

# What's COOL in STEEL

Every year, *MSC's* editorial staff puts together a list of interesting and fun people, buildings, structural elements, and other odds and ends associated (sometimes, very loosely) with steel. The items on this year's Cool List range from a skylight based on a famous moment in American history to a wrench with super powers to a massive, intricate gingerbread village. They're all cool and they're all somehow related to steel. Enjoy!

## COOL FURNITURE

### A Chair With Flair

Imagine watching television in a 180-lb stainless steel chair. Then again, such a chair would probably be more appropriate in a museum than a TV room—if it even existed.

It does. Daniel Libeskind and Toronto furniture designer Klaus Nienkämper have created the new limited edition custom-built Spirit House Chair, constructed entirely of 14 gauge stainless steel with a brushed finish, for the opening of Michael Lee-Chin Crystal, a new addition to the Royal Ontario Museum in Toronto. It can be oriented in five different positions—and can even be used as a side table. Each chair takes 40 hours of labor to complete and has Libeskind's signature etched onto it.

The chair's angular appearance is inspired by the architectural peaks and facades of the Lee-Chin Crystal addition—also designed by Libeskind—a 175,000-sq.-ft aluminium-and-glass-covered steel structure that opened in June and houses seven permanent galleries, a new main entrance and lobby, the ROM Museum Store, Crystal Five (C5) Restaurant Lounge, and special events facilities, as well as Canada's largest space for international exhibitions.

Libeskind's first furniture endeavor, the chair is named after a space within Michael Lee-Chin Crystal (the Spirit House) where the structural support beams unite to form an open space that will be filled with a soundscape reflecting various aspects of the museum. Thirteen Spirit House Chairs reside on Level 1 of the Spirit House, three sit at the front entrance to the Lee-Chin Crystal, and two are on display in the new ROM Museum Store.

And if you decide you need a Spirit House Chair for watching television, they are available for purchase through [www.klausn.com](http://www.klausn.com).



Studio Daniel Libeskind

Above: Daniel Libeskind's Spirit House Chair. Below: The Michael Lee-Chin Crystal addition to the Royal Ontario Museum in Toronto, for which the chair was created.



Royal Ontario Museum 2007

COOL TOOL

## Get a Grip



LoggerHead Tools

Although we haven't used it to tighten structural bolts, we'd like to have this tool in our garage.

Last year LoggerHead Tools LLC introduced the Bionic Grip, an open-ended version of its Bionic Wrench. The tool was the first open-ended wrench to distribute forces 240° over a work surface, automatically fitting multiple sizes of fasteners, pipes, and tubes with the squeeze of a hand.

Offered in 6-, 8-, and 10-in. versions, the Bionic Wrench features four serrated jaw surfaces and the manufacturer's Interlock mechanism, which stays locked while under torque load and disengages when the force is removed. The tool is well-suited to a wide range of applications that require turning nuts and bolts or pipes and tubes.

The wrench can be gripped in either hand and in almost any orientation. Users can tighten or loosen their work with ratchet-like speed, because there is no need to remove the wrench between turns. When the handles are squeezed, four gripping jaws converge and grab the curved surface of a pipe or the flats of a fastener, distributing force of more than 240°. Combined, all three wrenches cover 35 metric and standard fastener sizes, as well as pipes and tubes from 5/16 in. to 1 1/4 in. outer diameter. Learn more about the Bionic Wrench (and see videos of the wrench in action) at [www.loggerheadtools.com](http://www.loggerheadtools.com).

COOL SKYLIGHT

## Symbol of Freedom

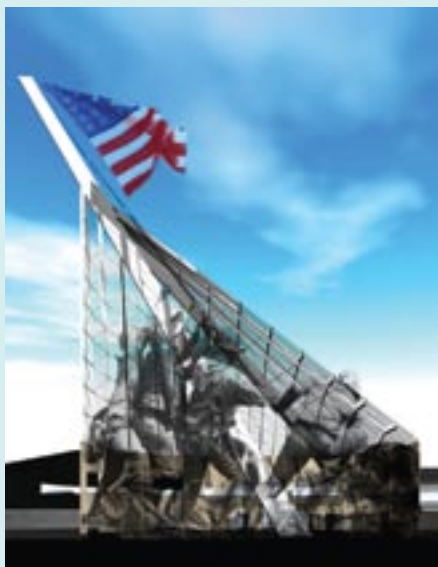
Symbolic buildings are nothing new, but it never gets old seeing well-executed examples—especially when they highlight steel.

The National Museum of the Marine Corps in Quantico, Va. is one such building. The museum opened on November 10, 2006—coinciding with the Marine Corps' 231st anniversary—and contains 120,000-sq. ft of museum gallery space, an orientation theater, office space, a gift shop, and two restaurants.

The heart—and most symbolic portion—of the building is the 150-ft-diameter, conically shaped, steel-framed skylight above the Central Gallery. What makes this skylight so special is that it recreates perhaps the most enduring symbol of the Marines: the 1945 film footage of the rais-



James P. Scholz



Fentress Bracburn Architects

ing of the American flag, by a group of four Marines, over Mt. Suribachi on Iwo Jima. The angle of the skylight mimics the "triangular" geometry of the famous moment, when one Marine secured the flag pole into the ground and the other three helped push it up. A 210-ft stainless steel-clad structural box beam acts as a mast and bisects the skylight at a 60° angle, representing the flag pole. The skylight, along with the aircraft suspended from its structural steel members, weighs 450 tons.

The mast tapers in section from about 15 ft by 7 ft at the base to 4 ft by 3.5 ft at the top, and is framed along its length by a triangular truss and anchored to a 20-ft by 20-ft foundation. It was designed as a hollow spire to lessen its weight and to provide an interior space for HVAC maintenance.

The skylight contains 35,000 sq. ft of glass and is framed by a system of custom-built steel ridge and rib beams, which span from the ring beam and connect to the mast and each other. Lateral bracing between the first and second beams and the fourth and fifth beams consists of stainless steel rod braces that create a triangular truss. Steel stiffeners follow the lines of mullions that hold the glass in place. The still rib and ridge beams are clad in a system of insulated aluminum panels, providing a visual contrast compared to the mast's stainless steel.

While that famous moment in Iwo Jima has been recreated in a more literal sense in the U.S. Marine Corps War Memorial statue, this abstract representation, framed in steel, is equally reverent and stirring.

## It Takes a (Gingerbread) Village

During the winter holidays it seems that every town has one highly decorated house that attracts people in droves. But in Flossmoor, Ill., the house that packs 'em in has its attraction on the inside.

That would be the house of Kurt Gustafson, P.E., S.E., AISC's director of technical assistance, and his wife, Janet. For 33 years now, Janet and Kurt have been constructing an ornate gingerbread village for the holidays.

It all started when the Gustafsons moved to Atlanta more than three decades ago. Both being from Chicago, they were used to white Christmases, so Janet decided, "Why not build a gingerbread village?" The first year, it was a much simpler project, with only facades. But, says Kurt, "It just kept growing and growing."

The Gustafsons are once again back in the Chicago area. These days, Kurt estimates, it takes three to four months to assemble the village, which now includes mechanical and moving parts and has each carefully constructed room bursting with Christmas lights, figures, and decorations. All of the snow and icicles on the ground, roofs, and trees are made from real frosting using approximately 50 lb of sugar.

Janet does the majority of the work, Kurt says, and they



Photos by Wendy Jimenez

leave the village up for about two months, meaning that the sun room where they set it up every year is out of commission for about six months. Kurt, who used to run his own engineering company, estimates that about 500 people come through the house every year to marvel at the roughly 4-ft by 12-ft detailed, colorful masterpiece. The theme of the village is different each year, and the last three years there has been a focus on steel (not coincidentally, Kurt has been with AISC for three years). Looking back at all of the villages he and Janet have created over the years, he says his favorite was from a couple of years ago. West Coast structural engineering firm Degenkolb Engineers had sent him a drawing of a seismically engineered gingerbread house, which he and Janet brought to life. They even put it on a shake table and used marshmallows for seismic isolators! (The structure remained intact, even after shaking.)

Last year's village incorporated several Erector Sets and focused on steel fabrication. And the Gustafsons are already at work on this year's village, although it will be a departure from the steel theme. Their house is on the walk for the Cancer Support Society, and Kurt is expecting twice as many visitors as usual this year.

No matter what the theme, every year the village has something for everyone: Kids display the typical child-like wonderment—and are also challenged, as Janet likes to incorporate little things for them to find; last year's project involved tiny alphabet blocks scattered throughout a fabrication shop that spelled out "F-A-B-R-I-C-A-T-O-R," as well as pint-sized versions of AISC publications. Teenagers are inquisitive and ask how certain portions were put together. And adults wax nostalgic. Some have been coming for years and have started bringing their children.

And this is Kurt's favorite part of it all. As an engineer, you might expect that the design and detail are what he enjoys the most. But he says the best part is "seeing the smiles on people's faces."

## COOL HOUSE

# Home is Where the Steel is

**There's always something interesting to look at in Venice, Ca.** This vibrant Bohemian area on the Pacific shore just west of L.A. has long been the home of colorful characters, funky businesses, and an artistic vibe.

The 700 Palms Residence fits right in. Designed by Steven Ehrlich Architects, Culver City, Calif., this unique house is framed with structural steel, maximizing not only the openings between the indoor space and outdoor courtyards, but also volume, light, and privacy on a small, urban lot (43 ft by 132 ft). "Raw" materials clad the exterior to help the dwelling fit in with the grittiness of Venice: COR-TEN steel, Trex, copper, masonry, and "flexirock" (stucco). The interior surfaces are left unpainted.

The lot includes a 3,000-sq.-ft. main house with two floors and a mezzanine level, a 1,200-sq.-ft. garage/studio/guest house, a lap pool, and three distinct courtyards. The lower level of the main house opens up on three sides via pivoting metal doors mounted on steel slides, transforming the space into an airy pavilion.

The steel (and wood infill) frame structure is outlined by a steel exoskeleton on one side. This structure supports electronically controlled light scrims that roll down horizontally and vertically to shield the front façade of the main house from the sun. Another unique element is a glass bridge—hung on stainless steel cables and supported on a thin steel frame—that connects the mezzanine level to a staircase leading to the upper level and appears to float in midair.

All of these elements add up to an innovative, elegant residence that is supported by and prominently displays steel—and brings an appropriately unusual new icon to the neighborhood.



Erhard Pfeiffer

