An Education Based Design-Build Project

The Scrapwood Shell is a construction system for small shelters designed to highlight the re-use of scrap lumber, and to explore the sculptural beauty and structural efficiency of thin-shell curved forms. Digitally designed to maximize the use of the scrap lumber while minimizing weight, the Scrapwood Shells employ cutting-edge tools and techniques in innovative ways. But the project is also intended to serve as a community based service-learning opportunity in which students and community members in both Seattle and Philadelphia can be brought together to learn about recycling and green construction through direct participation in a series of events crucial to the shelters’ design and construction. To enhance environmental awareness, the landscape proposal for the Scrapwood Shelters calls for planting a small learning grove of native species typically used in wood lumber production.
Small Structure for Camping and Play

The Tortoise Shelter is a small domed enclosure about 10 feet by 10 feet in plan and 7 feet tall at its center. Scaled more to children than adults, the Tortoise Shelter is intended to be a place of fun and imagination as well as shelter and protection. Made of approximately 750 short scraps of lumber assembled on site, each tortoise can be built by a small group of volunteers over two normal working days. Custom jigs and guides make assembly straightforward, using mainly glue and 2 screws at each joint. If more than one unit is to be built, variations in shape and size can easily be accommodated.

The floor of the Tortoise Shelter is raised on a wood platform for warmth and durability. The entry crawl-door and smaller opening opposite it can be closed off with curtains for warmth and privacy.
Larger Structure for Gatherings and Play

The Rainbow Pavilion is an additional proposal for the Schuylkill Center for Environmental Education’s Gimme Shelter project. Intended as a larger structure for gatherings, group play, lectures, or other social functions, the Rainbow Pavilion covers approximately 300 square feet. This particular form also lends itself to imaginative play both beneath its broad roof, and also on the roof itself which can act as a sort of bridge. This proposal highlights the flexibility of the Scrapwood Shell construction system, and is shown as an example of the wide range of formal and structural solutions possible when working with scrap lumber in this way. It is easy to imagine variations of size, span or function that could come about as a result of consultation with curators, collaborators and project participants.