

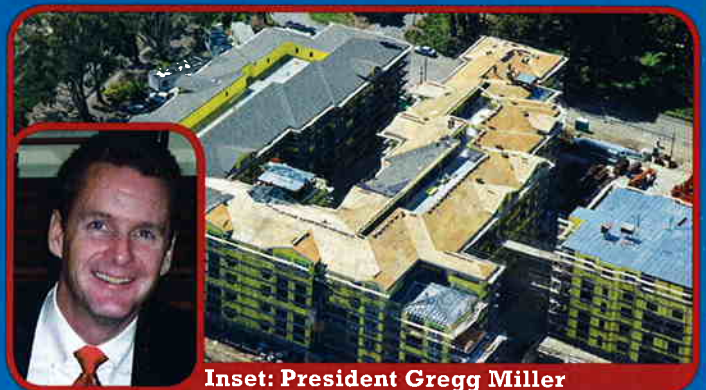
Automated[®] Builder

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Strong Materials, Stronger Structures, Clever Locksets



Amish Timber Framers builds a hybrid home to serve as a classroom for historic framing and green, energy efficient retirement nests for baby boomers



Inset: President Gregg Miller

Denver's Team Panels fabricates cold-formed steel panels, trusses and floors for fast finish of commercial and military structures



Inset: Director AnnaMarie Reynaud

Global Panel Solutions creates panels of concrete, foam and steel wire enclosures used by Habitat for Humanity for this low cost, 450 sq. ft. home in Mexico



Asian entrepreneur Jim Feng shows off his new line of remote-controlled, low cost door locks for entries.

Also inside:

- **Carlson's Column:** Are you in the game?
- **New EZ Stair brackets** speed installations at Palm Harbor
- **Ezenwa:** How to challenge discriminatory zoning regulations
- **MHE** earns Energy Star rating



The Crossing in San Bruno, CA with cold-formed steel trusses for a retail and multi-family complex near the San Francisco airport. Team Panels hopes to expand beyond its Colorado facility to offer the same fast, solid construction opportunities across the nation.

Steel is the new green:

Cold-Formed Steel, Prefinished Panels and Quality Control Spur Growth for Team Panels

By Robert Mendel, *AB* Alumnus

DENVER, CO – Team Panels International, founded in 1997 by Gregg Miller, president, is headquartered with all functions from administrative to design and fabrication located here. The fabrication facility runs 40,000 sq. ft. on seven acres and presently there are some 50 employees.

The company is shaped around the use of cold-formed trusses, framed, framed and sheathed and prefinished panels and pre-built component systems. Team Panels estimates, designs, fabricates and delivers the following:

Cold-formed steel roof trusses; wall panels including curtain walls, spandrel panels, load-bearing and shear walls; floor systems and specialty components such as cold-formed steel clips and angles, structural beams and stud packs.

As part of its systems offerings Team Panels also provides:

- Loadmaster roof decks, a complete roof deck, installation and warranty system which eliminates wood blocking at deck terminations and stabilizes the roof area. Loadmaster



Gregg Miller, president and founder of Team Panels International, headquartered in Denver, CO. Team Panels estimates, designs, fabricates and delivers cold-formed steel trusses, wall panels, floor systems and specialty components.

has been tested and qualified by UL and major code organizations for wind uplift, non-combustibility and fire resistance.

- Hambro composite floor systems designed to pour 3-1/2" of concrete over the top creating a composite floor system with the joists. Hambro works well with steel load bearing and structural steel systems and offers long spans of up to 38' while installing rapidly.

- USG Fortacrete® structural panels made with a cementitious material resistant to mold. They can be used as part of the building structure carrying gravity and lateral loads while tongue and groove edges add strength and stability. Fortacrete provides light weight at half the density of conventional concrete which lowers the weight of each floor when combined with cold-formed steel framing.

Team Panels' projects are typically commercial although they have done military housing and encompass hotels such as the Hampton Inn, here, the Inn at Cherry Creek,



A panel is lowered into place at The Candlewood Suites-Meridian Business Park in south Denver, CO. Team Panels pays extra attention to every component's details so installation teams have faster set-ups.



High-strength Fortacrete structural panels also were used in the Candlewood Suites project for the flooring applications.

the Aspenwood Lodge, Steamboat Springs Grand Hotel Resort and the Omni Interlocken Hotel in Broomfield, CO. Other typical projects are assisted living and senior centers, student housing and commercial mid-rise buildings.

Although Team Panels does not install it functions more like a design/build supplier. The company works with the project contractor to assure that there is a premium on quality control and an efficient and timely schedule which minimizes errors.

Miller says, "Our truss packages are a complete package so there are no missing pieces. We include sealed truss drawings, sealed clips and connections and sealed bracing. Often our competitors leave out something that makes their price appear smaller but the job requires it and then the 'nickel and diming' comes into the picture for the installer. Our attention to detail helps to eliminate problems that often arise in the field. We model the building in 3-D allowing us to visualize the building before issues arise and make recommendations to simplify the design and connections, a major advantage over site-built construction."

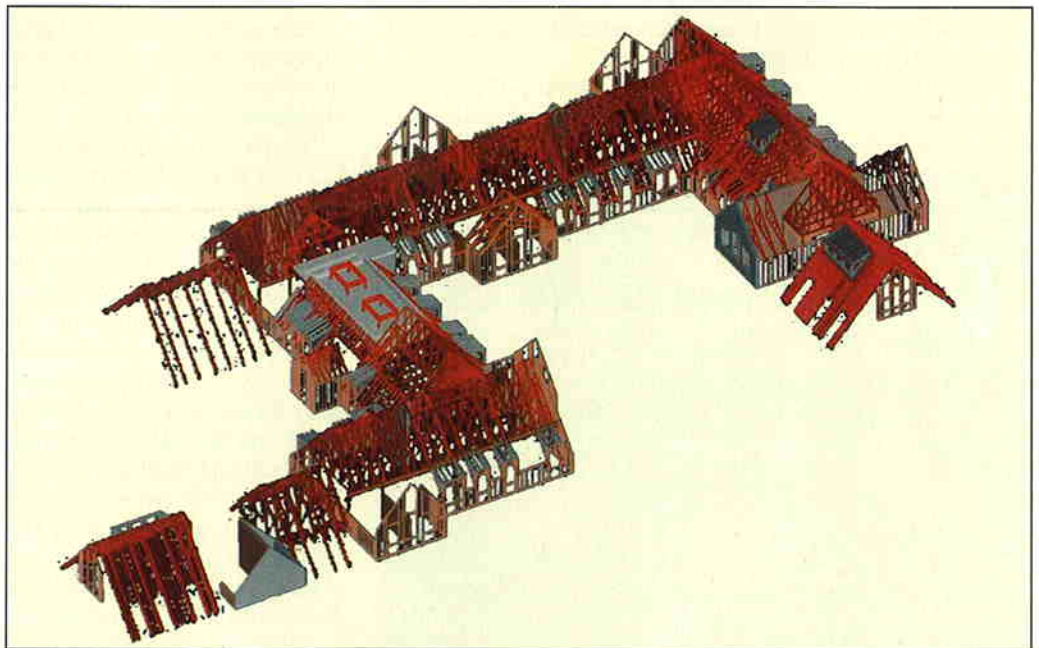
Prior to launching Team Panels Miller started with a steel framing and drywall operation called Denver Drywall Co. which is still in operation. Miller feels this background is key in the sense that Team Panels knows what's important to the installing subcontractors. Therefore Team Panels detailing and panel construction is not only correct but user friendly.

Miller says, "Typically as a subcontractor that panelizes you are in an on-again off-again situation that is never very productive. Team Panels was created to avoid that situation.

We wanted to create consistency and become very good at it. By specializing as a prefabricator and acting only as a supplier we have been able to expand our customer base and coverage to ship to subcontractors in over 30 different states. We've found that through high productivity, automation and quality control we can ship panels thousands of miles and still be competitive with local operations."

As the industry picks up momentum again Miller wants to duplicate the Denver facility in other locations. "If we have the right volume of work it makes sense to be in those locations. We want to be the McDonalds of panel and truss fabrication – in the sense that we will offer the same consistent quality control products no matter what location it is fabricated in.

"We offer a cold-formed, steel-framed wall panel with exterior sheathing and exterior finishes. In a mid-rise multi-family project even if you panelize the job with framed and sheathed panels, you still have to set up scaffolding to apply exterior



Computer modelling in 3-D allows everyone involved in the design to visualize the roof layout for this student housing project at the University of Northern Colorado.



At The Hampton Inn in Denver, CO. Team Panels used prefinished panels (shown) with windows installed and floor panels and trusses erected in a small, challenging construction site.



This Los Angeles, CA Crime Lab utilized the Team Panels system to accelerate production time and minimize on-site set-up errors.

finishes. We can eliminate all those on-site procedures by pre-installing the windows and finish in the factory first.”

Team Panels finds that the primary selling task is education, meaning showing clients a new approach. The traditional method, Miller notes, has been to get the construction drawings, award the job to the subs and then two weeks later start showing up on site and building.

“We want to start earlier with a pre-building phase, building the structure piece by piece in the computer. That means every stud, every brick, every window is accounted for and any problems are found and fixed in the computer. This is more cost effective than dealing with them in the field. This process also allows the design team to see all the walls as prebuilt and fix any problems in the computer,” Miller says.

Team Panels works together with the architect, the client and the contractor using BIM (building information management) software from Aegis Metal Framing which allows architects to do 3-D modeling. This in turn reveals and eliminates conflict issues prior to any site work and enables more effective shipment scheduling.

Miller notes that a commitment on the front end of the design phase is what makes panels work. Team Panels likes to be 80% done with fabrication before starting to deliver



Looking up inside the steel truss section at the dome for a retail center built with Team Panels at Walnut Creek near Broomfield, CO.

the panels because the assembly process goes so quickly. This process lends itself to the design/build market, which is where the company feels it works best.

Miller says, “The education is in the design/build process and we walk people through this process which produces quality control and a faster construction schedule. It’s not costing them more and they save over standard construction time, which they like, they reduce the financing period and the owner can use, sell or rent the property quicker.”

Miller notes that LEED certification and ‘green building’ is the hot button today because owners and developers want to be eco-friendly and get tax credits where they’re available. All Team Panels cold-formed steel trusses are produced from 90% recycled steel comprised of 57% post-consumer recycled content and 33% post-industrial recycled content. Panel studs contain a high percentage of recycled steel fabricated with both post-consumer and pre-consumer recycled content.

Among the many LEED projects the company has completed two notable LEED-certified projects; the Hotel Terra in Jackson Hole, WY and the Valor Christian High School in Highlands Ranch, CO.

“We feel this dimension will grow even more,” Miller says, “and we want to be part of this smart construction. Steel offers better quality control – another green element – and in the South and East where you have more moisture issues wood gets wet and dries and changes shape. Steel has life-long durability plus non-combustibility so it’s safer where you want a long term, sound structure and fire is an issue.”

Asked about the bread-and-butter niche for Team Panels, Miller says it’s the various mid-rise projects that the company does so efficiently due to more flexibility in the design phase and the ability to provide the best combination of structural and finish components in a cost-efficient package.

For more information on Team Panels International circle Reader Service No. 61.

For information on Hambro floor systems circle No. 62.

For information on Loadmaster roof decks circle No. 63.

For information on USG Fortacrete panels circle No. 64.

For building information management software from Aegis Metal Framing circle No. 65.