One of the major benefits of specifying lightweight steel framing was its capability for prefabrication and panelization resulting in comparative cost advantages.

The largest tower on the site was prefabricated in lightweight steel framing on the ground and then hoisted in place.

High Tech Framing for Old World Architecture

Today’s lightweight steel framing systems are no longer restricted to rigid, box-like building designs.

The Village of East Norwich, an attractive cluster of five 1, 2 and 3-story buildings on a 3-acre landscaped site, is located on Pine Hollow Road just north of Northern Boulevard in E. Norwich, Long Island, New York. Scheduled for occupancy in late 1985, tenants will be comprised of elite retail shops and a gourmet restaurant at ground level and office suites on upper levels.

According to the developer, Alex J. Bethune, the “old world” design of the buildings, combining peaked and gently curved roof lines with towers, bay and circular windows, dormers and arched doorways, was inspired by centuries-old French architecture and further influenced by famous artists of old France.

The architect, George Le Brun (of French ancestry) combined traditional detailing with a lively contemporary conception to create a distinctive and desirable location for the fine stores and businesses.

The East Norwich project was planned for lightweight steel framing after consideration of incombustibility, high strength-to-weight ratio, prefabrication capability, material uniformity and comparative cost advantages precluded the use of any other fire-rated framing materials. In addition, it was anticipated that winter-tie erection of the steel framing would be far more efficient under snow, ice and cold rain conditions than using more porous framing materials.

One of the major benefits of specifying lightweight steel framing at East Norwich was its capability for prefabrication and panelization. The framing contractor, Composite Panel Fabricators, Inc., saved an exceptional amount of field time by fabricating all of the roof trusses off-site and delivering them to the job shortly in advance

November 1985/Construction Dimensions  41
of their scheduled placement. It is estimated that prefabrication at the Composite plant saved over 30% of the overall cost of the trusses compared to on-site fabrication. Also, fabricating the truss assemblies indoors to accurate, predetermined calculations and verifiable dimensions, assured proper installation at the job site.

The lightweight steel framing manufacturer, Marino Industries Corp., contributed to the cost savings by providing precut-to-size components which, according to a Composite spokesman, were accurate with uniform gages, bends and galvanized finishes.

At the time of erecting the building, Composite’s plant space limitations prevented simultaneous panelization of the exterior walls. These, and other elements of the superstructure, were panelized or prefabricated on-site. The circular windows and curved archways were formed on a flat plywood table using jig stops to accurately position the steel strips before joining by welding. The largest of the towers was prefabricated on the ground and, like the roof trusses and upper wall framing, hoisted in place.

Learning Curve . . .

Although certain of the lightweight steel framing techniques developed on this project introduced a learning requirement for some of the local carpentry union members, once the special skills were acquired erection time decreased as construction proceeded.

Contributing to the charm and harmonious ambience of The Village at East Norwich is the employment of composite panels for the outer surface of the exterior walls. The lightly textured stucco-like finish, in soft pastel colors, is an acrylic-modified cement reinforced with fiberglass mesh applied over polystyrene insulation.

The cement is completely weatherproof and provides the polystyrene with exceptional stability and stiffness. In addition, insulating characteristics are far beyond anything achieved with conventional cement stucco. The panels are applied to exterior sheathing which in turn is screwed to the structural lightweight steel framing system. Since the coloring is integral with the cement, minor damage to the exterior surface will not result in color variations.

Of necessity, there were many inventive solutions to construction problems made on-the-job in order to effectively satisfy the developer’s initial concept, his architect’s interpretation, the engineering shop drawings and the framer’s capabilities.

In retrospect, the principals all agree that if the separate buildings had shared more structural similarities, the proven benefit of off-site prefabrication would have drastically lowered construction time and costs. As it is, The Village at East Norwich is testimony to the fact that lightweight steel framing is not restricted to rigid, box-like building designs.

With careful yet imaginative planning and close coordination of the designer, the structural engineer, the builder and the steel supplier, old world facades can have backbones of steel.