

# EXPERIMENTATION AND INNOVATION—

Mithun transcends the traditional boundaries of practice and scale to address questions not yet asked.

We invest in research to solve clients' increasingly complex challenges, tackle global issues and advance the profession. Design, technology and policy converge to create places that improve how all people live.

Mithun leverages research initiatives and design competitions to expand knowledge and help define a better future. Our internal Research + Development grant program funds staff-proposed project-based research and sparks multidisciplinary experimentation. Similarly, our Design Analytics initiative expands understanding of real user behavior across all project types and sectors through a broad base of evaluation and interview tools..

We generously share lessons learned and invest in tools that advance national practice—including [buildcarbonneutral.org](http://buildcarbonneutral.org), the first web-based materials carbon calculator; Greenhouse Gas Analysis methods used by ULI as a national template; urban planning guides utilized widely in academic settings; and theoretical design competitions that have advanced knowledge in ecological design and performance.

## Architecture at Zero >

Mithun's net zero energy student housing design for the UC San Francisco Mission Bay campus received the top 2015 Architecture at Zero Honor Award. **ESTUARY** was developed in collaboration with PAE and features three residential structures enveloping a central terraced courtyard that connects residents as well as energy and water systems below. The community houses 750 students, and includes a café, childcare center, living machine and rooftop agriculture.

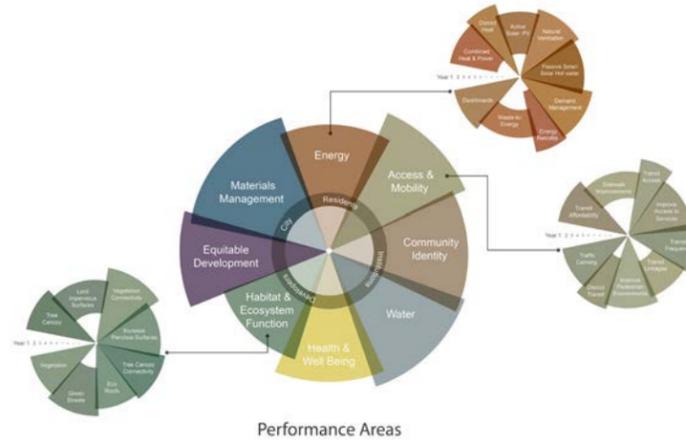
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### Calculating Embodied Carbon

The embodied energy of materials currently represents 20-35% of the life-cycle energy costs of a building, and this percentage is projected to increase to 60 or more as buildings approach their goal of net zero operational energy use. Our research team is currently investigating the use of life-cycle analysis to reduce embodied energy and emissions of materials, focusing on the impact of cross-laminated timber in comparison with Mithun's typical concrete and steel approach for multi-family and student housing project design. The effort incorporates data collection, workflow design and best practices, and will be developed into a training program for designers and application to other project types.



### Empowering EcoDistricts

We began collaborating with **EcoDistricts** and Portland State University in 2010 to develop the beta EcoDistricts Assessment Toolkit to address sustainability at the district scale. Mithun collaborated in the development of the Assessment Process and tools such as the Project Palette and Performance Matrix. The Toolkit was beta tested in three Portland EcoDistricts, and became the basis for refined technical assistance tools that make up the EcoDistricts Initiative program today.

### Contributing Leadership to LEED Rating Systems

Mithun helped to pioneer the LEED ND rating system. Bert Gregory served for five years on **US Green Building Council's** LEED ND Core Committee that developed the LEED ND rating system. Erin Christensen Ishizaki served for three years on the LEED Location and Planning TAG which handles planning and site issues across all LEED rating systems. In recognition of this work, Mithun received the USGBC Local/Regional Leadership award.



### Building Smarter

Building cost-effective, quality housing is key to sustaining diverse and equitable urban communities. The **Inhabit** housing prototype explores the potential for modular construction to deliver high-quality, modern apartment living while saving time and reducing cost. Collaborating with engineers, contractors and financial modelers, Mithun developed concept studies to determine the feasibility of modular fabrication options compared with traditional on-site construction. A full scale mock-up was constructed in a prominent downtown Seattle location to test the physical prototype and solicit community feedback on innovative micro-unit designs. Since its completion, the project's success and widespread praise has engendered a series of built applications of various scales.



### Design for Health

The **Mariposa Healthy Living Tool** is an evidence-based guide to integrate health into real estate. Mithun developed it for Denver's Mariposa Redevelopment where health is part of all decisions—from planning to property management. Using design thinking, Mithun translated public health research and methods into an accessible, integrated process for developers and designers to baseline indicators, prioritize, and implement project strategies for wellbeing. Today, the tool is an open source best practice published by Center for Active Design, Center for Disease Control, and U.S. Department of Housing and Urban Development (HUD).

Mithun is actively working with the **Green Health Partnership**—a collaboration between the US Green Building Council (USGBC) and University of Virginia School of Medicine, supported by the Robert Wood Johnson Foundation—to apply the LEED pilot credit to several affordable housing projects in California and to explore ways to increase systematic consideration of health within the design process.