CARTON HOUSE

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The Semester in Sustainable Design-Build empowers students to explore sustainable design and construction through collaborative hands-on exploration, experimentation, and refinement. This immersive program is focused on the creation of a 350-450 s.f. structure as a vehicle for research, design, and consensus-based decision-making. Ten to fifteen undergraduates from different disciplines—constrained by a limited timeline—focus on environmental stewardship, architectural aesthetics, and affordability. Many students enter this program with little to no experience in construction or design, allowing for innovation, unique perspective, and personal growth.

In August 2013, the eleven students and three faculty of the Semester in Sustainable Design-build were tasked with creating a flexible, portable structure for a single woman in sixteen weeks. The client, a psychotherapist in private practice, intended that the CARTON HOUSE would serve as office, group and individual meeting space, and well-appointed residence. Further, the proposed site would serve only temporarily as the client hoped to move the structure to a yet-to-be-found, remote site within five years.

The CARTON HOUSE required a high indoor environmental quality to address the client's chemical sensitivities. This, combined with a desire to minimize the embodied energy of materials through local sourcing, informed material selection and finishes. Building in a northern New England climate focused attention on a super-insulated building envelope and minimizing mechanical systems. With these priorities in hand, students carried a well-developed and responsive design intent through construction and to fruition in a 350 s.f. transportable structure, balancing a flexible program with aesthetic finesse. Affordability and portability drove constraints, engendering creative solutions from the student group. Height and space limitations gave rise to a custom Murphy bed and in-floor storage, aesthetically-engaging roof lines, and well-articulated facades and section.

Students began the program with varying degrees of prior experience in: design, tool use, and problem solving. As the semester progressed, early apprehensions and uncertainties yielded to enthusiasm, confidence, and ingenuity. Students enter this program intending to learn design and construction, yet complete the program as skilled and creative problem solvers—empowered to better our built environment and effectively steward our natural one.