMATION

Program updates, including information on jury members as they are confirmed, may be found on the ACSA web site at www.acsa-arch.org/competitions. Additional questions on the competition program and submissions should be addressed to:

Edwin Hernández-Ventura
Programs Coordinator
ehernandez@acsa-arch.org
202-785-2324

Eric Wayne Ellis
Senior Director of Operations and Programs
eellis@acsa-arch.org
202-785-2324