

PORTOLA VALLEY TOWN CENTER

PHOTOGRAPHS: CÉSAR RUBIO

RECYCLED MATERIALS

MATERIAL	PRE-CONSUMER	POST-CONSUMER
Carpet tile	39%	
Ceramic tile	21%	
Toilet partitions	30%	
Ceiling tile	77%	
Linoleum	45%	
Structural steel		95%
Insulation: cotton	85%	
Insulation: cellulose		80%
Gypsum board		10%

Concrete

All of the concrete used a high slag mix (a waste product of the steel industry). The slag replaced 50 percent of the Portland cement, resulting in approximately 51 percent reduction in greenhouse gas emissions compared to standard concrete. The high slag mix creates a much stronger concrete than conventional mixes.

Non-toxic, Low VOC materials

Materials were selected throughout the project for their low VOC and non-toxic attributes including zero VOC paints sealants and formaldehyde free adhesives.

All paints, coatings and sealants

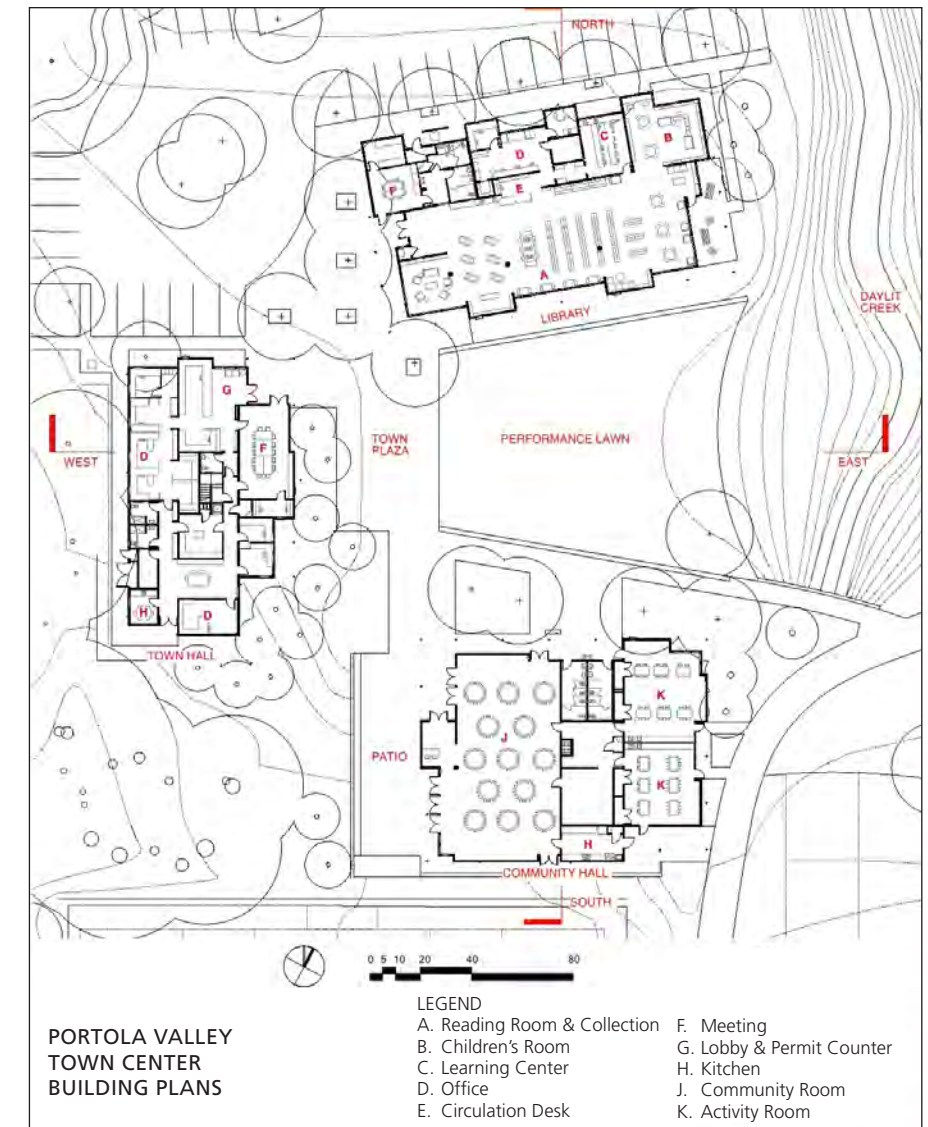
meet or exceed the air quality standards of the Southern California Air Quality District, and are formaldehyde-free.

Composite wood products have no added urea-formaldehyde.

THE PORTOLA VALLEY TOWN CENTER weaves together building, open space and native landscape into a civic center that meets the town's primary goals: compliment the natural beauty of Portola Valley in the greenest way possible.

The center serves functional needs – town governance, library services, community gathering and recreation in a variety of indoor and outdoor spaces – while respecting the landscape and the town's low-key aesthetic. This mutual respect between the built and the unbuilt, the formal and the informal, on this truly unique site makes the town center most memorable.

The buildings are tucked between redwoods and against an old walnut orchard. Together they frame a plaza and performance lawn that serve as the town's living room. The newly restored creek at the east end of the lawn literally and symbolically connects the Portola Valley community to nature and open space right in the heart of its town.



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SPECIAL THANKS TO THE TOWN OF PORTOLA VALLEY, THE SAN MATEO COUNTY LIBRARY AND TO OUR PROJECT TEAM:

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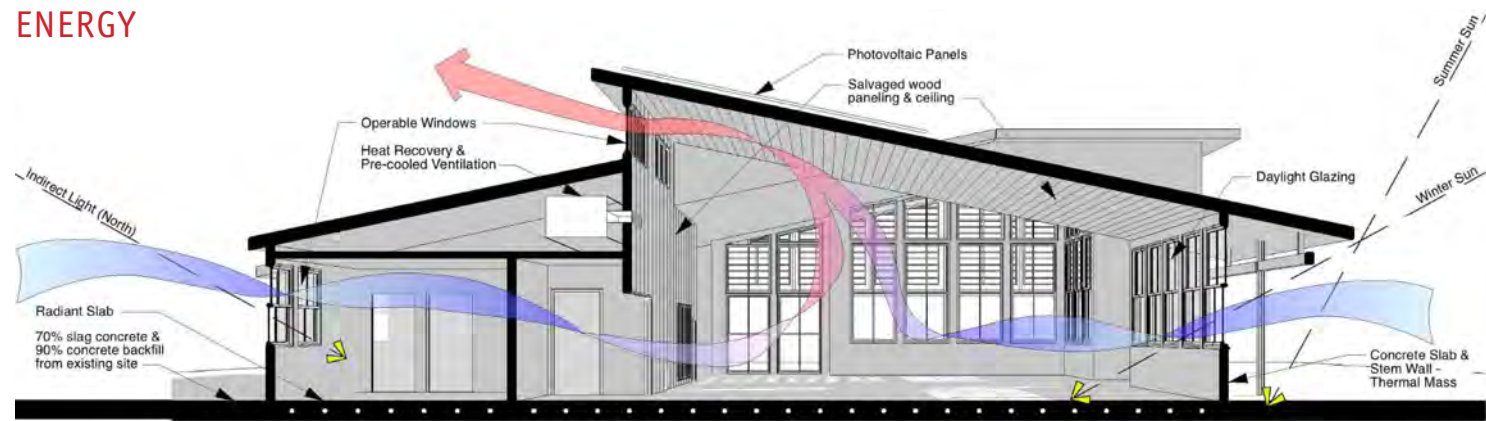
ELECTRICAL ENGINEER
Integrated Design Associates

LIGHTING DESIGNER
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ENERGY & PV CONSULTING
High Sun Engineering

INTERIOR DESIGN
Staprans Design and Pivot Interiors

ENERGY



Site Design

The design consolidated civic and community services on one site, providing a venue for all major town-related activities. This combination of civic, educational, cultural and recreational activities, while pragmatic and efficient, is also emblematic of the way the town functions and provides for a variety of casual and formal meeting spaces. It also allowed the town to reduce the buildings' footprint by 20 percent.

Bioclimatic Design

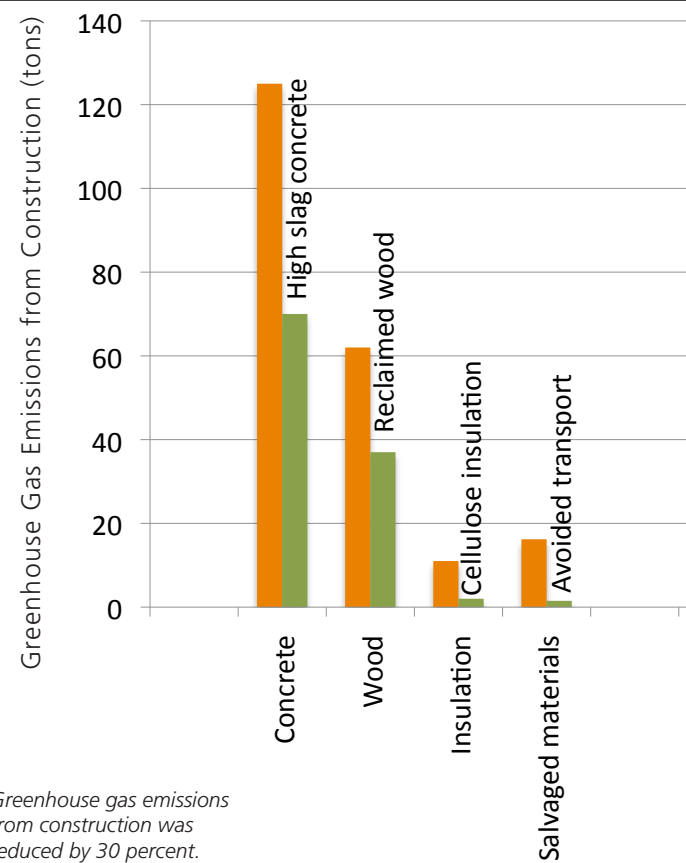
Buildings are oriented to reduce heat gain in the summer months and take advantage of solar gain in the winter months. Buildings incorporate daylighting and natural ventilation strategies, thermal mass, and exterior sunshades.



Wood sunscreens control solar heat gain and glare.



	AREA SF	% OF TOTAL	AREA SF	% OF TOTAL	
Buildings	25,000	5.1%	Buildings	20,500	4.2%
Paving	165,900	33.9%	Paving	146,400	29.9%
Play Fields	96,000	19.6%	Play Fields	100,000	20.4%
Landscape	203,000	41.4%	Landscape	223,000	45.5%



Greenhouse gas emissions from construction was reduced by 30 percent.

Building Envelope

Buildings are insulated with blown-in cellulose insulation; reflective metal roof and metal clad windows reduce heat gain.

Heating, Ventilation & Cooling

A variety of small simple systems were employed to heat, cool and ventilate the buildings. The Library and Town Hall are heated with radiant floors; the Community Hall is heated with an efficient gas fire furnace. All buildings have air handlers equipped with heat recovery units and are cooled with SEER 19, highly efficient, small-scale compressor cooling units that pre-chill the ventilation air. Night time ventilation and ceiling fans and provide additional cooling.

Renewable Energy

Photovoltaic panels mounted on the roofs of the Library and Community Hall and Maintenance building supply a total of 76 kilowatts of electricity. Energy models indicate that the PV's will provide a minimum of 25 percent of the Town Center's electrical power needs. Energy models also predict that the buildings will reduce energy use by more than 53 percent.



MATERIALS

Materials were selected to minimize life cycle impacts. Structural and exterior finish materials were chosen for maximum durability and low maintenance; interior finish materials were selected to ensure high indoor air quality; materials were selected to improve building performance: concrete added thermal mass, blown-in insulation reduced infiltration, and high performance glazing reduced heat gain.

Deconstruction

The existing buildings were carefully dismantled and 90 percent of the materials were recovered for reuse in the new Town Center. Concrete and masonry materials were ground up on site and used as base rock for roads and building pads. Reinforcing steel and other metals were separated and recycled. More than 25,000 board feet of wood was salvaged, remilled, and used in the new buildings.

Wood

Fifty percent of the wood used in the project is FSC certified. The buildings were framed with FSC lumber and plywood. The glulam beams are 40 percent FSC lumber.

Twenty-five percent of the wood used was reclaimed. 2x6 roof decking from deconstructed buildings was remilled into 1x6 interior paneling and 1x3 ceiling slats; old glulam beams became countertops; Alder trees, felled to make room for the new baseball field, became wood columns. Exterior siding is salvaged redwood from northern California. Wood sunscreens are Alaskan Yellow Cedar, chosen for durability and color. It weathers to a light silvery gray, reflecting daylight into the buildings.

The remaining 25 percent was engineered wood made from small, fast growing trees. Engineered wood uses 30 percent less fiber than solid lumber.

Local Eucalyptus, cleared for fire safety, was used for flooring in the Multi-purpose Room – one of the first commercial applications.

