

CASE STUDY

Using **TRIFORCE**[®] instead of plated trusses helps a contractor save on labor and get ahead of schedule!

PROJECT

York Beach Residence Club
York, ME

TYPE OF CONSTRUCTION

Residential-commercial
building

TRIFORCE[®] open web design makes installation of plumbing, electrical and HVAC so much easier!



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CASE STUDY

York Beach is a small coastal resort town in Maine. It is extremely busy in the summer months thanks to two beautiful beaches and many upscale accommodations.

One of these is a residential-commercial building called York Beach Residence Club. Built in 2016, this 4-story 25-unit multiuse facility includes condo units, shops, restaurants and a hotel. Because of the seasonal nature of the location, it's construction was highly time-sensitive.

The original plan called for plated trusses to be used for the floor structures.



CHALLENGES

Hard deadline

All structural elements and the exterior had a tight schedule leading up to a hard deadline, to avoid serious high-season traffic problems. Scheduling had to be flawless.

Very narrow working space

Very narrow streets around the building. Materials could only be deposited under the first floor then moved to a loading area to be hoisted to the upper floors. Due to the limited space, all materials moving had to be done

by hand. Limited amount of materials could be brought in at a time.

Framing off measurement

The steel framing of the first floor was slightly off measurement. This was pronounced enough that some of the plated trusses ordered for the job couldn't fit.

The builder was looking at a 3-4 week replacement time for the plated trusses. This would endanger his deadline. He had to find a suitable substitute, fast.



SOLUTION

After the engineer of record gave his authorization, TRIFORCE® joists substituted the plated trusses because of their wide availability, on-site adjustability, lightness, and maneuverability.

- TRIFORCE®'s wide availability thanks to its mass production, as well as its on-site adjustability meant work would no longer be slowed by reordering trusses.
- Choosing the much lighter TRIFORCE® enabled each worker to carry two joists at a time, greatly accelerating movement on site. The heavy plated trusses required two workers per truss.
- Workers reported the open Joist TRIFORCE® units were also much easier to navigate through the partition walls on the upper floors.
- The General Contractor was quite pleased with the results. Using TRIFORCE® instead of the much heavier plated trusses saved him on labor and even enabled him to **get ahead of schedule!**
- TRIFORCE® was significantly less per linear foot than the plated trusses, coming out over 20% less in total cost for the substitution.



TECHNICAL DETAILS

TRIFORCE® also proved to be easy to work with, particularly when running MEP equipment.



With Plated Trusses, sharp edges of the metal plates can strip wires. The wiring seen above is protected by corrugated sheathing, but this can also increase the chances of it getting caught on plates. TRIFORCE® joists provide a clean open environment, so plumbing, electrical and HVAC installation just hums along.



In this picture of the plumbing, you can see how easy it is to use a laser in one direction or another to ensure the required slope. This would have involved so much more work had I-joists been used. With the I-joist, holes have to be cut very precisely to have a smooth slope.



Here is an 8-inch forced-air duct running at the edge of the room. Certainly, a hole that size would have been unacceptable in that location on an I-Joist as it would have seriously affected its resistance to load and weakened the structure.

CONCLUSION

Installing the TRIFORCE® product at 19.2" and 16" on center instead of the 24" originally planned for the plated trusses required more joists, yet costs were significantly reduced. Also, thanks to TRIFORCE®'s stock availability, lightness and ease of handling, the project's overall schedule was accelerated.

Because of TRIFORCE®'s open web design, plumbing, electrical and HVAC installation were easier and faster. The construction company's expectations were exceeded and it indicated it would use this state-of-the-art joist going forward.



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