

Rosenkranz Hall



Yale University designed and built Rosenkranz Hall in alignment with the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) rating system at the Silver certification level.

INTERIOR ENVIRONMENT

On average, Americans spend 90% of their time indoors, and it is estimated that indoor pollutant levels can be two to five times higher than outdoor levels. Rosenkranz Hall incorporates environmental controls, such as local task lighting, bi-level light switching, and access to thermostats to allow occupants to adjust visual and thermal conditions to their preferences. Materials and finishes with low Volatile Organic Compound (VOC) content were chosen to reduce exposure to unhealthy air particulates, maintain excellent air quality, and preserve occupant health. Wood materials do not contain any added urea-formaldehyde, and paints and carpets were selected to have low VOC content.

ENERGY EFFICIENCY

Fossil fuel-based energy generation contributes to global climate change. According to the Environmental Information Administration, buildings consume about 40% of the energy and 72% of the electricity produced in the United States. To improve efficiency, Rosenkranz Hall utilizes energy-conserving technologies that also lower the annual operating cost. The building systems, combined with the envelope improvements, will result in an annual energy cost savings of 22% compared to a baseline building. HVAC strategies include demand control ventilation, high-efficiency air handling units with variable frequency drives on supply fan motors,

61% of the wood used in the project was certified by the Forest Stewardship Council

53% of construction material was diverted from landfills

27% of material installed in this project was manufactured from recycled materials

37% of construction material came from within 500 miles of the project site, reducing pollution from delivery fuel and lowering overall transportation costs

34% reduction in annual potable water use is anticipated with the water-saving measures provided in the building

variable-speed chilled and hot water loop pumps, premium-efficiency motors, and radiant heating panels. High-efficiency lighting fixtures reduce the lighting power density below ASHRAE 90.1-2004 minimum requirements, and occupancy sensors are installed in all regularly occupied spaces to reduce lighting power. Windows have high-performance insulated glazing characteristics, which, combined with wall and roof construction that exceeds minimum insulation requirements, allow for thermal control by the well-insulated envelope.

SITE, ACCESS, AND TRANSPORTATION:

Yale University strives to reduce automobile use by providing alternative solutions such as easy access to public transportation and car/van-pooling throughout the campus. Rosenkranz Hall is located at a former parking lot site, surrounded by other academic facilities and city amenities. Net parking area was significantly reduced after completion of construction. Nearby neighbors include Luce Hall and various School of Management buildings. Yale's central campus and downtown New Haven are within easy walking distance. Students and staff can take advantage of the exceptional amount of public transportation available. A campus shuttle stop located just outside the facility provides campus shuttle service as well as connection to the New Haven Transportation system CT Transit.

MATERIALS

Waste reduction preserves natural resources, saves energy, lowers costs, and reduces pollution risks. Priority was given to regional materials and products sourced and manufactured within five hundred miles of the project site, as well as materials with pre- and post-consumer recycled content. In addition, wood materials designed in the facility were specified and sourced from sustainably managed forests.

WATER EFFICIENCY

In the United States, more than 340 billion gallons of fresh water are withdrawn daily from rivers, reservoirs, and streams to support industrial, commercial, residential, and agricultural needs. After use, this water is then discharged back into these water bodies. Rosenkranz Hall is dedicated to saving water and designed for only water-efficient plumbing fixtures throughout. There is no irrigation on site, eliminating demand for exterior water use. All restrooms have dual-flush water closets and pint-flush urinals, and low-flow faucets have flow rates below the minimum EPA requirement. The project has predicted whole-building water savings to be more than 44% compared to the EPA's baseline water fixture performance requirements.



Total floor area

68,627 sq ft on five floors,
including a lower-level basement

Total site area

2.86 acres

Opening date

Fall 2009