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Designing with alternative resources ***An educational practice review***

Within a series of design seminars, we explored physical prototyping and digital tools to study the reduction of material use and the utilization of overlooked resources in architecture in light of the ongoing concerns related to timber resources. The first subject examined was material reuse in timber construction. This course introduced digital tools and design methods to study the building systems that can be achieved by using reclaimed timber. By working on full scale prototypes, the students investigated the properties of this irregular material first-hand. A second seminar focused on developing new design methods for insect- and fungus-infected timber as an overlooked construction material. Using digital design and fabrication tools, the students experimented with infected and irregular timber stock to design novel components that can be obtained from diseased logs.

The results of these seminars demonstrated different applications for what can be achieved with alternative sources of timber through smart design choices. This paper reflects on the learning outcomes and presents teaching methods to integrate biomaterials (re)use and resource management in design education.

