

# Yale Health Center



Yale University designed and built the Yale Health Center in alignment with the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) rating system at the Gold 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. At the Yale Health Center, ventilation rates, temperature controls, lighting, and ample views to the outdoors were carefully designed to achieve optimal indoor environmental quality and promote occupant well-being. Carbon dioxide sensors ensure that fresh air is supplied when CO<sub>2</sub> concentration levels are high. Finishes, such as interior paints, sealants, and adhesives, have low Volatile Organic Compound (VOC) content to reduce toxicity and noxious odors. Post-construction, new air filters were installed to guarantee a dust-free environment; and the building was air-tested to ensure that VOC, particulate, and carbon monoxide (CO) levels were well below acceptable thresholds.

## 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, the Yale Health Center utilizes energy-conserving technologies that also lower the annual operating cost. Occupancy sensors in offices, equipment rooms, and lavatories provide automatic switching when these areas are not occupied. During unoccupied hours,

**96% of the wood** used in the project was certified by the Forest Stewardship Council

**90% of construction material** was diverted from landfills

**34% of material** installed in this project was manufactured from recycled materials

**25% of construction material** came from within 500 miles of the project site, reducing pollution from delivery fuel and lowering overall transportation costs

**33% reduction** in annual potable water use is anticipated with the water-saving measures provided in the building

temperature setpoints are expanded to reduce energy consumption. A heat recovery system recaptures energy from the main exhaust system and uses it to pre-heat (in the winter) or pre-cool (in the summer) the outdoor supply air. Ventilation fans have variable frequency drives that allow fan motors to reduce speed in response to reduced airflow requirements.

## 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. The Yale Health Center is regularly serviced by both University and City of New Haven bus lines, which also connect it to New Haven's Union Avenue train station. In addition, its central location is within walking distance of most Yale buildings and many local amenities; and bicycle racks, showers, and locker rooms are provided to encourage bicycle commuting. Yale's parking policy incentivizes carpooling with discounted rates for two-person carpools and free parking for carpools of three or more.

## INNOVATION IN DESIGN

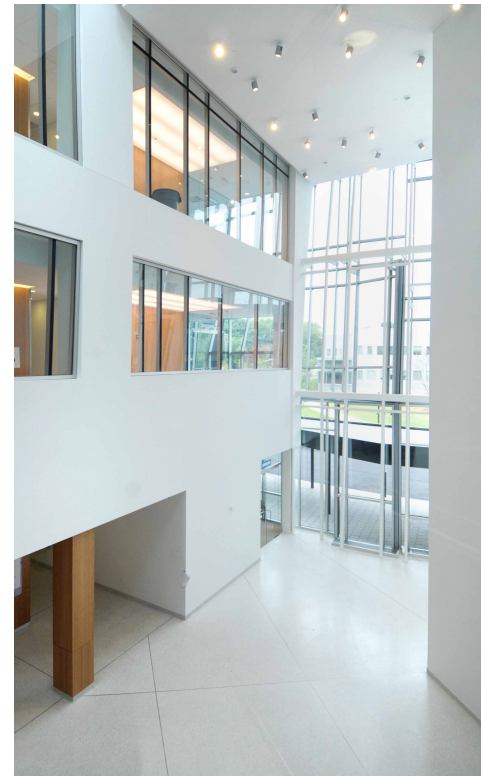
Innovations in design at the Yale Health Center include the implementation of a green housekeeping plan, the development of Green Socials to increase awareness of sustainable practices, and implementation of the *Green Guide for Health Care* program. In addition, the project achieved an exemplary performance credit for 34% of construction material manufactured from recycled materials.

## MATERIALS

Waste reduction preserves natural resources, saves energy, lowers costs, and reduces pollution risks. This project diverted a large portion of its construction waste from the landfill through a rigorous recycling program. To reduce the environmental impact created from the processing and distribution of virgin materials, care was taken to specify locally manufactured materials with high recycled content. Such materials include steel, concrete, and FSC-certified wood. Yale University also promotes recycling of daily waste materials such as plastics, metal, office paper, corrugated cardboard, and equipment. The building provides built-in recycling centers throughout.

## 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. In an effort to conserve water, ultra-low-flow lavatories, urinals, and showers along with low-flow water closets were used in this project. As a result, the Yale Health Center is expected to greatly reduce its annual potable water use.



### Total floor area

147,006 sq ft, with a detached 323-space parking garage

### Total site area

2.86 acres

### Opening date

August 2010

Yale