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The Featured Article for Volume 58 (December 2023) of *Structures* is now available. Chosen by Associate Editor John Orr, the article discusses precast concrete wall panels and their connections between other structural members.

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Editor's Featured Article

Out-of-plane behaviour of dowel type precast panel-to-foundation connections

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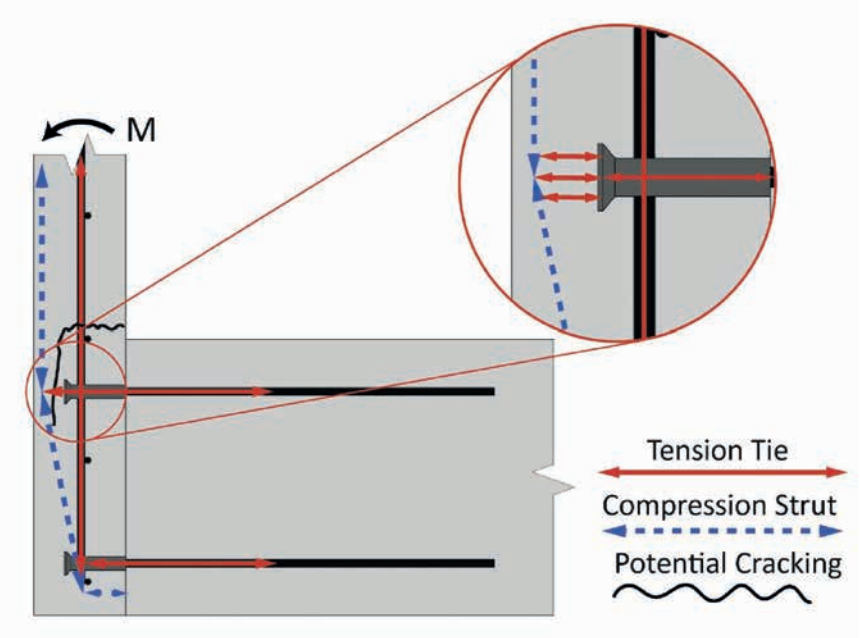
Precast concrete wall panels are a common structural system, particularly in low-rise industrial and commercial buildings. In past earthquakes the connections between precast concrete panels and other structural members have been found to perform poorly. Fourteen panel-to-foundation assemblages were tested to investigate the out-of-plane performance of common connection detailing. These connection details included both dowel starter bars formed from conventional reinforcement, such as hooked bars, as well as starter bars connected to the panel via the use of cast-in threaded inserts. Variations in panel strength and connection strength were incorporated across the range of tested assemblages, and both cyclic and monotonic loading conditions were considered within the test program. It was found that conventional starter bars performed well because the presence of the hook returns of the starter bars within the joint region elevated the joint strength. Conversely it was found that panels having threaded inserts performed unsatisfactorily due to flexural cracking that propagated vertically behind the insert heads, leading to separation of the panel from the starter bars. It was determined that because the panels were close to the minimum reinforcement ratio, that the drift demands were very sensitive to the assumed cracking moment of the panel. Due to the brittle behaviour of the panel-to-foundation connection, it is advised that existing panels utilising this connection be limited to less than 2% drift in the out-of-plane direction in order to avoid joint failure.

→| Read the full paper at **https://doi.org/10.1016/j.istruc.2023.105447**



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