

Green Building Case Study: St. Catherine of Alexandria Episcopal Church



St. Catherine of Alexandria Episcopal Church's new environmentally-friendly facility was dedicated on September 11, 2005 to honor and commemorate the lives of those lost during the tragedy of 9/11. This new creation lifts up those lost by honoring those who live and work together sustaining joy and hope in the stewardship of Creation. Mary Cramer, chair of the building fund offers a representative voice in response to the gift of the congregation's new home, "Nothing has prepared us for the sense of wonder, gratitude and community that we feel as the process has moved forward toward construction. We have been truly blessed."

St. Catherine of Alexandria Episcopal Church is a small, but growing, church nurturing a community dedicated to spiritual growth and sustenance through worship services, the contemplative arts and outreach to community needs. St. Catherine's new sacred space includes 2.8 acres located on Highway 101 between Manzanita and Nehalem. Ms. Cramer reports that 100 congregants plus returning vacationers began planning and raising funds for the new structure in 1999 initiating a 6 year process successfully completed with the support and leadership of Frank Dorscheimer, a long-time diocesan leader who recently passed away. St. Catherine's building project was divided into two primary phases of construction. Phase I represents 3,415 square feet of new building including a sanctuary, sacristy, entrance hall, narthex, bathrooms, and offices. When funding has been secured, Phase II, the construction of a new Parish Hall, will proceed.

The Architect: The creative force behind St. Catherine's new facility is Architect Tom Bender of Neahkahnie. He has won several national and international awards for his environmentally-friendly designs. In 2001, he was the National Award Winner for Sustainable Design of the American Institute of Architects, cited by the same organization the following year for designing one of the Top 10 Green Buildings of the year. In 2002, 1000 Friends of Oregon named Bender Developer of the Year.

Lighting: The lighting of St. Catherine's facility has been designed to incorporate both energy efficiency and sacred aesthetics. Wise natural lighting creatively reduces the need for electric lights. To create an environment of inward meditative focus in the sanctuary, Mr. Bender uses strategic natural lighting. Low windows on two sides of the sanctuary receive sunlight off the surface of outdoor reflecting pools and direct it to the wood ceiling. Electric lights are used at a minimum replaced by skylights directed predominantly over the alter space. Additional lighting in the sanctuary includes low voltage lighting tracks on dimmers. All other interior lighting is specifically energy efficient. Outdoor lighting fixtures meet both current energy efficiency and light pollution reduction standards.

Heating and Cooling: St. Catherine's facility incorporates the use of efficient heating and cooling systems. Considering a balance of the most efficient options for the region, a propane-fired water heater was installed that circulates hot water through the floors and baseboard heaters. Rather than air-conditioning, a system is used that pre-cools the sanctuary floor with water from a sand point well for the few days a year when excess heat may be an issue on the coast. During mild warm weather, the sanctuary will be cooled using the movement of air through low windows rather than mechanical space cooling. In addition to the operable windows, exhaust grilles allow stale, warmed air to exit the facility via a wind tower. The wisely designed ventilation system in conjunction with consistent and abundant insulation prevents energy waste from unnecessary heating and cooling.

Due to the task of meeting the diverse needs of a congregation, making choices for energy efficient equipment requires thoughtful and collective consideration. Ease of operation is an important factor for building committee members to consider when making decisions regarding new heating and cooling systems.

The heating and cooling system has been designed so that it would be attached to a ground source heat pump in the future when fossil fuels become scarce.

Connecting with Place: In support of the local economy, local building materials and artisans were used whenever possible. For example, the new cross on the peak of the church was fabricated by Wolfgang forge of Vernonia, Oregon. The cross was designed as an adapted replica of the bell tower cross of St. Catherine of Alexandria Monastery in the Sinai. Investing in local resources is a powerful choice for reducing energy consumption by reducing energy use and expenses created by the shipment of goods.

Nurturing and celebrating connection is a prominent theme within the landscape design of the building grounds. In considering landscape, Mr. Bender drew on his breadth of experience in creating sacred space in weaving together the congregation's desire to honor spirit, community, and environment. According to Bender 'The parishioners said they wanted to create a place that connected worshipers more deeply with the rest of creation and they also wanted to have it be environmentally responsive.' 'What we have done is tried to make the garden a sacred space in itself and have the sanctuary be a place to focus inward.'

The spiritual aspects of contemplative practice and awareness are supported outside as well as within the facility design. Outside, contemplative space is crafted to connect congregants to the landscape, a landscape including areas of wetland, forest, and open lawn. The open lawn incorporates a 600 ft meditation path bordered by areas of Naturescaping - native and drought resistant landscaping.

Earth Friendly Landscape Nurtures the Spirit: The intention to steward creation resonates strongly in the aspect of preservation. A significant portion of the site acts as a preserve for native plants and animals: fern, salal, and huckleberry; deer, elk, bear, and birds. Trees cut in the building process were used as stools and bench supports for seating around the grounds. Several dead trees were kept for wildlife habitation, one deeply notched to serve as a home for bats. The wetland area was left to grow and potentially become a site for a secluded seating area continuing the theme of contemplation and awareness in natural surroundings.

Water stewardship is effectively incorporated into landscaping plans. In addition to native plantings, efficient maintenance strategies support sustainable water use. Chip mulch obtained for free from PUD highway pruning was placed around all trees and plantings to cool, nourish, and hold moisture. Drip irrigation was installed to provide consistent moisture for landscaping supplied by a sand point well allowing for the reuse of abundant precipitation. To reduce water pollution, the building plans used as little pavement as possible. Except for a parking area and entry way for handicapped access, the parking lot is a permeable surface of gravel. The permeable surface allows for the reduction and filter of run-off water. A seasonal pond is defined with a 6' berm serving as a bioswale planted with native trees and shrubs. In the winter the pond fills from seasonal precipitation and drainage from the parking lot and roof gutters filtered through the bioswale.

A simple but powerful detail incorporated into the landscaping reflects the dedicational theme honoring 9/11 victims. A nurse log has been placed near the Memorial Pond, one of two ponds on the grounds, to serve as a reminder that death is not an end but an element of the cycle supporting new growth. In the commitment to caring for creation represented by St. Catherine's green building, we witness a new cycle of rebirth - the healing of old unsustainable practices with the new leadership of environmental ministry. For this vision, EMO's Oregon Interfaith Power and Light gives great thanks.