

# *Precast Building Systems*



Morse Bros can provide precast components to satisfy various structural systems. These include precast moment frame and shear wall systems that can be fully precast or in conjunction with cast in place structural systems. It can also include a combination of both shear walls and frames. Morse Bros can assist in the possibilities available to meet the space and architectural requirements. The precast components will be designed by Morse Bros with the lateral load resistance system and foundations being designed by the engineer of record.

## *Shear Wall System*

Shear wall systems resist lateral loads with either cast-in-place or precast shear walls. The loads are transferred to these shear walls by the floor and roof diaphragms, drag and chord elements. Gravity loads are supported by the shear walls, lite walls, and columns. When precast elements are used in the shear wall the limitations on crane size and panel size for transportation must be considered.





**MBI**  
MORSE BROS INC



## *Moment Frame System*

Precast moment frame systems resist lateral load by using column and beam frame action. These frames can be done by either cast-in-place reinforced concrete frame emulation or by using a post-tensioned hybrid frame. In the emulated precast frame, the frame is designed as if it were monolithic cast-in-place and then it is broken apart in precast column and beam components. The hybrid frame displacement design under the code specified lateral event using axial post-tensioning concentrically placed through the frame beam and column joints. In both types of moment frames the loads are transferred to the lateral resisting element via diaphragm, drag, and chord elements. The diaphragms can either be cast-in-place mildly reinforced, post-tensioned decks or precast elements with composite cast-in-place topping. All precast frame joints are grouted with high strength non-shrink grout that may contain fibers.



## Other Systems

Other structural systems can combine precast with other building materials such as hollow core or double tee floor and roofs with masonry or cast-in-place walls, precast walls with wood or steel joists, precast cladding on steel or cast-in-place structures, and precast platform with a two or three story wood structure above to name a few possibilities.

The use of precast building components allow them to be cast while the foundations are poured and this will help shorten the construction time frame. Precast is produced in controlled environments which allow for improved product quality, a variety of finishes, and a high possibility of obtaining LEED points. Morse Bros is best able to reduce cost on a project by becoming involved early in the design process and suggesting potential cost reductions.





**MBI**  
MORSE BROS INC

Precast Building Systems

