

# SHOREBIRD PARK NATURE CENTER GREEN BUILD SOLUTIONS

160 University Avenue, Berkeley, CA 94710

City of Berkeley  
 Department of Parks, Recreation, & Waterfront  
 2180 Milva Street, 3rd Floor  
 Berkeley, CA



## GREEN BUILD DESIGN:

### Building Heating .....

- Solar Hot Water Heating System

### Building Cooling .....

- Natural Ventilation System

### Rainwater .....

- Rainwater Harvesting System

## GREEN DESIGN ENVIRONMENTAL BENEFITS:

Solar heating can reduce and sometimes eliminate the use of energy from sources that pollute the environment. See the informational sheet titled “Shorebird Park Nature Center Solar Hot Water System.”

On a warm day buildings are often hotter inside than the air outside. Natural ventilation is a method of circulating cool air through a building. Cool air is pulled into a room via low louvers. As this air warms, it rises, and is eventually released through high placed windows.

Rainwater harvesting is the collection of rainwater for use during the dry season. This system reduces the environmental impact caused by the collection and distribution of domestic water. See the informational sheet titled “Shorebird Park Nature Center Rainwater Harvesting System”.

## GREEN BUILD MATERIALS:

### Concrete Mix .....

- Fly Ash

### Window Glazing .....

- Low E2
- 1” Insulated glass

### Window Frames .....

- Thermally Broken

### Carpet .....

- [Patcraft “Homerom II”]
- Eco Solution Q Premium Branded Fiber
- Ecoworx Backing

### Linoleum .....

- [Armstrong Marmorette]
- Low-Emitting Resilient Flooring
- Recycled Content 10% or 20%
- Rapidly Renewable Resource

## GREEN MATERIAL ENVIRONMENTAL BENEFITS:

Fly ash is generally captured from the chimneys of coal-fired power plants. The reuse of fly ash helps to reduce landfill waste. It can be reused to replace up to 30% by mass of Portland cement—the binding material in a concrete mix. Additionally, fly ash increases the strength, durability and chemical resistance of the concrete.

Solar control glass, also called Low E2, is a good glass for hot days because, in addition to improving the insulating ability of windows, it also limits solar heat gain by blocking passage of infrared and some ultraviolet rays. When compared to tinted window coatings, solar control glass allows a higher level of visible light to pass through a window with less solar heat gain reduction.

Aluminum window frames are more durable in the harsh ocean environment, but metal is a very poor insulator. A thermal break is a concealed band of insulating, high-density plastic that separates the outer metal frame from the inner metal frame. Thermal breaks can significantly reduce the transfer of hot and cold temperatures between the interior and exterior of the window.

Eco Solution Q Premium Branded Fiber with 25% Recycled Content Ecoworx Backing is 100% PVC free. Eco Solution Q fiber and EcoWorx backing are among the first Cradle to Cradle products in the world. Here’s how it works: Raw Materials are used to make a product. That product gets purchased and used. After it has served its useful life, that product gets broken down into raw materials again and used to make the very same kind of products.

Linoleum is a floor covering made from renewable materials such as solidified linseed oil (linoxyn), pine rosin, ground cork dust, wood flour, and mineral fillers such as calcium carbonate, and is most commonly backed with burlap or canvas.



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<p><b>Tackboard</b> .....</p> <p><b>[Chatfield-Clarke]</b></p> <ul style="list-style-type: none"> <li>- Woven with 100% Polyolefin</li> </ul>	<p>Woven with 100% Polyolefin, a nonallergenic material that will not mildew, rot, or support the growth of bacteria.</p>
<p><b>Suspended Acoustic Ceiling</b> .....</p> <p>Recycled Content</p>	<ul style="list-style-type: none"> <li>- Suspended System Minimum 25%</li> <li>- Panels: Low-Emitting</li> <li>- Panels: 79-85% Total Recycled Content</li> </ul>
<p><b>Cabinets</b> .....</p> <p><b>[David M. Bertino Manufacturing, Inc.]</b></p> <ul style="list-style-type: none"> <li>- Veneer Core Plywood: Certified as Sustainably Harvested by Organizations Accredited by the Forest Stewardship Council (FSC)</li> </ul>	<p>Forest Stewardship Council (FSC) principles:</p> <ul style="list-style-type: none"> <li>- Prohibit conversion of forests or any other natural habitat</li> <li>- Prohibit the use of hazardous chemicals</li> <li>- Identification and appropriate management of areas that need special protection (e.g. cultural or sacred sites, habitats of endangered animals or plants)</li> </ul>
<p><b>Metal Roof</b> .....</p> <p><b>[Magna-Loc Panel]</b></p> <ul style="list-style-type: none"> <li>- ENERGY STAR Partnership</li> </ul>	<p>Magna-Loc Panel meets Energy Star Requirements for emissivity and reflectivity. ENERGY STAR partnership offers a proven energy management strategy that helps in measuring current energy performance, setting goals, tracking savings, and rewarding improvements.</p>
<p><b>Lighting - Indoors</b> .....</p> <p><b>[Finelite]</b></p> <ul style="list-style-type: none"> <li>- Occupancy sensor</li> <li>- Automatic Daylighting Control Certified by Energy Commission</li> </ul>	<p>The major “sustainable” benefit from daylighting is from associated energy savings. Occupancy sensors turn off the lights when no one is using the room. Automatic daylighting controls adjust the light level in response to daylight levels. Such lighting control measures have been shown to result in savings of as much as 75% of lighting energy.</p>
<p><b>Lighting - Outdoor</b> .....</p> <p><b>[Kenall]</b></p> <ul style="list-style-type: none"> <li>- Full Cutoff</li> <li>- Light Pollution Reduction</li> </ul>	<p>Full cutoff fixtures are those that illuminate mostly downward, thus reducing light pollution. Light pollution is light spilling beyond where it is needed. Decreasing light pollution increases access to the night sky while also improving nighttime visibility and lessening the disturbance to nocturnal creatures.</p>
<p><b>Fiber Cement Siding</b> .....</p> <p><b>[JamesHardie “HardiPlank Lap Siding”]</b></p> <ul style="list-style-type: none"> <li>- Non-Asbestos Material</li> </ul>	<p>HardiePlank lap siding is a non-asbestos material offering low maintenance and an unmatched resistance to weather damage in wet and humid climates.</p>
<p><b>Paint</b> .....</p> <ul style="list-style-type: none"> <li>- Low VOC</li> </ul>	<p>Low - VOC and No-VOC (Volatile Organic Compound) paints are less harmful to human and environmental health than other paints because they contain fewer groundwater-polluting and ozone-depleting contaminants.</p>
<p><b>Landscaping</b> .....</p> <ul style="list-style-type: none"> <li>- Native Plants</li> <li>- Mulch from and Tree Clippings</li> <li>- Cardboard Sheet Mulch</li> <li>- Drip Irrigation</li> </ul>	<ul style="list-style-type: none"> <li>- Native plants provide suitable habitat for native species of butterflies, birds, and other wildlife.</li> <li>- Mulch keeps moisture in the ground longer and reduces the intrusion of unwanted plants. Shredded tree clippings are a good local source of mulch.</li> <li>- Sheet mulching is a way to remove unwanted plants without the use of herbicides. Rolls of cardboard sheet mulch are laid on the ground to control the growth of unwanted plants by eliminating the plant’s access to air and light.</li> <li>- Drip irrigation is an irrigation method which saves water by allowing water to drip slowly to the roots of plants, either onto the soil surface or directly onto the root zone, through a network of valves, pipes, tubing, and emitters. In native landscaping it is usually used temporarily, just until the plants become established and can survive on the latent moisture in the ground and the rain and fog.</li> </ul>

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## Construction Method .....

- Modular Construction
- Factory Built Off-site

Modular construction provides an alternative to building at the site. This method can reduce cost and make green buildings more affordable. Building materials are used more efficiently in a factory setting, reducing waste.

Below are pictures of the building being placed at the site.

