

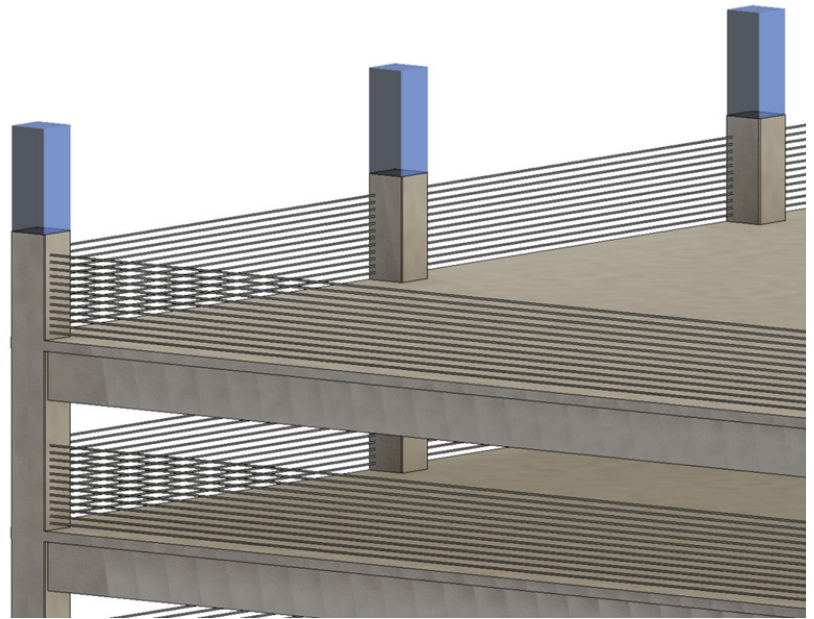
# Design Tip: Prepare for Expansion

*It's prudent to determine upfront if future expansion of a cast-in-place garage is a possibility.*

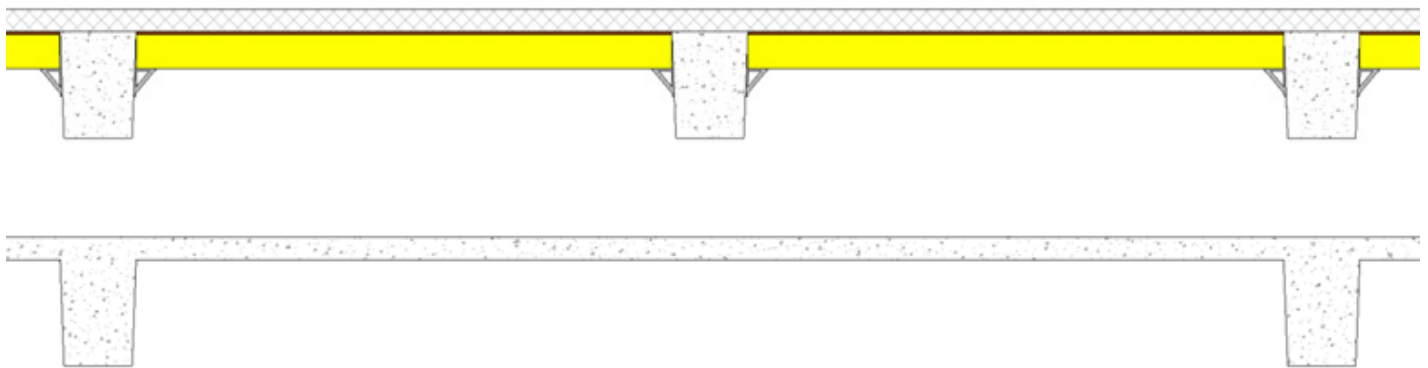
Cast-in-place concrete garages readily adapt to future expansions, which can be done at a lower cost if you perform the following during initial design and construction:

- Design the foundation for potential future loads.
- Extend the columns above the top slab level to accommodate future reinforcing lap lengths after the concrete is chipped free of the rebar. The column extension and future concrete removal area should be planned to be above the range of barrier cables.
- Extend the elevator and stair areas during initial construction to be in place for later expansion.

When designing the first-level expansion floor, consider the new casting loads on the existing garage in the design. A good solution to reduce the loading on the existing garage is to first pour the post-tensioned beams up to the slab soffit. Cure and tension the beam, release the beam shoring, allow the beams to carry deck formwork loads as the decks are poured, tension the decks and release them. With this approach, reshores may not be needed for existing levels of the garage to remain open or to allow their use with no restrictions.



*Extend the columns above the top slab level to accommodate future reinforcing lap lengths.*



*Pour and tension beams of the extension level first. Use the beams to carry the deck formwork load.*