

1. Category entered:

Place of learning: K-12 school

2. Describe the building location with respect to local and regional resources of its context

The MATCH school sits on a busy stretch of Commonwealth Avenue in Allston, adjacent to the Boston University campus. Students and faculty commute primarily by the MBTA Green Line trolley and express bus, both of which stop at the corner. The school is served by all major Boston utilities.

3. List the key sustainable design features

- Adaptive reuse of existing building
- Furnished primarily with second-hand furniture
- Limited parking: only six spaces forces use of readily available public transit

- 20 kW Photovoltaic system produces 14% of facility's electricity
- Daylighting with Solarban high-shading windows to minimize excess solar gain
- Waste heat from interior space helps heat building perimeter in winter
- Super-insulated R-30 roof with combination of 4-inch rigid, plus 2-inch rigid insulation on back of rooftop PV system
- LCD laptops purchased rather than CRT terminals to reduce energy consumption
- Building uses 43% less energy than minimum code requirement

- Highly absorptive fiberglass acoustic ceiling panels
- Cooling tower rather than chiller to reduce noise in neighborhood (also an energy saver)
- Low noise coefficient of 26
- DBA 38 meets new ANSI standard for high school students

4. Describe the relationships between the formal, programmatic, and high-performance design strategies and the site—that is, how is the green architecture linked to its site context

The MATCH School is an adaptive reuse of a 1919 Lincoln Motorcar Company showroom that had historic value. Its transformation into a media and technology high school required preservation of historic elements such as decorative support columns and a central stair with marble treads and wrought-iron railings, as well as the installation of technology infrastructure,

subdivision of space into small classrooms and seminar rooms, as well as lockers and student bathrooms.

The greenest aspect of the renovation is the re-use of as much as possible of the existing building, including the exterior masonry, structure, and floor slabs. A high-performance classroom environment was provided with excellent daylighting and improved acoustics, augmented with environmental curriculum and data acquisition systems associated with the PV system. Window openings were restored and during the day, many classrooms have sufficient natural light that artificial lights are not required. The expansive glazing also connects students with their urban context, and also provides busy Commonwealth Avenue with a glimpse of what MATCH is all about.

5. Summarize the building program and program-specific features

The program calls for a charter high school for 160 students in grades 9-12. The school's unique mission includes extensive use of media and technology to enhance the rigorous college-preparatory instructional program. The program calls for 8 general classrooms, two computer labs, a media center, small break-out spaces to accommodate the school's morning advisory sessions, a central assembly/dining space, and faculty and administrative offices.

6. Provide the building's gross square footage, (if mixed use, note approximate sf/use)

Total: 31,600 sf (includes 3rd floor commercial space and ground floor retail)

MATCH School: 21,000 sf (1st and 2nd floor)

7. Provide project cost (approximate total and per sf)

\$4,700,000 (total construction cost)

\$149/sf (total building)

8. Provide performance information, include BTUs/sf/year, and any additional information, measured or simulated

- 92,377 BTUs/sf/year; simulated with Power DOE energy modeling software
- Gas and electronic utility rebates of \$18,547

- Electrical usage reduced by 95,586 kWh for a final electrical usage of 123,601 kWh/year, of which 19,731 kWhs are projected to be created by the PV system

9. Outline design intentions and methodological approach

The goal was to create a learning environment that

- supported the college preparatory mission of the charter school on a tight budget
- incorporated media and technology into hands-on instruction
- preserved and restored a Commonwealth Avenue landmark
- incorporated high-performance design practices and enhanced learning environments

The approach to the project focused on delivering the most appropriate learning environment to fulfill MATCH's educational goals, and in the process assuring the preservation of historic building elements and creating a high-performance school facility. Through a collaborative process that involved architects, engineers, MATCH administration, and the MTC, solutions were developed that successfully addressed all project goals.