

## ***Bright Horizons -University of Chicago Child Care Center East***

### **Sustainability Case Study**

Located at 5824 S. Stony Island Drive near the University of Chicago Medical campus, the Bright Horizons Child Care Center East project has achieved LEED Gold Certification for Building Design and Construction, version 3. This facility has incorporated numerous sustainable features into the project to make it a success. The 13,000 sf one story child care facility sits on a tight location that is bordered on two sides by taller buildings. Bright Horizons, the tenant in the facility, has a dedication to sustainability, and incorporates that both into their building design and their curriculum.

#### **Sustainable Site Features**

- During construction implemented Construction Activity Pollution Prevention Plan to facilitate sedimentation and erosion control measures and keep all contaminants from exiting site.
- Built on previously developed site, in a dense area that encourages pedestrian traffic and use of public transportation
- Minimal parking provided on site
- Restoration of habitat achieved through the green roof and extensive native landscaping on the site.
- Green Roof, landscaping, and permeable pavements all help to treat and control quantity and quality of storm water on site. Portions of the site are permeable accommodating infiltration of water into the soils, and removing a percentage of total suspended solids from storm water runoff through storm water management plan.
- Site utilized reflective roofing, paving and walkways on site to help reduce the urban heat island effect.

#### **Water Efficiency**

- 20.86% of water use reduction achieved through the use of low flow lavatory faucets, low flow water closets, urinals, and kitchen sinks.
- 62.62% reduction of potable water usage for landscaping achieved through the use of drought resistant plants, native species, and conservative irrigation practices and systems.

#### **Energy & Atmosphere**

- Exceeded threshold for baseline pre-requisite on energy consumption and usage. Project reduced energy usage by 31.23% through optimum energy performance design and product selection.
- Enhanced commissioning was utilized to maximize energy savings and ensure proper training and operations for equipment.
- Energy efficient building envelope including highly insulated white reflective roof.

- Installed measurement and verification BAS (Building Automation Systems) systems for continuously monitoring energy usage of cooling load, air/water economizer and air distribution system
- Energy efficient lighting was achieved through the use of efficient bulbs and fixtures. While occupancy sensors and lighting controls helped to further reduce the lighting load.
- Environmentally friendly refrigerants in were utilized in the HVAC equipment
- Supported renewable energy sources by engaging in a contract with Renewable Choice Energy to purchase REC's (Renewable Energy Certificates) equal to 35% of the building's annual energy consumption for two years. This encourages utilization and further research and development of renewable energy sources. The Green-e Certified Clean Source REC's were comprised of wind, solar, small hydro, gaseous biomass, non-gaseous biomass.

## **Materials and Resources**

- Tenant committed to ongoing recycling of glass, paper, plastic, and metal for ongoing operations. Facility has dedicated areas for recycling, and the children are taught to recycle and sort their waste.
- 124.02 tons of the construction waste used on the project was diverted from the landfill to recyclers. This equates to 90.2% of the total construction waste on the project.
- Over 20% of the construction materials on the job contain pre and post-consumer recycled content
- Over 35% of the construction materials on the project were both harvested and manufactured within 500 miles of the project.
- Numerous products were used on the project that have been certified as sustainable materials by third party agencies. The Bark House siding and Insulating Glass units were Cradle to Cradle certified while the Carpet Tiles from Interface hold an Environmental Product Declaration. The Tree Cookie Flooring, though not contributing to the LEED seeking status of the project, turned a native invasive tree species into a usable product.

## **Indoor Environmental Quality**

- Smoking is forbidden in building and on property- thus reducing exposure to ETS (Environmental Tobacco Smoke).
- Implemented Indoor Air Quality Plan for the construction and pre-occupancy phases that exceeded SMACNA IAQ guidelines through the use of filtration media, careful storage protection of absorbent materials, air quality testing and replacement of filtration media prior to occupancy. Building was flushed out with outdoor air for 45 days with 3500 cubic per each square foot of floor space prior to occupancy and continuing after occupancy until a total of 14,000 cubic feet of air per square foot was delivered to the space to cleanse the building of any contaminants, emissions, and VOC's.

- Installed low VOC (volatile organic compound) and NAUF (no added urea formaldehyde) content materials throughout the project including adhesives, sealants, paints, flooring, and composite wood materials.
- Indoor Chemical and Pollutant control – HVAC equipment was designed with high efficiency MERV 13 filters to filter out contaminants prior to air delivery. Walk off mats utilized to trap contaminants before they enter the space. Areas where contaminants are present – copy areas and janitorial closets were designed with separate exhausts.
- Systems were designed with thermal comfort and control for occupants in mind
- Daylight and Views –project was designed to maximize daylight and views for occupants. Over 77% of all regularly occupied spaces met daylighting requirements and over 96% of occupants have a direct line of site to view outside.

### **Innovation in Design Approach**

- A Green Cleaning Program that utilizes Green Seal Certified cleaning products and machinery was instituted at the facility. This sustainable approach to building cleaning will provide better indoor air quality for all occupants and users of the facility.
- A Green Education Plan was developed to inform visitors, occupants, and users of the building of the unique sustainable aspects of this program. Some of the components of this plan are sustainability curriculum for the children in the child care facility and sustainability information, case study and photograph's on the facilities website.
- Exemplary performance was achieved in surpassing the 30% threshold for materials harvested and manufactured within 500 miles of the project
- Exemplary Performance was also achieved for maximizing open space
- Exemplary Performance earned for Stormwater Design Quantity Control

### **Regional Priority**

- The project achieved three Regional Priority credits, by achieving three credits on the LEED scorecard that were deemed important for projects in this region.
- SS4.1 –Alternative Transportation Public Transportation Access
- SS6.2- Stormwater Design Quality Control
- SS7.2 – Heat Island Effect Roof

### **Project Team:**

Owner: The University of Chicago

Tenant: Bright Horizons Family Solutions

Architect: Wheeler Kearns Architects

Engineers: Primera Engineers, Ltd; Thornton-Thomasetti Engineers

Contractor: Leopardo Companies, Inc.

Commissioning Agent: Sebesta Blomberg with Design Verification International