

# Laboratory for Surgery, Obstetrics, and Gynecology 2 and 3



Yale University renovated the 2nd and 3rd floors of the Laboratory for Surgery, Obstetrics, and Gynecology (LSOG) in alignment with the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) rating system at the Gold certification level for Commercial Interiors.

## ENERGY EFFICIENCY

In keeping with Yale's greenhouse gas reduction goals, energy conservation is a main focus of any new project. In the LSOG renovation, electrical loads are reduced by the use of both occupancy sensors tied to lighting and ventilation fans with variable frequency drives that reduce speed in response to reduced airflow loads. In addition, no CFC-based refrigerants, which have global warming and ozone-depleting potential, are used in the lab.

## INDOOR ENVIRONMENTAL QUALITY

High indoor environmental quality contributes to the well-being and productivity of a building's occupants. Features of the LSOG renovation, ranging from positioning of the workstations to materials used in construction, all contribute to the excellent indoor environmental quality of the space. The project exceeds the highest standards for air quality (ASHRAE 62.1-2004). Materials specified and installed – including adhesives, sealants, paints, carpets, and systems furniture and seating – emit low levels of volatile organic compounds (VOCs). Lighting design and controls, which include task lighting, multi-level controls, and occupancy sensors, allow occupants to have maximum control while reducing energy use.

**52% of the wood products** used in construction were certified by the Forest Stewardship Council

**40% of the building materials** were manufactured regionally

**11% of the total dollar value** of all materials used in this project represents recycled content

**83% of demolition and construction debris** was recycled, diverting it from landfills

Natural daylight is available in 90% of all regularly occupied spaces, and 93% of regularly occupied seating spaces have direct line of sight to the outdoors.

## MATERIALS

To minimize the environmental impact of the project, all aspects of the design and construction process were carefully considered, including the full life cycle of all materials used. More than 50% of the wood products used in construction were certified by the Forest Stewardship Council, and 40% of the building materials were manufactured within 500 miles of the project site. The project diverted the majority of its construction waste from the landfill through a rigorous recycling program. Built-in recycling collection locations promote recycling by lab occupants.

## 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 discharged back into these water bodies. More efficient use of water is an important feature of this laboratory renovation. Designers incorporated low-flow fixtures to maximize water conservation, resulting in a 38% annual reduction in potable water use.

## SITE AND TRANSPORTATION

According to the Energy Information Administration, transportation accounts for roughly 27% of total greenhouse gas emissions in the United States. The LSOG is located in a dense urban area with close proximity to public amenities. It is within a half mile of residential neighborhoods, and it is a quarter mile from Yale Shuttle stops and CT Transit bus lines. In addition, Yale parking strategies discourage automobile use by providing access to alternatives such as public transportation, car/van-pooling, and Zipcars.



### Architect

Svigals + Partners

### Total floor area

20,300 sq ft

### Opening date

February 2008

# Yale

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