Chartwell School
SEASIDE, CALIFORNIA

Project Narrative

The shared vision for the new Chartwell School campus was to create an exceptional, high-performance learning environment for children with learning differences, including dyslexia. Chartwell serves 1st through 8th grade students in the greater Monterey Bay area.

The goal was a campus that integrated proven strategies to improve learning outcomes and that would function as a teaching tool about sustainability, all while dramatically reducing environmental impacts. Sited on a hill overlooking the Monterey Bay, this project seamlessly blends the elements of site, program and environmental conservation. All design and construction decisions were made with those 3 factors in mind.

As Douglas Atkins, Chartwell’s Executive Director, recently stated, “Our LEED Platinum campus models how improved academic outcomes and responsible resource stewardship build on each other.”

It is EHDD’s hope that a new generation of children will be inspired by the possibility of a wonderfully built environment that in turn sustains and restores our natural environment.

The key ideas for the project were:

1) To create the best possible learning environment by providing exceptional daylighting, views, indoor air quality, and thermal comfort;

2) To make the sustainable design strategies a visible part of the student’s education and develop the site as a teaching tool with natural drainage and native and food producing plants;

3) To achieve a high level of sustainable design to inspire and excite the community and generate support and private funding;

4) To reach net zero electricity use through exceptional efficiency and then adding PV’s to generate the remaining electricity needed; and

5) To reach these goals with only a modest cost premium.

All of these goals are intertwined in the resultant form of the project. Tall north facing windows and clerestories that provide excellent daylighting support the net zero electrical goal and improve student outcomes. Sloping shed roofs for good PV orientation and an extensive measurement and verification system support optimal function of the building and provide learning opportunities for the students. Radiant heat provides a quiet learning environment and reduces the size of mechanical rooms. Framing the structure at 2’o.c. reduces the amount of material used on the project and also saves overall construction cost. These are just a few examples of how the five key ideas formed the basis of the design.

The project involved extensive research embodied in a published Case Study on Design for Deconstruction (DfD) funded by an EPA research grant.

The project is sited on the decommissioned Fort Ord military base. Fort Ord is designated as an EPA Superfund site due to the hazardous contaminants and unexploded ordinance often found on military bases. The school site is a small part of the enormous redevelopment effort overseen by the Fort Ord Redevelopment Authority. This effort includes extensive connected habitat areas, as well as developed educational and commercial zones.

The school is an integral part of the Seaside community and their mission includes a substantial outreach program to develop awareness about the challenges of dyslexia. The Multi-purpose building allows the school to open their doors to the community to host symposia and other events. The environmental features also draw visitors from the surrounding community for tours.
The school serves a specialized group of students that come from all over California’s central coast region. There are few alternatives to automobile travel so the school organizes a carpooling program for the students.

Percent of population not using single occupant vehicles = 64%

Number of parking spaces per person = .29 (43/150)

To preserve the large native coast oak ecosystem surrounding the campus, Chartwell’s buildings and site development are located entirely within the footprint of the Officer’s Club building and parking lot once housed on the site. The site plan is developed around a courtyard—only the south half of which was built in Phase I—to take advantage of the outdoor spaces and climate, and provide some protection from cool ocean breezes.

The design carefully accommodates existing tree stands, including tree islands in the former parking lot. Most of the new landscaping is low water native species, including Monterey Cypress, California Live Oaks, and California Buckeye. The school is developing a curriculum around the native ecosystem, as well as an experimental science garden, organic fruit trees and planting beds, all of which are integrated into the site.

The climate in Monterey is very mild and the mechanical systems were designed to take advantage of the environment, using natural ventilation in the majority of the spaces. The fog in the area also contributes to the rainwater catchment system and fog catchers are incorporated into the site for educational purposes.

Chartwell has also developed a natural trail that meanders around the edges of the built campus. During the creation of the trail care was taken to preserve the habitat of the Dusky-Footed Wood Rates that are located in the woods surrounding the building. Chartwell lives in harmony with the wild turkeys, deer and other flora and fauna that surround them and look for opportunities to use their environment as a teaching tool.

**Additional Information**

This project was chosen as an AIA Committee on the Environment Top Ten Green Project for 2009. Please visit www.aiatop10.org and click on the Chartwell School project link for more detailed information and presentation boards.
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CENTER FOR THE BUILT ENVIRONMENT • LIVABLE BUILDING AWARDS 2009
Chartwell School
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SUSTAINABLE STRATEGIES
CHARTWELL SCHOOL

1. low ventilation intake
2. high ventilation exhaust
3. spectrally selective glazing in thermally broken frame
4. structural insulated panels
5. operable skylight with integral shading
6. photovoltaics
7. radiant slab heating
8. certified wood framing with modular design - walls at 24” oc, roof joists at 48” oc
9. gutters drain to rain water cistern
10. storm water basin for 100% infiltration
11. rainwater collection cistern
12. native landscaping

LOW VENTILATION INTAKE
HIGH VENTILATION EXHAUST
SPECTRALLY SELECTIVE GLAZING IN THERMAL BROKEN FRAME
STRUCTURAL INSULATED PANELS
OPERABLE SKYLIGHT WITH INTEGRAL SHADING
PHOTOVOLTAICS
RADIANT SLAB HEATING
CERTIFIED WOOD FRAMING WITH MODULAR DESIGN - WALLS AT 24” OC, ROOF JOISTS AT 48” OC
GUTTERS DRAIN TO RAIN WATER CISTERNS
STORM WATER BASIN FOR 100% INFILTRATION
RAINWATER COLLECTION CISTERN
NATIVE LANDSCAPING
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MEASURED ENERGY USE (kbtu/SF)

0 20 40 60 80 100 120 140

MEASURED ENERGY USE OF 100 LEED CERTIFIED BUILDINGS
(Excluding Labs and other high energy use buildings)

CERTIFIED  SILVER  GOLD  PLATINUM  CHARTWELL SCHOOL
ANNUAL ELECTRICITY USE - (kWh)

Benchmark Schools
- Net Energy: 73,000 kWh

Modeled
- Net Energy: 41,000 kWh

Measured
- Net Energy: 34,000 kWh

PV Production
- Net Energy: 41,000 kWh
- Excludes Natural Gas

- Night Lighting - 15,300 kWh
- Vending Machine & Refrigerator - 5,800 kWh

Excludes Natural Gas
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Total Electricity Use For Specific Time Periods

- Multi-purpose HVAC
- Multi-purpose Tech Center
- Multi-purpose Plugs
- Multi-purpose Lighting
- Classroom HVAC
- Classroom Plugs
- Classroom Lighting

Electricity Use [kWh]

- Total All Hours
- Week Days
- Week Ends
- Daytime Week Day
- Nighttime Week Day
- Daytime Week End
- Nighttime Week End
- Morning Week Day
- Afternoon Week Day
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Project Team

Architect of Record: EHDD Architecture
Construction Manager: Vance Brown Company
Contractor: Ausonio Inc.
Structural: Tipping Mar + Associates
Mechanical: Taylor Engineering
Electrical: The Engineering Enterprise
Civil: Sherwood Design Engineers
Acoustics: Charles M. Salter Associates
Cost: Oppenheim & Lewis, Inc.
Environmental: Pacific Municipal Consultants
Geotechnic: Stevens, Ferrone & Bailey Engineering Company
Landscape: GLS Landscape Architecture
Lighting: Benya Lighting Design

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