INTENT IslandWood provides experiential education the science, philosophy and spirit of environmental stewardship, servicing fourth through sixth graders largely from underprivileged and/or dense urban areas. The overall intent of the design (and the purpose of the center) is to raise standards of environmental responsibility and demonstrate how nature and man can co-exist harmoniously. Educational opportunities abound - in the woods, the laboratory, the kitchen compost, organic garden, water recycling /biofiltration system and other areas that were specially constructed to reveal their inner workings.

Role of the Landscape Architect Since the owners' intent was to explore new ways to meet environmental goals as well as new ways to teach them, collaboration between the owners and the design team was intense. Many programmatic decisions had to be made by the owners and the design team at every stage. The landscape architect was responsible for site planning, preservation and regeneration of natural systems, biofiltration, and planning for low impact construction.

The Site The boundaries of this 255-acre property enclose a nearly complete watershed. A thrice-logged tree farm and second growth forest, it was chosen for its wildlife habitat, salmon spawning streams and rich diversity of ecosystems, which include a four-acre pond, several categorized wetlands, cattail marsh, bog, stream, dramatic ravine, and access to a salt-water estuary park. Every effort was made to minimize impacts on the land and its natural systems and conserve resources.

ISLANDWOOD
A School in The Woods

The Berger Partnership PS
Landscape Architecture & Site Planning
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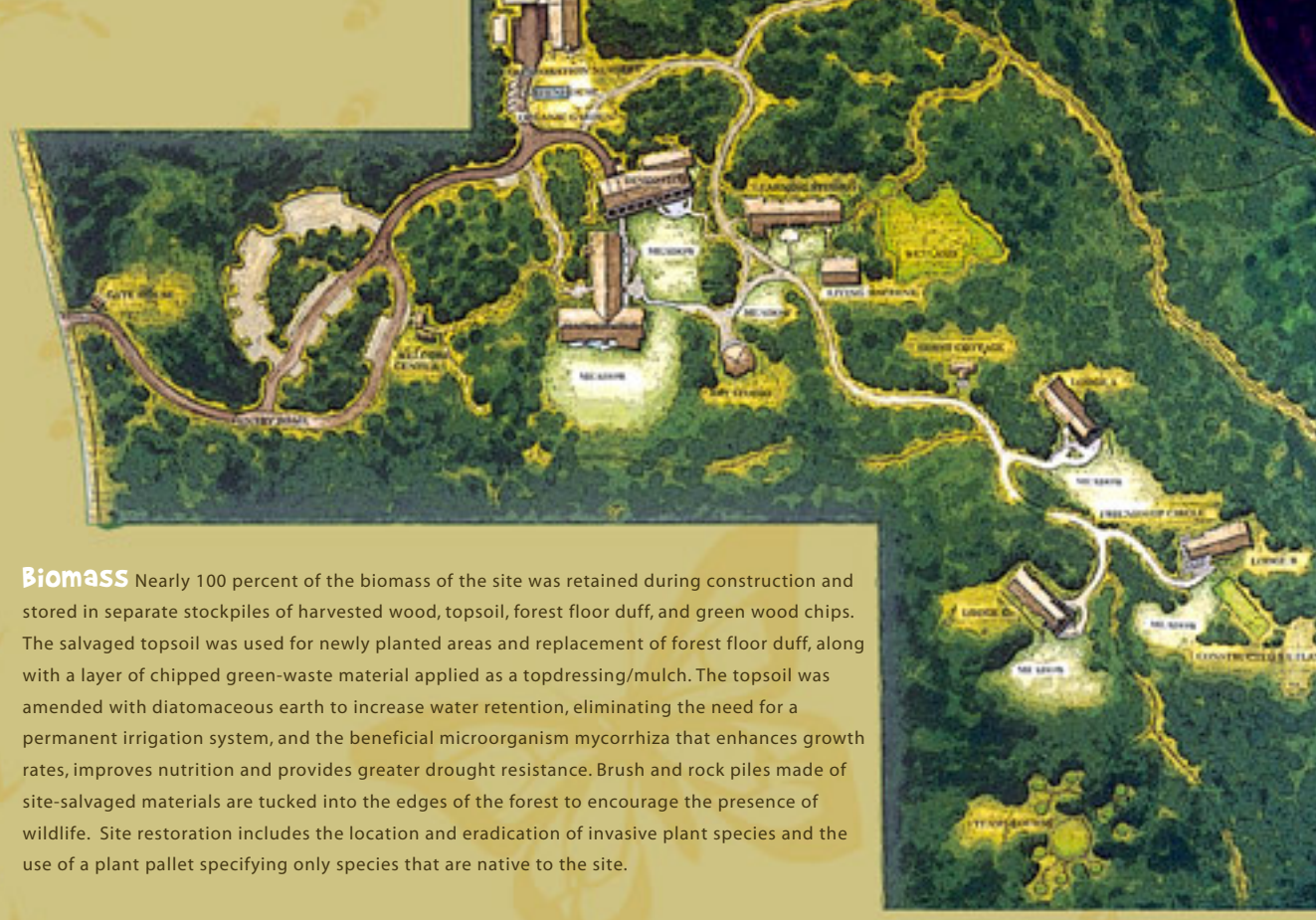
Our goal is to create compelling, sustainable environments with a practical approach to budget, scale, and schedule.

Alternate water systems: 2020 Engineers; Civil Engineering: Browne Engineering; Architect: Mithun Partners; Client: The Brainerd Foundation; General Contractor: RAFN Construction



Biomass Nearly 100 percent of the biomass of the site was retained during construction and stored in separate stockpiles of harvested wood, topsoil, forest floor duff, and green wood chips. The salvaged topsoil was used for newly planted areas and replacement of forest floor duff, along with a layer of chipped green-waste material applied as a topdressing/mulch. The topsoil was amended with diatomaceous earth to increase water retention, eliminating the need for a permanent irrigation system, and the beneficial microorganism mycorrhiza that enhances growth rates, improves nutrition and provides greater drought resistance. Brush and rock piles made of site-salvaged materials are tucked into the edges of the forest to encourage the presence of wildlife. Site restoration includes the location and eradication of invasive plant species and the use of a plant pallet specifying only species that are native to the site.

Biomass was used throughout the site to minimize both waste and construction impact (below).

Cisterns supply water to the organic vegetable garden.

Regenerative Systems Design efforts throughout the project link constructed and natural systems in new and interdependent ways, building in the means for regeneration and renewal. At the center of the regenerative systems is the "Living Machine™," where engineered wetlands and circulation pipes process black water through accelerated bioremediation. Pipes and wetland cells are exposed so that children can intuitively grasp the workings of the system. Treated water leaves the system through a celebratory water feature and is re-used to flush toilets and irrigate plants. Water from the toilets is recycled into the system and water for the plants is allowed to percolate through the soil back into the water table.

The organic garden, with raised beds, greenhouse, composting bin, water harvesting system and demonstration areas, provides an outdoor classroom and laboratory for understanding the cyclic process of growing and harvesting food plants. Food grown in the garden is harvested by students and staff and used in meals prepared at the center. Food scraps are measured and put in compost and worm bins to demonstrate the composting process and teach vermiculture. The compost is then used in the garden/nursery to propagate food plants and in the native plants nursery.

A Delicate Construction Process Only 6 percent of the site is now developed; the rest has been preserved or restored. Construction and utility installation was choreographed to minimize impact to the land, with work progressing from the furthermost interior towards the entrance, adhering to the strictly confined circulation route. Crews literally swept their tracks as they retreated from the site. Campus buildings were positioned on level and previously logged areas near property perimeters. Building footprints were staked to secure final commitment from the general contractor to confine construction activities to within 15 feet of building perimeters.

Bringing utilities into the site was a unique challenge to site preservation, as trenching and pipes can cause tree die-off due to dewatering. The problem was resolved by running utilities directly under the main paths that were raised higher than the forest floor. New trails, elevated walkways, and bridges thread through the site to reduce impact to sensitive habitats and natural systems. Primary pedestrian circulation follows a historic logging road and trails were constructed using native soils. A deep ravine provides opportunities for exploration and observation of natural stream conditions that are visually accessible from a suspension bridge, protecting the slopes and habitat from foot traffic.

The holistic approach to IslandWood seamlessly integrates "built" elements that teach environmental stewardship with design efforts that pass underfoot, largely unnoticed.

Constructed wetlands at a dormitory (above), the Living Machine™ (series below).