

# Greenberg Conference Center



Yale University designed and built the Greenberg Conference 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.

## ENERGY EFFICIENCY

The building systems, combined with the high-performance envelope design, will result in an annual energy cost savings of 24.2% compared to a standard building of similar size and program. Energy consumption at the site is 29% less than the average building, which is directly attributable to the ground source heat pumps that make up the primary mechanical system for heating and cooling the facility. Other mechanical HVAC strategies include demand-control ventilation with CO<sub>2</sub> monitoring, displacement ventilation in the dining room and amphitheater, high-efficiency air handling units (AHU) with variable frequency drives on supply fan motors, variable speed chilled and hot water loop pumps, and premium-efficiency motors. In addition, high-efficiency lighting fixtures reduce the lighting power density below ASHRAE 90.1-2004 minimum requirements, and occupancy sensors in all regularly occupied spaces reduce lighting power. All windows have high-performance glazing, and the wall and roof construction exceed minimum insulation requirements; as a result, the well-insulated envelope provides optimal thermal control.

## INDOOR ENVIRONMENTAL QUALITY

The Greenberg Conference Center implemented improved ventilation rates, exceeding minimum requirements and ensuring a high degree of indoor

**50% of the wood** used in the project was certified by the Forest Stewardship Council

**86% of construction debris** was diverted from landfills

**20% of materials and products** installed in this project were manufactured from recycled materials

**40% of materials** (based on cost) came from within 500 miles of the project site

**38.8% reduction** in water use in comparison to a conventionally equipped building is anticipated

air quality. The displacement ventilation systems provide fresh air to occupants in the dining room and amphitheater, and CO<sub>2</sub> sensors regulate outdoor air ventilation. No smoking is allowed within the building, and all outdoor smoking areas are located at least 25 feet from primary entrances and air-intake locations. Finally, interior materials such as paints, adhesives, and carpeting were selected to have no or low volatile organic compound (VOC) content, which also contributes to a healthy space.

## MATERIALS

The design and construction of the Greenberg Conference Center were dedicated to reducing demand for raw materials and resulted in a facility that is made up of more than 20% recycled content materials and products. More than 40% (based on cost) of materials used were locally sourced. More than half of the wood used was certified sustainable by the Forest Stewardship Council. During construction, the contractor recycled 86% of debris, thereby diverting this waste from the landfill. The building requires recycling of materials as part of its operational policy. Each floor has a dedicated area for collecting recyclables; because the center often welcomes international guests, the recycling bins are labeled with symbols, not words, so non-English speakers know how to dispose of their waste properly.

## WATER EFFICIENCY

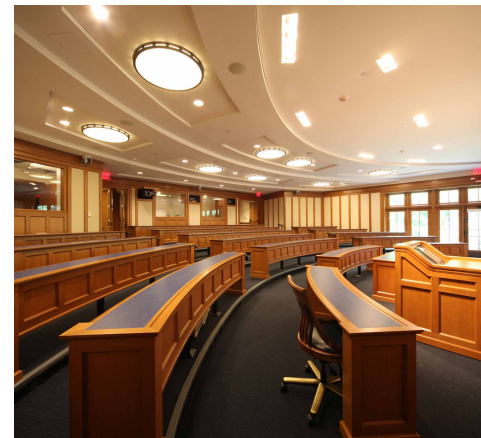
Water conservation is reinforced through the installation of water-efficient fixtures throughout the building. All restrooms have dual-flush toilets, waterless urinals, and low-flow faucets with flow rates that exceed minimum EPA requirements. Additionally, there is no irrigation on site, eliminating demand for exterior water use. It is predicted that water savings will be 38.8% compared to the EPA's baseline water fixture performance requirements.

## SITE AND LANDSCAPE

The conference center was built on previously developed land and was designed to have a minimal impact on the landscape, preserving the open space to support the existing biodiversity. The open area around the facility is shared with the Betts House, and the site design involved low-maintenance landscaping with no irrigation requirements. Situated on a hill, the site required careful stormwater management techniques to reduce runoff. Site design features such as vegetated filter strips and structural infiltration controls provide stormwater mitigation.

## TRANSPORTATION

Accessing the Greenberg Conference Center by public transportation is easy. Two Yale Shuttle routes provide regular service along Prospect Street. While many visitors to the conference center travel from out of town and will arrive by bus or taxi, local visitors can walk or bike to the center, where onsite bicycle parking is provided. Additionally, the adjacent Betts House parking lot is home to two of twenty-seven Zipcars available to University members. The local convenience of this car-share service encourages carpooling and ridesharing practices.



### Architect

Robert A.M. Stern Architects

### Total floor area

13,642 sq ft, including a connecting passageway to the adjacent Betts House

### Opening date

May 2009

Yale