

WIENER AUDITORIUM

GOLD

Taubman Building, 15 Eliot St., Cambridge, MA, 02138

The Wiener Auditorium is a 2,943 square foot space located in the Taubman Building of the Harvard Kennedy School of Government. The project scope includes the gut renovation of the student auditorium in order to enhance and update the features and technology of the facility.

As a multi-use auditorium and conference space, the project team gave particular emphasis to improvements in the lighting and HVAC systems. Located below-ground, the Wiener Auditorium has no direct access to daylight, therefore the project team faced the challenge of ensuring optimal levels of lighting and multiple lighting scenes were provided consistently throughout the space while also maintaining high levels of energy efficiency. Common area bathrooms within immediate proximity to the space were also upgraded to minimize potable water use. Upgrades included the use of dual-flush systems, low-flow urinals, and faucet aerator retrofits.



In line with the University-wide goal of reducing greenhouse gas emissions 30% below 2006 levels by 2016, inclusive of growth, the Kennedy School of Government and the project team were committed to achieving the highest levels of sustainability. Project decisions and choices were made with guidance from the Harvard University Green Building Standards, as well as the Leadership in Energy and Environmental Design (LEED) Rating System.

Wiener Auditorium

Photo: Green Building Services, 2011

PROJECT HIGHLIGHTS

LEED® Facts

Wiener Auditorium
Kennedy School of Government
2011



Location.....	Cambridge, Massachusetts
Rating System.....	LEED-CI v2009
Certification Achieved.....	Gold
Total Points Achieved.....	72/110
<hr/>	
Sustainable Sites.....	18/21
Water Efficiency.....	8/11
Energy and Atmosphere.....	23/37
Materials and Resources.....	6/14
Indoor Environmental Quality.....	9/17
Innovation and Design.....	4/6
Regional Priority.....	4/4

37% reduction in amount of water consumption below EPA 1992 Standards

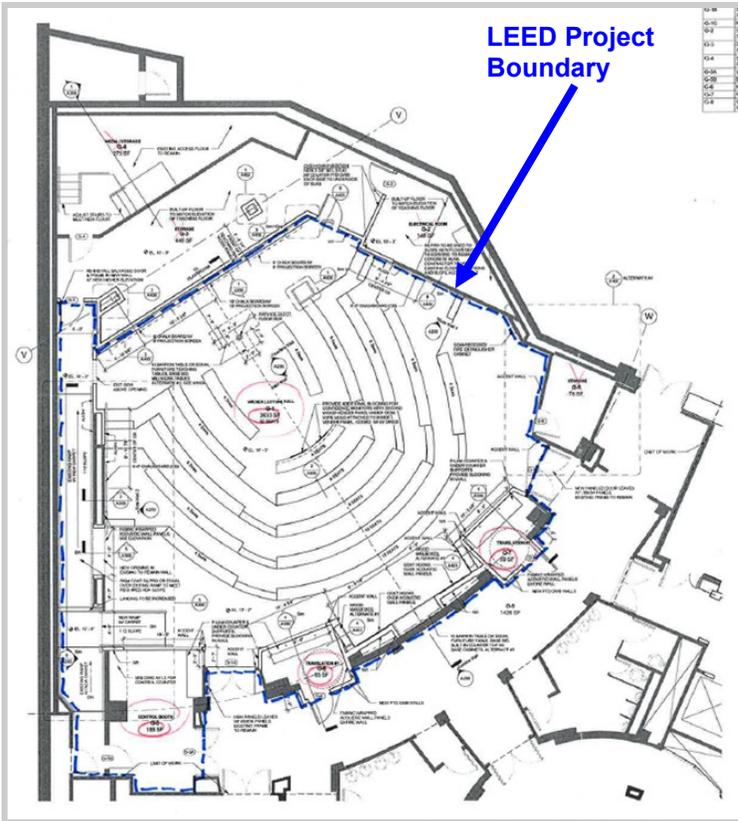
100% of the eligible equipment and appliances are Energy Star® rated

100% of the furniture in the project was reused from the original space



PROJECT OVERVIEW

WIENER AUDITORIUM FLOOR PLAN & LEED BOUNDARY



Wiener Auditorium

Photo: Green Building Services, 2011



Wiener Auditorium

Photo: Green Building Services, 2011

PROJECT TEAM

Owner	Harvard Kennedy School of Government
Project Manager	CSL Consulting, LLC
Architect	EYP Architecture & Engineering
Contractor	Lee Kennedy Co Inc
Engineer	EYP Architecture and Engineering
Commissioning Authority	MAW Consulting Inc.
Sustainability Consultant	Harvard Green Building Services



SITE



- To encourage alternatives to driving, all occupants of the Taubman building have access to Harvard's comprehensive **CommuterChoice Program**, which provides incentives and discounts for all modes of alternative transportation as well as carpooling and fuel efficient vehicles.
- The building is located within walking distance to the Harvard Square MBTA stop, several bus lines, and the Harvard University Shuttle.
- There are bicycle racks sufficient to serve not just the project space but the entire Taubman facility.
- The building is located in a dense urban area adjacent to Harvard Square, allowing occupants to walk and easily access amenities such as restaurants, banks, churches, and retail stores.



- ★ Taubman Building
- ★ MBTA Bus Stops
- ★ Harvard University Shuttle Bus Stops
- ★ MBTA Subway Station



Bike Racks

Photo: Green Building Services, 2011

WATER EFFICIENCY

Water efficient plumbing fixtures were chosen for all applicable plumbing fixtures within the scope.

Overall, these fixtures reduce domestic water consumption by **37%** below standard 1992 EPAAct levels.

Differences in the Flush & Flow Rates for EPAAct 1992 Standard Fixtures and the fixtures installed for the Wiener Auditorium Project

Fixture Type	Wiener Auditorium Flush & Flow Rates	EPAAct 1992 Standard Flush & Flow Rates
Water Closet [GPF]	1.27	1.6
Urinal [GPF]	0.13	1.0
Bathroom Sink [GPM]	0.5	2.2
Shower [GPM]	1.6	2.5
Kitchen Sink [GPM]	0.5	2.2

GPF - Gallons Per Flush GPM - Gallons Per Minute

FIXTURES IN WIENER AUDITORIUM PROJECT



Sloan WEUS-1000.1001
-0.13@
Low Flow Urinal



Sloan WES-212 Upper-cut@
Dual Flush Retrofit Handle



ENERGY EFFICIENCY

Harvard Kennedy School of Government has committed, along with Harvard University as a whole, to reduce greenhouse gas emissions 30% below 2006 levels by 2016, inclusive of growth. Therefore energy efficiency was a main goal of this renovation project.

MECHANICAL SYSTEMS

Occupancy and Temperature Sensors:

Occupancy sensors tied to the building's control system modulate the supply air and maintain temperature set-points, allowing both to be set back whenever spaces are unoccupied

Demand Control Ventilation: CO2 sensors in all high density spaces control the amount of outdoor air supplied. If there are fewer people occupying the space then less air is required, ultimately saving energy.

Direct Digital Controls: Digital controls tie into a building automation system (BAS) that allows for enhanced monitoring and operational control.

Variable Speed Drives: Fans supplying conditioned air are connected to variable speed drives to ensure that air is not oversupplied to occupied spaces.

ELECTRICAL SYSTEMS

Lighting Controls: A digital addressable lighting interface (DALI) system allows for sweep controls, time of day control, daylight harvesting, off hours zone control, occupancy sensors and dimming.

Lighting Fixtures: Energy-efficient and low-mercury fluorescent lamps were carefully chosen and strategically placed to reduce electricity consumption while maintaining adequate lighting levels for each type of space.

Plug Loads: Energy Star equipment was selected for all new equipment in the space.

Renewable Energy: Renewable Energy Certificates (RECs) were purchased from Sterling Planet (wind power) equivalent to 70% of the anticipated electricity over 2 years.

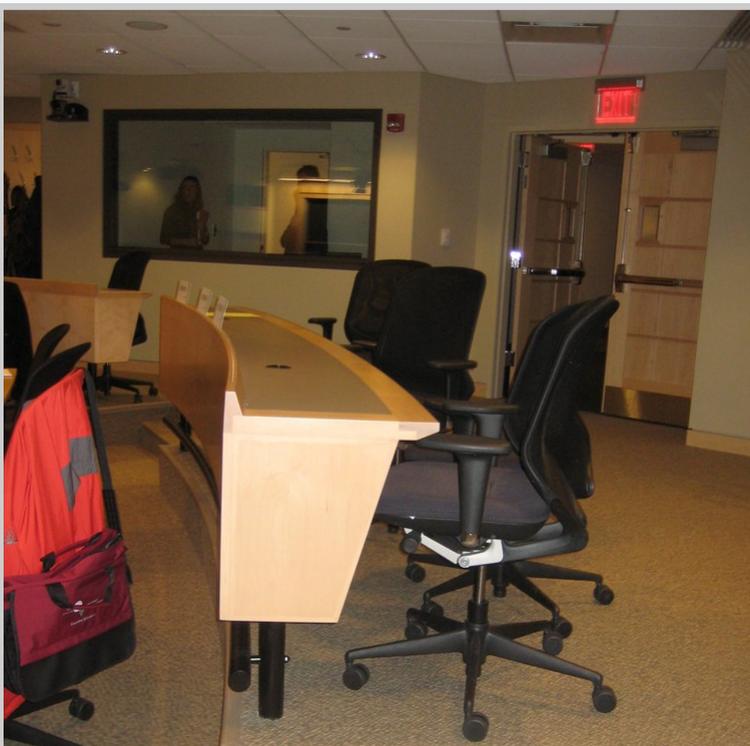


Photo: Green Building Services, 2011



Photo: Green Building Services, 2011

INDOOR ENVIRONMENTAL QUALITY

Harvard Kennedy School of Government is committed to providing a healthy indoor environment for all occupants. The project team was careful to prevent pollutant contamination during construction and to ensure the space is designed to promote healthy indoor air quality during occupancy.

Indoor Air Quality During Construction: A comprehensive indoor air quality management plan was implemented during construction to maintain healthy indoor air quality for workers and future occupants. All grills and vents were sealed and ductwork remained sealed until it was installed and covered. Fans were used to exhaust air directly to the outdoors, and building materials were kept sealed and off the grounds until they were installed.

Thermal Comfort Survey: Occupants will be surveyed about their thermal comfort once per season. The operations team will adjust the heating or cooling in the project space as needed.

Only Materials with **Low or No VOC Content** were used in the Wiener Auditorium project. Volatile Organic Compounds (VOCs) are chemical compounds and known carcinogens found in many construction materials that are considered detrimental to indoor air quality. Reducing the use of VOCs whenever possible improves indoor air quality and consequently occupant health and productivity.

- > **Composite Wood and Laminate Adhesives** used in the project contain no added Urea Formaldehyde
- > **Adhesives and Sealants and Paints and Coatings** - See chart below for specific products used:

Product Category	Product & Manufacturer	VOC Content (g/l)	VOC Limit (g/l)	Standard
Paints & Coatings	> Benjamin Moore Ecospec Eggshell	0	150	Greenguard®
	> Agualente Waterborn Pre-Cat Wood Lacquer	75	550	Greenguard®
	> Benjamin Moore Ecospec WB Interior Primer	0	200	Greenguard®
Adhesives & Sealants	> MAPEI ECO 575	0	50	SCAQMD Rule # 1168
	> Hardcast Duct Seal 321	93	420	

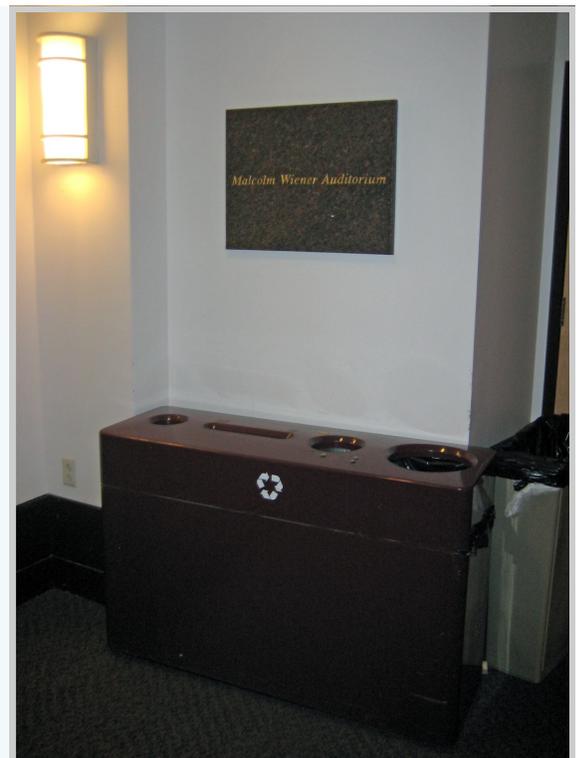
Construction IAQ Measures Implemented During Construction

HVAC Protection
The contractor sealed all supply and return air openings with plastic during demolition and construction. All new duct work was also sealed prior to installation.



Green Housekeeping
Harvard Kennedy School of Government has made a commitment to using green cleaning processes in all of its buildings, including the Wiener Auditorium.

This includes the use of Green Seal certified cleaning solutions, 100% recycled content toilet tissue and paper towels, portion control chemical dispensers, staff training.



MATERIALS & WASTE

Selecting environmentally preferable materials and minimizing the amount of construction waste sent to landfill was important to the project. For the additional materials purchased, the project gave preference to low-emitting materials with recycled content and local manufacturing.

30% of the total material value consists of products salvaged or manufactured locally.

88% of the on-site generated construction waste was diverted from the landfill.

18% of the total value of materials used in the project consist of materials with recycled content.



Photo: Green Building Services, 2011

ENVIRONMENTALLY PREFERABLE MATERIALS IN WIENER AUDITORIUM, TAUBMAN BUILDING

- > Wood Doors (Harring Doors)
100% pre-consumer, 0% post-consumer
- > Ultima Acoustical Ceiling Tiles (Armstrong)
67% pre-consumer, 4% post-consumer
- > Carpet (Tandus)
40.8% pre-consumer, 10% post-consumer
- > Door Closers (LCN)
17% pre-consumer, 29% post-consumer

Examples of regional materials used in project:

Material Name	Manufacturer	Distance between project & Manufacturer (mi)
Metal Framing	Dietrich	198
Hollow Metal Frames	De la Fontaine	213
Drywall	Lafarge	164

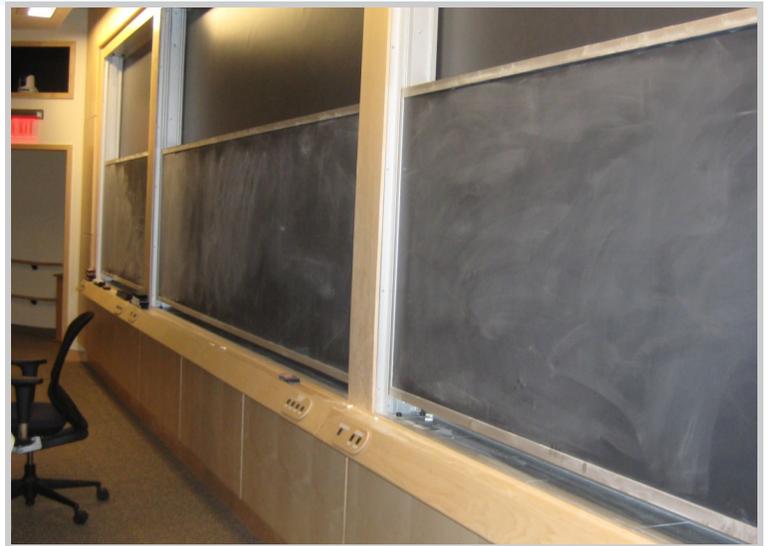


Photo: Green Building Services, 2011

ADDITIONAL RESOURCES

- > Harvard Kennedy School of Government: <http://www.hks.harvard.edu>
- > Harvard Kennedy School's Sustainability News: <http://green.harvard.edu/hks>
- > Harvard Green Building Services: <http://green.harvard.edu/green-building-services>
- > Harvard Green Building Resource: <http://green.harvard.edu/theresource>
- > Follow Green Building Services: [@Harvard_GBS | Facebook](#)