

LEED certification leads the way to sustainable living

In order to increase the level of sustainability in the operation of buildings, the U.S. Green Building Council (<http://www.usgbc.org>) is developing the Leadership in Energy and Environmental Design (LEED) Rating System. They are doing this for new construction (NC), existing buildings (EB), commercial interiors (CI), core and shell products (CS), homes (H), and neighborhood development (ND). According to *LEED Green Building Rating System*, a 90-page document available at their website, 14 possible points can be accumulated for the sustainability of the building site, 5 for water efficiency, 17 for energy and atmosphere, 13 for materials and resources, 15 for indoor environmental quality, and 5 for innovation and design process. Points can be earned by such measures as those which reduce traffic of single-passenger automobiles, use of fresh water, use of fossil fuels and electricity, and the use of virgin materials. Buildings which score 52 of the 69 maximum possible points are assigned platinum certification, those which garner 39 to 51 points gold, 33 to 38 points silver. A building which earns 26 to 32 points is "certified."

When it was determined that building a new Summerfield Elementary School in Neptune, NJ, would be more cost effective than rehabilitating the original 1927 school building, the door was opened for many path-breaking opportunities. The Neptune Board of Education and the New Jersey Schools Construction Corporation (NJSCC) planned the first design/build school project in the state. In New Jersey "design/build" means that the building is initially specified in terms of design criteria but that the designing and building proceed together as the project evolves. This requires two kinds of architects: a "bridging" architect and a "design" architect. In this case the former role was played by SSP Architects, the latter by EI Associates and Engineers, who worked closely in the construction of the building with Patock Construction.

The Municipal Land Use Center at The College of New Jersey organized a presentation and tour at Summerfield Elementary on 13 July 2006. As Athena Sarafides from the New Jersey Department of Environmental Protection Division of Science, Research and Technology Bureau of Sustainable Communities & Innovative Technologies said in her opening remarks, what is needed for something to happen is a leader with a vision and a team to back him up. In Neptune it was David Mooij, a former teacher and coach, now the district superintendent. Mooij talked about how the current project came about, including the idea that the building should have the appearance of the region's agricultural Early American past rather than that of a conventional school.

Though the building had originally been targeted for LEED silver certification, Mooij beamed with pride when he said that it had already earned 42 LEED points (in the gold category) and was hoping to get 43. Paul Qvale, formerly of the NJSCC, subsequently explained that LEED certification was mandated by Executive Order #24 issued in 2001. Summerfield's 42 points came from such things as channeling stormwater to recharge groundwater, using waterless urinals, recycling construction waste, a solarium (though the specification of an Early American look precluded a LEED point from illuminating 75% of interior space by daylight), the use of

floor-based "diffusers" to pump in air (they can get this air to where the people are more efficiently than vents at the required

9.5-foot ceiling height, though it was agreed that this way of inputting climate-controlled air would probably not be "a good idea" in a high school), ceiling light fixtures sensitive to light and motion sensors, and even the reclamation of a brownfield. Curiously, the geothermal energy system used to heat and cool the building, through 90 wells 400 feet under the parking lot, did not qualify to give the building credit for the use of renewable energy (but their climate control bills will still be lower -- only the cost to pump heat to and from those wells).

For more information about the Summerfield Elementary School, visit <http://www.neptune.k12.nj.us/education/school/school.php?sectionid=20>.