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Precast Concrete Beam-to-Column Connection System

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PRECAST CONCRETE BEAM-TO-COLUMN CONNECTION SYSTEM

THE NEED

Compared to conventional concrete constructions, precast concrete is a better option which is more cost-effective for production, transport, and erection when columns and beams can be fabricated independently. Along with precast concrete constructions, the joining of precast concrete element depends on innovative connection systems that can save labor and speed production.

THE TECHNOLOGY

The BSF connection is a hidden beam and connection for gravity loads that eliminates the need for projecting column corbels. From a steel box cast into the concrete beam end, a sliding steel “knife” plate with a safety notch is cantilevered into a steel box that has been cast into the concrete column. The efficient “invisible corbel” allow new possibilities in geometrical design with greater freedom for architectural design of precast concrete structures. The BSF connection can be used in all types of building structures where beams frame into columns, such as office buildings, hotels, parking structures, schools, sports stadiums, and other similar structures.

THE BENEFITS

The value of the BSF connection system over typical projecting column corbels in precast structures includes:

- Clean straight lines.
- Cost savings and efficiency in beam and column fabrication and handling.
- Uncomplicated and fast erection.
- Functions within normal building tolerance.
- Allows for axial volume change movements due to creep, shrinkage, and temperature change.
- Easily protected against fire or corrosive elements.

STATUS

The BSF connection system is currently available in six standard sizes with standardized hardware and published load capacities through load tests. This

technology has been commercialized, and its implementation at the industry level has started.

BARRIERS

Designers are not widely familiar with this system.

POINTS OF CONTACT

JVI Accessories, INC.

Tel: (847) 675-1560, (800) 742-8127, Fax: (847) 675-0083

REFERENCES

1. BSF: Precast Concrete Beam to Column Connection System "The Invisible Corbel", JVI Accessories, INC.

REVIEWERS

Peer reviewed as an emerging construction technology

DISCLAIMER

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