

**ASEC 2008
ABSTRACT**

<p>Title of abstract:</p>	<p>Major advantages of unpropped construction using a versatile, ultra long-spanning composite flooring system in steel-frame building construction</p>
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<p>Abstract:</p> <p>Your abstract must use Arial 10 font and not be more than 250 words in length.</p>	<p>The ongoing research and development of a versatile, ultra long-spanning, combined steel formwork and reinforcement system has allowed the design and construction of composite floors with unpropped spans of up to 8.5 metres.</p> <p>In order to span such a large distance, the system has been designed to utilise a number of unique features, in particular panel voiding and longitudinal precambering. These features allow a designer to significantly reduce the overall slab depth, volume of concrete, long-term incremental and total vertical deflections, and/or amount of conventional reinforcing steel compared with off-form concrete floor construction. The versatility of the new system also permits very flexible panel configurations to be constructed in order to cater for specific project requirements, for example heavy-loading situations involving large point loads and columns.</p> <p>When used in steel-frame building construction, the new flooring system can provide very significant savings in the amount of structural steelwork that is used, by reducing the overall weight of the floor, and even possibly completely eliminating the need for secondary beams if the panels span unpropped between primary beams. An added advantage is that much fewer steel connections are needed, and therefore it can be economical to use moment-resisting steel connections that provide crack control in exposed environments like car parks. Savings in foundation costs and increases in speed of construction can also be significant.</p> <p>A brief parametric investigation is undertaken to study different arrangements of secondary and primary steel beams. Detailed case studies are presented, that provide details about a range of design and construction issues, that clearly show the major advantages to be gained from using this world-leading composite flooring system, compared with conventional steel decks that all require regular, closely-spaced secondary steel beams.</p>