Low Floor Heights: The Low-Down

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ible, open space if your room layouts are irregular. In addition, the corridor can usually be spanned only with deck. This provides plenty of plenum space to run utilities down the corridor, which usually has a lower ceiling height than the rooms. If the plank will span from demising wall to demising wall, perimeter beams may only be necessary for erection and can often be removed afterward. This helps avoid spandrel beams and the sof ts they create.

If your project will use plank oring, it is helpful to speak with your plank provider. Do they feel that they can provide you with carpet-ready plank or do they usually recommend a skim coat? How will you attach the façade of your building to the plank? September's SteelWise article "Let's Be Plank..." (**www.modernsteel.com**) is very helpful in identifying things to consider when designing with plank.

Long-span Deck

The availability of long-span deck has increased greatly over the past few years. Manufacturers like CSI, Epic, United, and Corus all produce a deep, long-span deck available within a 4- to 5-week lead time. It usually comes in depths of 4.5 in. or 6 in. and sometimes can go up to 7.5 in. deep. CSI produces "Deep-Dek". It is available in gauges from 20 to 14. Based on continuous slab design, the 6-in. deck in 14 gauge material with 5 in. of normal weight cover can span about 19 ft unshored and about 35 ft with one row of shoring. United Steel Deck produces type "LS". Type LS is available in depths up to 7.5 in. and gages from 16 to 10. Type LS 7.5 in 10 gauge material can span about 25 ft unshored based on single-span conditions with normal-weight concrete and a 10.5 in. total slab thickness.

Many of these products have been vibration tested according to the guidelines of AISC's Design Guide 11, *F V a d H a A* . There are also UL re ratings for assemblies using these decks. Speak with your deck provider to plan the speci c details of your project.

Girder-Slab

Girder-Slab is a patented system, available through all structural steel fabricators, that uses dissymmetric beams (D-Beams) that carry precast plank on their bottom anges. The D-Beams come in 8-in. or 9-in. depths. The sections are produced from "parent" sections (W10s or W12s) that are sliced in half through the web in a hexagonal pattern to form two equal T-sections. A 3-in.-wide bar is used to form the top ange. Traditionally, 9-in.-deep D-beams are for plank systems that require a structural topping. Eight-inch D-beams are usually suf cient for plank systems that only require a nominal skim coat topping or no topping. By resting the plank on the beams' bottom anges, the whole structural depth is incorporated into D-Beam depth.

The beams are designed to develop composite action between the planks and grouted cells. Once the planks are erected on the beams, they are grouted into place. Grout ows through the openings in the web of the beam and into the hollow cores of the plank before it solidi es.

The precast plank slab can span either parallel or perpendicular to the perimeter of the building, and each has its own advantages. When plank spans parallel to the perimeter, D-Beams run in demising walls between residential units. Spandrel beams can often be removed after they are used for erection purposes. Because of this, true oor-to-ceiling windows can be achieved if this is a priority for your beam4e2E0h

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