

Dror

in

Dwell

December

2011

QuaDror

House

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AT HOME IN THE MODERN WORLD

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TOP DROR

Prefab Perfect

SPECIAL REPORT:

The Next Generation of American Prefab

42 PAGES, 22 COMPANIES, 32 HOUSES

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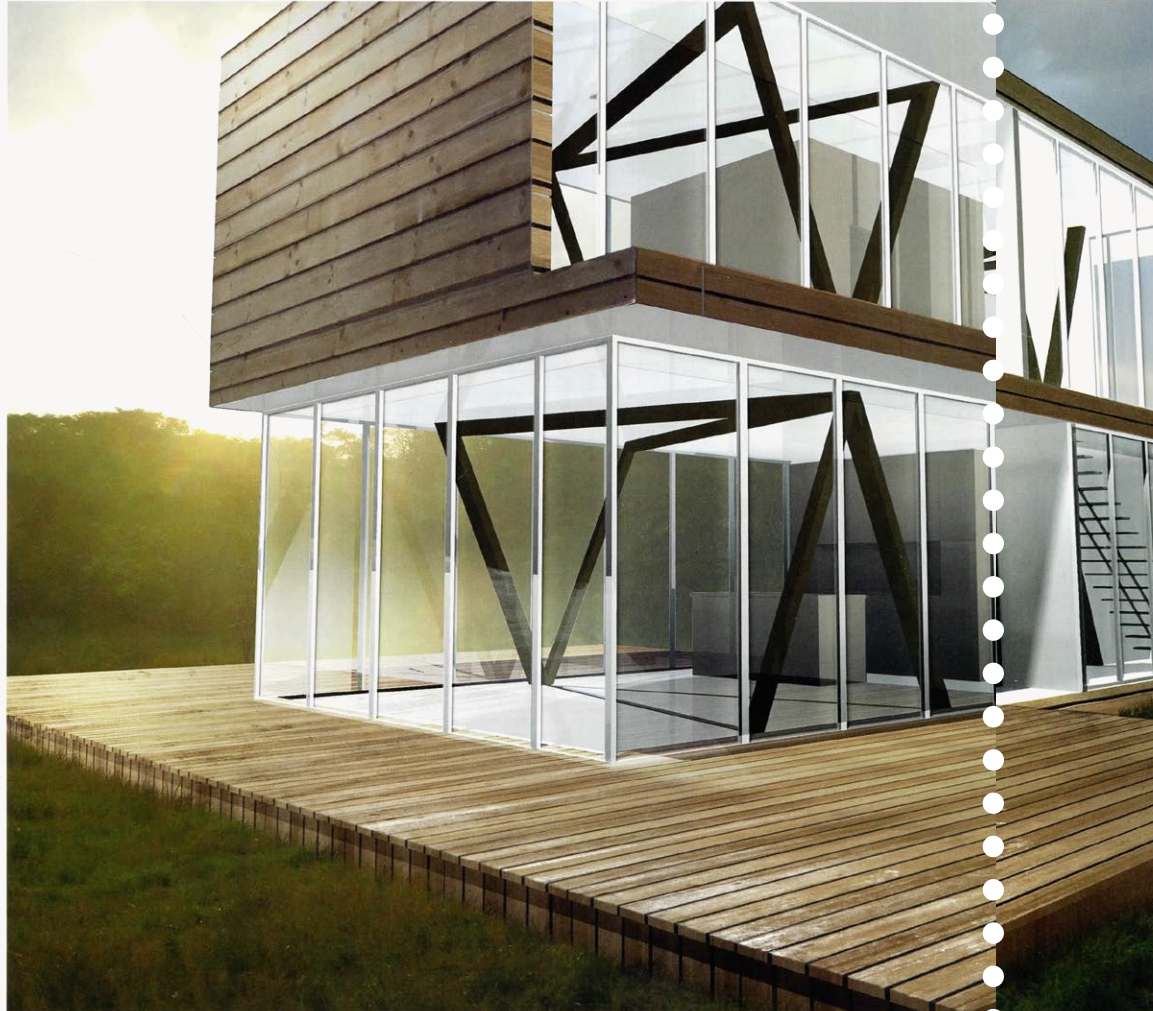
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Wee Approve

Inflate the scale of the support trestles, add floors and ceilings, and you have the core of the QuaDror prefab house. The QD 01-06 dwellings, created in partnership with Minnesota prefab outfit weeHouse, range from 900 to 3,000 square feet—“single and double story, and two versions that are elevated off the ground, which is beneficial for certain climates,” Benschetrit says. As with the trestles, the QD interlocking frame modules, constructed from eight beams, are shipped flat and set up onsite. “The whole house shouldn’t take more than a few days to assemble,” the designer says. “It’s really and truly a kit—a lucid system that results in a product you park on your land.” QD 01-06 houses will be available this spring.

By Marc Kristal

Industrial designer Dror Benschetrit’s new building system, QuaDror, can be applied to make just about anything from architecture to table bases.

“I feel we have not done justice describing it yet,” says the Israeli-born, New York-based designer Dror Benschetrit, creator of the diabolically brain-twisting QuaDror system—“and I don’t think the press has, either.” No self-respecting member of the Fourth Estate can ignore such a challenge, yet after 20 minutes of listening to Benschetrit explain (and re-explain) what Studio Dror’s literature calls “a unique space truss geometry,” the simple brilliance of the structural building blocks becomes unmissable.

This comes as little surprise, as Benschetrit’s work has always had a formalist panache. The rigorous undulations of his Peacock chair for Cappellini are formed by just three pieces of folded felt, and his dorm-room collection for Target offers a collapsible clock and eminently rearrangeable shelving made from a few strong components.

Fundamentally, QuaDror consists of four identical L-shaped pieces, with each edge of each piece cut to the same slight angle—“15 degrees is ideal,” Benschetrit says. The four parts are formed into two squares, which are then set back to back (the lower edges of the 15-degree angles meeting), with one square oriented horizontally, the other vertically. “That gives you four overlapping areas between the two squares along the diagonal,” Benschetrit says, drawing them in his sketch pad, “each

of which you connect using glue, bolts, or screws.” Picking up a QuaDror model, he sets it upright on his desk, lets go, and presto! The connection points form a natural hinge, and the flat sandwich falls open to create a freestanding object that is triangular on all four sides.

“It’s very strong and stable,” Benschetrit says. “The triangulations are always opposite—you have a V on one side and an A on the other—so the supports are constantly in tension. It’s always parallel to the ground [the 15-degree angles are self-correcting] so you can stack them, and in terms of compression load, it’s almost as sturdy as a block. And you can use thin L-shaped pieces, which give you a trestle, or thicker ones, so it looks like a solid object.”

Though Benschetrit came up with QuaDror by accident while trying to create two interlocking squares as a frame for a chandelier, he instantly recognized its potential. “We’ve been working on this for four years, coming up with more and more applications, to show the system’s ability to become a lot of different things.” An exciting prefab architecture use of the system is at left, and three more of the myriad QuaDror manifestations follow on the next two pages. ▶

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Shine a Light

Benshetrit's table lamp, for the lighting and furniture company .MGX by Materialise uses QuaDror's infinitely scalable geometry to create a honeycomb of 1,200 modules that fits over a metal base holding a 40-watt halogen bulb. The lamp, which arrives flat and expands, accordion-like, when lifted, is manufactured via selective laser sintering (SLS), a 3-D printing process that uses a laser to solidify layer upon layer of powdered resin particles. "When you buy the lamp, you get a disc with the file on it, so if it breaks, you can 'reprint' it," Benshetrit says. ■

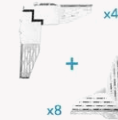


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Sweet Relief

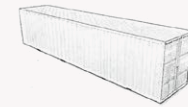
The QuaDror disaster-relief house frame reduces the system's interlocking module to four so-called universal joints and eight corner pieces (for stiffening and stability) that are attached to a locally sourced material (even bamboo) to form eight support beams. The structure can then be skinned in anything that's available. "In one 40-foot container we can ship 1,300 kits—that's 1,300 dwellings," says Benshetrit. Best of all: The house needn't be temporary. "It gives people something that can be moved, re-skinned, and improved—a real home."



CONNECTORS



FRAME



SHIPPING

= 1,300 homes



Compact Desk

"Designers always like the idea of sawhorses for desks," Benshetrit says. "They're cheap and easy to move, multiply, and put away." The QuaDror version has a slightly smaller footprint than a standard sawhorse, which means more lateral leg room, "and if you orient the V side of the triangle toward where you're sitting, it's even roomier." Additionally, "it folds flat, doesn't require assembly, and works with any desktop." Studio Dror plans to self-market the desk, first on the Web, then through selected stores, and to hit different price points depending on the quality of the wood. "I like the Johnnie Walker approach—birch is Red Label, mahogany is Blue."

