

# Geosynthetics

**Under the  
green roof  
in northern California**

**Reviving**  
the Wrigley Reservoir  
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from the GMA Techline

## Strength without density: Geofoam at work on the CAS green roof

Photos in this sidebar article courtesy of ACH Foam Technologies



| (Left) Geofoam was used on the roof of the parking garage at the California Academy of Sciences to provide an inviting landscape for the academy's main entrance. (Center) Geofoam was installed quickly and easily on the parking garage's green roof. (Right) Blocks of geofoam, ranging from 6in. to 3ft, were installed during the process of constructing the green roof of the parking garage at the new CAS building.

**T**he California Academy of Sciences (CAS) in San Francisco has completed a transformation. Its innovative redesign has already gained international recognition as a cultural icon. Under one "living roof," the new Academy contains a planetarium, an aquarium, and a natural history museum.

The CAS expects to be the largest public LEED-platinum building in the world (Official LEED status won't be determined until autumn of 2009).

In keeping with the Academy's natural environment, the architects also wanted to plant grass and trees on the top of the CAS's underground parking garage, creating an inviting, green entry into the building.

The subcontractor specified 3,700yd<sup>3</sup> of geofoam.

Said James Zavala, an estimator on the project: "We had standard 3-ft x 8-ft blocks originally delivered to the jobsite. We quickly learned that it was easier to cut the blocks to the specified thickness at the factory in order to reduce on-site labor. [The supplier] immediately began cutting the blocks to our specs prior to shipment. The blocks varied from 6in. to 4ft in depth. After installing a layer of geotextile fabric, the foam was covered with 2ft of soil for planting. For every cubic yard of foam we used, we saved approximately 1.00-1.25 tons of weight on the parking garage."

### Project highlights

**Geofoam supplier:** ACH Foam Technologies

**Architect:** SWA Group

**Subcontractor:** Jensen Corp.

**Geotextile:** Propex (Geotex 451)

Because of the vastness of construction going on around the area (the Academy spans more than 2.5 acres for exhibition, education, and office space), some of the area for the parking garage was not prepared for delivery of the large quantities of geofoam. "All in all, we had 40 trucks of material that had to be delivered," said Zavala.

"[The geofoam was] cut from the 4 x 8-ft blocks down to ideal 6-, 12-, 24- and 36-in. sizes." "Because the area had not been fully prepared, we had to stage the deliveries. We had 40 trucks total, with 2-3 truckfulls being delivered at a time. Given the logistics involved, it was pretty amazing that we were able to stay on schedule. By cutting and storing the geofoam blocks, we were able to avoid a logistic nightmare," said Zavala.