

STRUCTURAL ADVANTAGES OF PRECAST CONCRETE

Precast concrete is a high-performance structural building material that can be used as the primary structural system of a building transferring roof, floor, and lateral loads. Precast concrete enables designers the advantage to integrate structural and architectural envelope systems, thereby reducing the total materials, detailing, costs, construction complexity, and more when constructing a “Total Precast System.” The design versatility of precast concrete allows for almost any shape element - like curved and radial sections - with flexibility in connection points and load paths. High strength precast, prestressed concrete structural members also deliver exceptional load-carrying capacity, which can result in smaller and shallower sections, longer spans, or both when compared to other conventional structural building systems.

STRUCTURE DURABILITY

- Long service life of 100 years or more
- Barrier wall system providing an all-in-one continuous insulation, air, and vapor barrier
- Inherent functional resilience

MULTI-HAZARD PROTECTION

- Storm resistance from high winds and floods
- Earthquake resistance
- Blast resistance
- Passive fire resistance

STRUCTURAL DESIGN VERSATILITY

- Load-bearing integrated architectural and structural building envelopes
- Economical standard product sections
- Long, open, column-free spans help with open floor designs
- Fewer joints mean lower maintenance costs

USE VERSATILITY

- Recyclable – can be crushed into road base or coarse aggregate for new

concrete

- Deconstructive reuse: disassembling and reusing on existing or new project
- Adaptive reuse: long, open, column-free spans allow for easier future changes in building function

In addition to resisting gravity loads, a principal consideration in building design is the lateral force-resisting system. There are a variety of precast concrete designs that can be used to achieve these goals economically and effectively. Precast concrete structural systems can be designed as shear wall, moment-resisting frames, or hybrid systems. Hybrid systems use precast concrete components combined with other construction materials, such as steel or cast-in-place concrete to create a “hybrid” system.

Another structural advantage of precast concrete is the

design assistance provided by your local precast concrete producer.

The inherent structural advantages of high-performance precast concrete make it the most durable, resilient, versatile, and sustainable building material available for all types of structures when compared with conventional steel, cast-in-place, or wood construction. Make precast concrete construction the top solution of choice for your next building project.

