

What's **COOL** in **STEEL**

by Lena Singer

Always on the lookout for intriguing news related to structural steel, *MSC's* editorial staff has pulled together this **cool** collection of our favorites.

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Steel Art Trees

NatureMaker, located in Carlsbad, CA, brings the technical and natural worlds together in their custom fabricated Steel Art Trees. The company was founded in the 1980s by the late Bennett Abrams, an ecologist and sculptor, and Gary Hanick. Since then, NatureMaker has created indoor and outdoor "trees" for libraries, casinos, resorts, museums, nature centers, zoos, restaurants, and private homes around the world.

The trees can be designed as free-standing structures or as column cladding. Each one is the product of collaboration between engineers, certified welders, sculptors, scenic artists, and painters.

According to Hanick, the trees are viewed as "giant cantilevered structures," with the structural weight concentrated at the bottom.

"Without steel, we wouldn't have the support or materials to do this," Hanick said. "It gives us the ability to build really mammoth trees, in terms of height and trunk and canopy width."

The trees are carefully engineered—each one is designed to comply with local seismic, build-

ing, safety, and fire codes. NatureMaker designers also work with the structural design team early in the process to ensure that structural supports, such as floor reinforcements, and footings are provided within the building. By incorporating the trees into the building's design, they can be installed without additional supports.

The infrastructure of each tree is comprised of HSS steel, steel mesh, and rebar. Then, a substance simulating bark—a composite of fire retardant materials, resins, and epoxies—is applied. After hand-carving, hand-painting, "aging," and application of fire retardant leaves, the tree is ready to be shipped. The trunk and limbs are designed in sections with lock and key apparatuses for easy disassembly, shipping, and installation.

After 22 years, NatureMaker's portfolio includes redwoods, oaks, olive trees, African rainforests, and bamboo groves. Steel Art Trees have been designed to be as tall as 120' for column cladding and 80'-tall for free standing trees. Many of the trees are twice as wide as they are tall, with up to 60' cantilevers. •

