



STEEL FRAMING INDUSTRY ASSOCIATION



## CASE STUDY

### STEEL FRAMING HELPS DELIVER DORM ON TIME

VICTORY HALL,  
UNIVERSITY OF NORTH TEXAS  
DENTON, TEXAS

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## OVERVIEW

### PROJECT

#### Use

Student housing

#### Size

4 stories, 491 rooms, 598 beds, 163,415 sq.ft.

#### Opening

September 2004

#### Construction Cost

\$21.85 million

### PEOPLE

#### Owner

University of North Texas at Denton

#### Architect/Engineer

Carter & Burgess (now Jacobs Engineering Group, Pasadena, CA)

#### Project Design Partner

Architecture Demarest, Dallas, TX

#### General Contractor

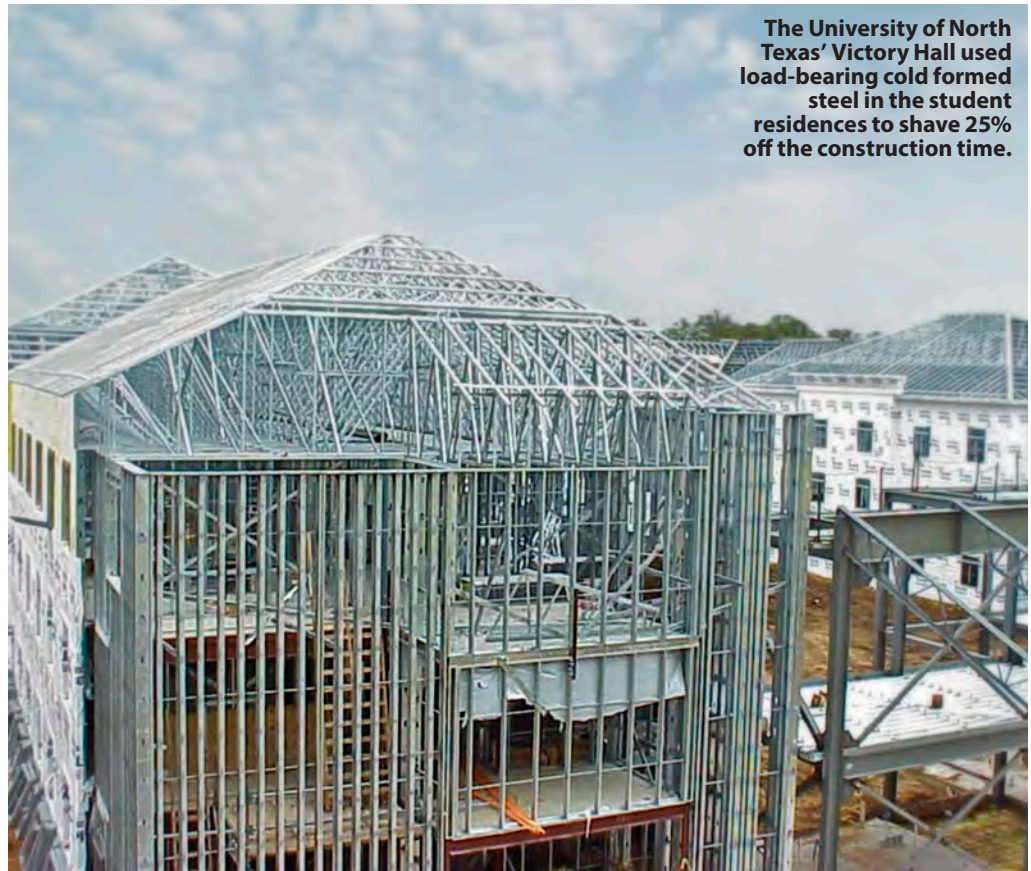
Austin Commercial, Dallas, TX

#### Cold-Formed Steel Fabricator

Nuconsteel (now part of Nucor Corp., Charlotte, NC)

### STEEL

Load-bearing, cold-formed steel structural framing along with non-bearing cold-formed steel walls, trusses and flooring systems.



The University of North Texas' Victory Hall used load-bearing cold formed steel in the student residences to shave 25% off the construction time.

## Load-Bearing Cold-Formed Steel System Saves Time and Money for University Dorm

Cold-formed steel framing helped a university add 598 beds on campus in just 14 months and meet a critical deadline: the arrival of students for the new school year. Victory Hall, a 163,415-square-foot dormitory at the University of North Texas at Denton, Texas, again proves that designers and builders can use cold-formed steel in load-bearing applications and get better and faster results.

“Cold-formed steel load-bearing framing is cost-effective and durable. The systems have high strength-to-weight ratios and resist warping, mildew and cracking,” says Don Moody, then General Manager at Nuconsteel, Denton, Texas (now part of Nucor Corporation). “Concrete, masonry and wood can’t make those claims.”

### MEETING TIGHT SCHEDULE WITH LESS COST

Among commercial builders, cold-formed steel has long been a preferred choice for curtain walls and partitions. Such systems are non-combustible, affordable and typically

easy to install. But what about for low-rise load-bearing applications? The Victory Hall project needed a structural system — one that could go up quickly within budget.

“The university was interested in meeting a schedule and lowering costs,” says Virgil Strange, President, Axiom Commercial, Denton, and then a consultant to Nuconsteel.

“UNT wanted to accommodate new design parameters,” Strange says.

Lead architect/engineer Carter & Burgess (now the Jacobs Engineering Group) and design partner Architecture Demarest helped fast-track the five-month design phase of the low-rise structures. Victory Hall would consist of two brick and limestone-faced buildings three and four stories respectively. They’d have common entry spaces and a cafeteria. The original plans called for the buildings to have a concrete structure. The streamlined redesign replaced concrete with cold-formed steel structural framing.

Strange started working the switch to cold-



Victory Hall's interior and exterior walls, flooring systems and roof trusses feature cold-form steel systems.

The University of North Texas loves Victory Hall's exterior facade, which is supported by load-bearing cold-formed steel framing.



formed steel after construction was underway. "I got to know all the architects and the design-build people at UNT," he says "One night at a social event, Victory Hall came up in conversation. I learned the university was having trouble with its scheduling and costs."

UNT wanted the dormitory open for the start of the next school year, according to Strange. But making the deadline would be a challenge. Multi-occupancy buildings this size typically take 18 months to build, but it was already June and construction of the dorm was just getting started.

"They discovered infrastructure issues they had not factored into their schedule. It was the time when the price of concrete went sky-high," Strange says. "The university was behind the eight ball."

So, Strange set up a meeting. Together, he and Moody presented the merits of cold-framed steel to university officials and the general contractor, Austin Commercial. Thereafter, officials decided to switch from concrete to cold-formed steel for the load-bearing system.

The cold-formed steel installation flowed

**"There was some redesign, but it was not a 'back to the drawing board' type of a thing. We had our own in-house engineering and were able to do the work."**

phenomenally. "The walls flew up," he says. "The bulk cap deck — a 3-inch profile bulk cap deck — allowed us to do load-bearing wall to load-bearing wall and deck systems without the need for shoring up of the walls. That was a timesaver."

Moody scheduled panel fabrication and site installations aggressively. "We were working off the footprints of the buildings. The load-bearing walls pretty much followed the spans they had set," Moody says. "There was some redesign, but it was not a 'back to the drawing board' type of a thing. We had our own in-house engineering and were able to do the work."

Once walls on one floor were installed, the deck for the next level went in place and the concrete subfloors poured in short order. Nuconsteel built wall panels and roof trusses offsite, timing their fabrica-

tion to match Victory Hall's accelerated construction schedule.

### UNIVERSITY IS THRILLED

How does the university feel about the project?

"They're thrilled," Strange says. "They just love the facade and the strength of the steel, and they got the students in on time."

According to the student newspaper, the North Texas Daily, a dormitory of this scope would normally require 18 months to build. Victory Hall was completed in 14 months thanks, no doubt, to the use of cold-formed steel.

"We saved money from where they were going to be in concrete," Strange says. "We also cut the timeframe."





## DETAILS

### STRUCTURE

- Load-bearing, cold-formed steel framing over concrete footings
- Structural steel used in long-span common areas and the cafeteria

### EXTERIOR

- Brick veneer over fiberglass mat gypsum sheathing

### INTERIOR

- Cold-formed steel framing used in all living-quarter areas

“Looking from the outside or the inside,” says consultant Virgil Strange, “you can’t tell if Victory Hall is built from concrete and infilled with metal studs, or if it’s a load-bearing, cold-formed steel stud job.”

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