TENNIS HOUSE Washington, Connecticut

The tennis house is a part of a 200-acre woodland estate in northwestern Connecticut. The building and court occupy the southern end of a small man-made valley, formed by a quarry operation that had provided local construction companies with a steady supply of bank run gravel and sand for road building and backfill. After decades of concentrated excavation, the topography and surface conditions of a once forested hill-side and ridge had been utterly transformed into a 40 acre gravel pit. As the digging progressed and the natural water table was breached, muddy pools of water began to appear, slowing the quarry operation and alerting inland wetlands officials. By the early 1990's, the town's Conservation Commission called a halt to the sale of gravel from the site. A local land developer began the slow process of reshaping the land into a hardscrabble bowl surrounding a small spring-fed pond.

As we began our design for this small guesthouse and tennis court, signs of recovery were appearing. Wildflowers, weeds, and thin meadow grasses were colonizing the stony surface of the valley, and fast growing pines and an understorey of knotweed had begun to blur the sharp edge between deciduous forest and excavated pit. Our design drew its inspiration from the history of the site as an earthwork and its potential as a future garden. Because the land at the floor of the valley was protected by a recent conservation easement, the building size was limited to a habitable interior space of less than 600 square feet. However, the clients presented an ambitious program for this constrained floor area: two changing rooms, a bathroom, kitchenette and laundry, a bunk room and sitting room at court level, equipment storage rooms, and a living room overlooking the court.

We cut the tennis court into the southwestern edge of the basin that forms the pond. Board-formed concrete retaining walls shape the enclosure on three sides of the court. The other corner of the court--exposed by the falling grade--is hemmed by a removable curtain of woven net, suspended from a tensioned cable. The tops of the concrete walls match the natural elevations of the surrounding site and rise and fall with the grade of the hillside. The court appears to have been neatly cut into the otherwise undisturbed surface of the meadow as it slopes to the water's edge.

At the south end of the tennis court heavy doors, sided like all the doors in the building with cypress milled from salvaged timbers, swing open to a small bunkroom and sitting area at court level, embedded into the hillside. Above it, the small house overlooks the court. The concrete retaining wall that forms the building's back elevation transforms along its length to create an exterior shower, a sink counter for the bathroom, a storage wall containing the kitchenette and laundry, a rear stair to the court level spaces, an interior fireplace and exterior grill, and ultimately a catch basin for the roof's rainwater runoff. Along the courtside of the building, ten tapered columns and a one-storey cypress clad box (containing the changing rooms and interior shower) support the glue-laminated spruce framed roof. The roof's trapezoidal shape provides a low corner from which rainwater can drain. The splay of its substructure resolves the orientation of the court (22 degrees west of due north is optimal for play at this latitude) with the axis of the long view up the valley. Deep roof overhangs protect the southern and western exposures from solar heat gain in summer months. Covered in wild grasses, flowering weeds, and sedums, the roof appears as a pure plane of grass, punctuated by the chimney and a skylight which illuminates the windowless changing rooms below.

While taking advantage of the roof's function as a rainwater filtration system, we strove to reduce the thickness and weight of a typical sod roof. Between the waterproofing membrane and soil layer is a 1 ½" deep perforated plastic grid, formed like an egg carton to hold water until it overflows the perforations at the top and drains through and out of the system. This constant reservoir of water allows for minimum soil depths of 3" – 4"—sod usually needs at least 6" of earth to hold sufficient moisture to support plant life without irrigation—and sustains the kinds of wild grasses and sedums that characterize the quick draining soils and gravel of the surrounding landscape.

The building is heated and cooled entirely by a ground source heat pump that uses the water of the quarry pond as a thermal mass. By avoiding both the use of fossil fuels for heating and sidestepping the infrastructural costs of trenching or well-digging for the thermal loops, the client's added investment in heat pump equipment will be repaid in approximately 15 years. As well as providing a significant savings over the building's lifetime in the use and cost of fossil fuels, the system has eliminated the need for oil and gas trucks to make deliveries and freed the land from the kind of heavy vehicular traffic that until only recently had given the landscape its form and character.