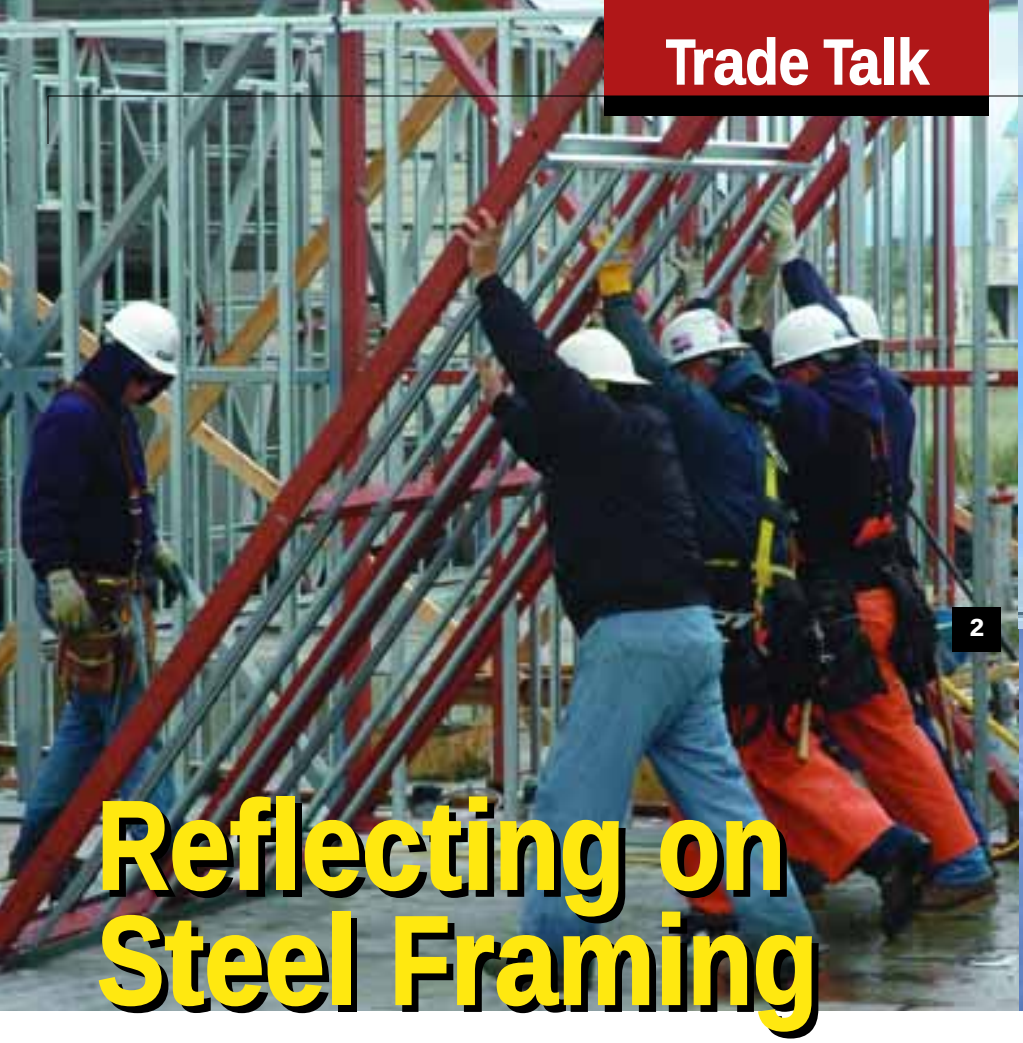

1 Typical MFBS panel with internal bracing, a window opening, and preinstalled furring

Reflecting on Steel Framing

By Bruce Greenlaw

When it comes to offering comprehensive apprenticeship- and journeyman-level training, the UBC is not only strong, it's agile. Need some training to erect, say, a promising new framing system requiring special skills and tools? The UBC can launch a training program at the drop of a hard hat.

A case in point is the new Modular Frame Building System (MFBS), which was featured in our April-June 2005 issue ("Carpenters Show Their Metal," see www.carpenters.org/carpentermag). MFBS was developed in the mid-1990s by Inter-Steel Structures Inc. (ISSI) for framing fire-resistant and sound-rated buildings up to 10 stories high. It consists of pre-engineered interior and exterior wall panels prefabricated in ISSI-licensed plants using zinc-coated tubular steel that ranges from 16-gauge to 10-gauge.

MFBS panels are typically 8 feet long, 8 to 12 feet high and 6 inches thick, weighing 180 to 300 pounds. They are braced internally where necessary so no structural sheathing or additional bracing is required **(Photo 1)**, and are quickly assembled by tilting them up **(Photo 2)** and bolting them together. The panels support standard light-gauge steel C-joists, rim track, corrugated decking and roof trusses, and can be accompanied by standard light-gauge metal framing or stick framing.

The system is designed especially for areas having seismic, wind, snow and drift concerns, which is why a number of MFBS jobs are on the Pacific Coast. True to UBC form, the Carpenters Specialties Training Center in Kent, Wash., in cooperation with the Willamette Carpenters Training Center in Portland, Ore., is rolling out an eight-hour workshop to teach the MFBS basics to local union carpenters. The class can be introduced at any training center where demand exists.

To learn more about prefab work in general and MFBS in particular, we interviewed ISSI President Del Bonds (del@inter-steel.com) and ISSI Technical Support and Project Manager Kenneth "Cory" Moore (cory@inter-steel.com). We also spoke with Dan Russell, the curriculum developer and skill enhancement coordinator for the Carpenters-Employers Apprenticeship & Training Trust Fund of Western Washington who is developing the MFBS training program, and George Weinrich, member of UBC Local 470 in Tacoma and foreman of a Rushforth Construction crew that's erecting several MFBS condos on the coast.

Here's a bit of their advice:

1. Plan carefully. Before the slab is poured, ISSI likes to show a model of its MFBS system to everyone involved to make sure they thoroughly understand the constraints of the system. Plumbers, for instance, learn that they can't run plumbing up inside the tubular frame; it has to go between the furring strips, or carpenters need to frame separate "wet walls" to accommodate it.

2. Plasticize the prints (Photo 3). Have the installation drawings laminated so they'll withstand the elements and constant handling for the duration of the job.

3. Check the slab. Make sure it's level and square so MFBS panels can be installed quickly and precisely. Minor wall panel adjustments can be made stacking 3-by-6-inch galvanized light-gauge, steel-coil shims.

4

5

6 Burke Bar

7 Spud ratchet

8

4. Protect the wall layout (Photo 4). The prints and the MFBS panels are sequentially numbered. When laying out the walls, UBC foreman Weinrich snaps the chalk lines, writes the panel numbers on the floor and then sprays clear "inverted marking paint" over the chalk lines and numbers so they won't be erased by foot traffic or rain.

5. Request shipping racks (Photo 5). These racks help prevent damage in transit, can be placed onto a slab or a subfloor with a forklift, can be moved around with a pallet jack without slidding, and make it easy to find a particular panel.

6. Use the right assembly tools (Photos 6 and 7). The Burke Bar made by Meadow Burke (800-282-7213), for instance, works great for lifting panels over anchor bolts, inching the panels into position and holding panels up while shimming underneath. Another special tool called the "spud wrench" has a tapered handle that can be poked through two neighboring bolt holes to align panels perfectly.

7. Wait to tighten the bolts (Photo 8). MFBS panels are joined with galvanized bolts that have washers on both ends and are secured with Nyloc nuts that won't vibrate loose. Don't tighten these nuts completely until all the panels on the floor are installed, so you can tweak the alignment if necessary. Nuts can be tightened with ratchets and socket wrenches, but it's faster to use half-inch impact wrenches like the one shown here.

Got a Trade Tip?

Send it and any sketches or photos that we can keep (plus your address, phone number, and local union number) to tradetalk@carpenters.org or to *Carpenter* magazine, Attn: Trade Talk, 6801 Placid St., Las Vegas, NV 89119. If the tip appears in Trade Talk, you'll win a $50 gift certificate from the UBC's Union Warehouse at www.carpenters.org.