Rio Hondo’s First Green Building: The Learning Resource Center

Here’s how Rio Hondo College’s new Learning Resource Center (LRC) became “green”:

Recycling:
- Reinforcing steel (rebar) used for the concrete elements came from a local foundry that melts down firearms and used cars.
- During construction, waste debris was extensively recycled.
- Some of the concrete used in the building came from concrete crushed during the demolition of the former Putnam Center.
- Carpet tiles are made from recycled material and are a low VOC (volatile organic compounds) product – environmentally friendly and non-toxic. This is called a “cradle-to-cradle” product because it will never go to the landfill. After its life is over here, it will go back to the manufacturer and be recycled into “new” carpet.
- Furniture and upholstery fabrics used recycled materials.
- Countertops at both of the Library’s service desks consist of Ice Stone® (crushed glass and polymer resin).

Reducing energy consumption:
- The following LRC features reduce heating and cooling costs:
  o Its “cool roof” minimizes solar heat gain from transferring into the building. Part of the teardrop-shaped roof area over the library is covered with aluminum-zinc alloy coated metal roof panels while the remainder of the roof is covered with a light colored granule surface.
  o A “green roof” on the north end of the building naturally cools the spaces below the roof and reduces glare into the building. It also slows the deterioration of the underlying roof “membrane” from the sun’s UV rays and heat. The “green roof” uses a drip irrigation system and is visible from the Business Building and from LR-224.
  o Natural light throughout the building.
  o An electronic building energy management system (EMS) from the College’s Central Plant that monitors thermal comfort.
  o Sensors in the book stacks, study rooms, classrooms and offices to turn lights off automatically when no one is present.
  o Light-blocking motorized shades in the Library that are controlled by a photosensor which automatically lowers or raises the shades to control the amount of sunlight in the book stacks area
  o Low-E (low emissivity) window glass that keeps the building interior cool in the summer and warm in the winter. These high performance windows reduce the need for artificial light and block excess heat (look for little black dots on the windows – these reduce glare and block heat).
  o Flat panel computer monitors which generate less heat than traditional monitors.
• The construction phase used local and regional materials, thereby reducing the consumption of gas and oil for transportation.
• Light pollution to adjacent site is reduced.

Reducing indoor pollution:
• Design and construction elements included:
  o Zero use of CFC based refrigerants in the HVAC system (heating, ventilation and air conditioning)
  o Entry door walk-off mats to increase chemical and pollutant control
  o Implementation of an indoor environmental quality plan with the use of high efficiency air filters, air flushing, and prohibition of tobacco smoke within 25 feet of the building
  o Increased ventilation that reduces any concentrations of CO2
  o Green and non-toxic building materials were selected whenever possible to reduce gas emissions, including gases generated from the use of non-renewable petroleum-based resources. Care was taken in specifying non-solvent based/low VOC (volatile organic compounds) products. Examples of low-emitting materials are the paints and coatings, carpet systems, adhesives and sealants.
• Before occupancy:
  o Heating and electrical systems were run so that as much outgassing of materials as possible was completed before building occupants moved in.
  o All filters were replaced as part of the flush-out process.
  o Care was taken to prevent dust infiltration in ducts and mechanical systems prior to the mechanical systems’ being activated.
  o A separate ventilation system was installed for the enclosed Copy Center in the Library.

Using renewable energy sources:
• Water-efficient landscaping using native species and drought-resistant plants greatly reduces maintenance and water consumption needs.
• The College participates in the use of renewable energy sources through the purchase of Green Power credits.
• Native grass in the green roof will not require mowing (though it requires weeding). Tips of the grass are cut twice a year and the clippings remain in the planter area.
• The LRC is in walking distance to public transportation.
• Look for renewable wood species throughout the LRC:
  o Bamboo veneer on perforated sound-soaking ceiling in the library lobby
  o Clear maple panels in the lobbies. The wood’s light color helps to distribute the natural light coming into the building.
  o African mahogany veneer on the face of the Circ and Reference desks
  o 1” thick Douglas fir end-grain flooring (main lobby and library lobby); cork strip on the perimeter allows for shrinking and compression of the floor.
• Exposed Glulam beams over the library. Glulam (or glued laminated wood) is an engineered wood where layers of specially selected lumber are bonded with strong, durable adhesives (glulambeams.org).
• Abundant natural light reduces the need for artificial lighting.

During Fall 2009, the Rio Hondo Project Management Team will submit project documentation to the Green Building Certification Institute for certification as a LEED building. Leadership in Energy and Environmental Design is the commonly accepted rating system for environmentally-friendly buildings.

JSM 10/09