

Material Re-use: Re-appropriating the Rio Mesa Barn

Rio Mesa Fellowship

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Purpose: This research project is to evaluate the potential of material deconstruction and reuse in architecture. The case project for this evaluation is a 1970's barn on the northeast side of Rio Mesa Center.

Methods: This research will include both field and lab components. Fieldwork will include visiting Rio Mesa to survey the condition of this barn with measurements, squareness, structural stability, through photographs and documentation for qualitative interpretation; and taking material and connection samples. Lab work will continue at the University of Utah campus where analysis of the field data will be interpreted. The material samples will be stress tested at the structural engineering lab in the Department of Civil and Environmental Engineering. Our research will include investigating the potential reuse of the wood and the benefits of reuse compared to new construction for reductions in cost, material and CO₂ savings. The result of our research will be both directly applicable to facilities developments at Rio Mesa and will answer larger questions about material reuse for a 1970's barn exposed to the elements during a 4-decade time span.

Significance: Rio Mesa is in the process of determining whether or not to save the barn for classroom space or reuse its materials for the development of decks and a bathhouse on the northeast side of the property. Although the practice of material reuse in building construction has obvious environmental savings, these savings have not been sufficiently documented in precedent and material reuse feasibility from a cost and material quality perspective is unknown. From the cases of material reuse very little critical investigation of material intrinsic and extrinsic properties have been conducted. This research projects will help to establish standards and metrics for material reuse evaluations. We will recite our findings and conclusions in a written report that will be available to Rio Mesa Center for its capital facilities plan, and cataloged with the EPA for public dissemination. As students of Architecture at the University of Utah, we see this scholarship as an opportunity to understand our local history from an architectural point of view. Sustainable design and issues of adaptive reuse, material reuse, and "green" architecture make up a large part of education in architecture and our growing profession at large. This project will provide us with research skills in adaptive reuse and material reuse studies becoming increasingly important in building practice.

