

Holy Redeemer Addition Goes Green: New Science and Media Center Exemplifies Caring for the Common Good

In this present time, we envision individuals and communities honestly evaluating their conduct and objectively viewing its consequences to see how that conduct impacts the environment.

--Columbia River Pastoral Letter, issued by Catholic Bishops of the Columbia River Watershed, 2001



Green roof on new addition

Inspired by the groundbreaking Columbia River Pastoral Letter, Portland's Holy Redeemer School found it imperative to take into account their environmental impact while planning and building their new Science and Media Center, an addition to their school facility. In the spirit of "honestly evaluating ...and... viewing consequences," the design and building process was shaped by a desire to create a building that would reduce rain water runoff.

Completed in 2005, the new addition serves as a science and media center where students can utilize educational resources to better understand coursework. It also serves as a perfect learning demonstration about green building and concern for the

environment for the children attending Holy Redeemer. Teachers can use the design and environmentally friendly features of the new building to teach about energy and water conservation. The new addition serves approximately 286 students, a portion of who attend class every day in one of the two new classrooms inside the media center. The middle school at Holy Redeemer spends time in and around the media center on a daily basis, learning about various science and media related topics.

The Architect: LSW Architects took the lead role in the design of the new science and media center addition. They were established in 1955 and since have completed a number of green projects on educational facilities. LSW has completed over 20 LEED certified projects and is nationally recognized for its strong portfolio of completed projects including work on schools, universities, and religious buildings. They were partners in designing the first net zero (zero emission) facility in the United States. Holy Redeemer's 2005 addition made it the first LEED certified Catholic school in the country and enabled the school to join a handful of other K-8 schools from around the nation that are LEED certified. Some of the main design elements were new lighting, incorporating natural light, a GreenGrid roof, and a state-of-the-art energy-efficient heating and cooling system.

Fund Raising: Fundraising took place through a number of different avenues. Holy Redeemer wrote to many major foundations for grants. Grants from foundations, including contributions from the Meyer Memorial Trust and the M.J. Murdock Charitable Trust, made up a portion of the money needed to move forward with the new science and media addition. The nature of a "green" school building was especially attractive to some of the foundations. Holy Redeemer also accepted individual gifts and donations from constituents of the school and parish. A significant portion of the cost was covered by generous individual donations. All in all, it was a combined community and school effort that allowed Holy Redeemer to acquire the funds required to complete the project.

GreenGrid System: The Holy Redeemer addition was especially outstanding due to its installation of a 4464 square foot GreenGrid Roof; this system is essentially a “living” roof. This is a roofing system that uses 60% post-consumer waste as a base upon which small plants and shrubbery grow. The GreenGrid provides additional insulation in the winter by retaining heat and helps to cool the building in the summer by reflecting heat that would otherwise be absorbed by an asphalt or metal roof. Green roofs have been shown to save 20-50% on a building’s energy costs. In addition to the economic benefits found in reducing energy costs, green roofs provide environmental benefits as well. The plants, grass, and shrubbery on the green roof help to retain rain water that would otherwise run into storm drains. The plants also help to absorb carbon dioxide, produce oxygen and reduce the urban heat-island effect (which is caused by the absorption of heat by roads and rooftops). The green roof also adds aesthetic value to the building; now the roof is a place to go for observation and relaxation.



Workers installing GreenGrid



Hallways use skylights to bring in natural light

New Electric and Natural Lighting: All new light systems installed in the science and media center are set to turn on when wall monitors detect sound or motion. This helps to conserve energy by automatically turning on the lights when someone enters a room and turning off the lights when movement and/or noise are no longer detected in the room. Also, skylights were added in all of the hallways as well as classrooms in the new addition. Not only does this help to save money and energy, but it also promotes an environment more conducive to learning. Studies have demonstrated that learning improves when students learn in classrooms with natural light as opposed to artificial light.

Bioswale: The building was also equipped with a bioswale system. The system includes a network of draining gutters that lead to a single drain spout which waters a garden of plants outside of the new addition. The excess water is then filtered through another garden and gravel before it reaches the storm drains. This system both reduces the overall volume of runoff from Holy Redeemer by retaining most of the rainwater from direct flow into streams and rivers, but it also ensures that the rainwater is fairly clean.

New Construction and Energy Savings: Many environmentally friendly construction techniques were used in the construction of the Holy Redeemer addition. Bamboo, rather than wood, was used for all doors, siding, and trim because it is much more renewable. Non-toxic, low-emissions paints were used inside and outside of the new media center to ensure excellent air quality for the people who use the center. Ninety-six percent of all materials from the demolition of the existing building were either recycled or re-used elsewhere. The new building constructed used 35% recycled products. It boasts a 30% reduction in both energy-use and water-use per year over its non-green counterparts.

Many schools in the Portland area and around the country are beginning to adopt green building practices in an effort to promote learning and care for the natural environment. Holy Redeemer sets an example for all schools, especially those with a religious affiliation.

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