

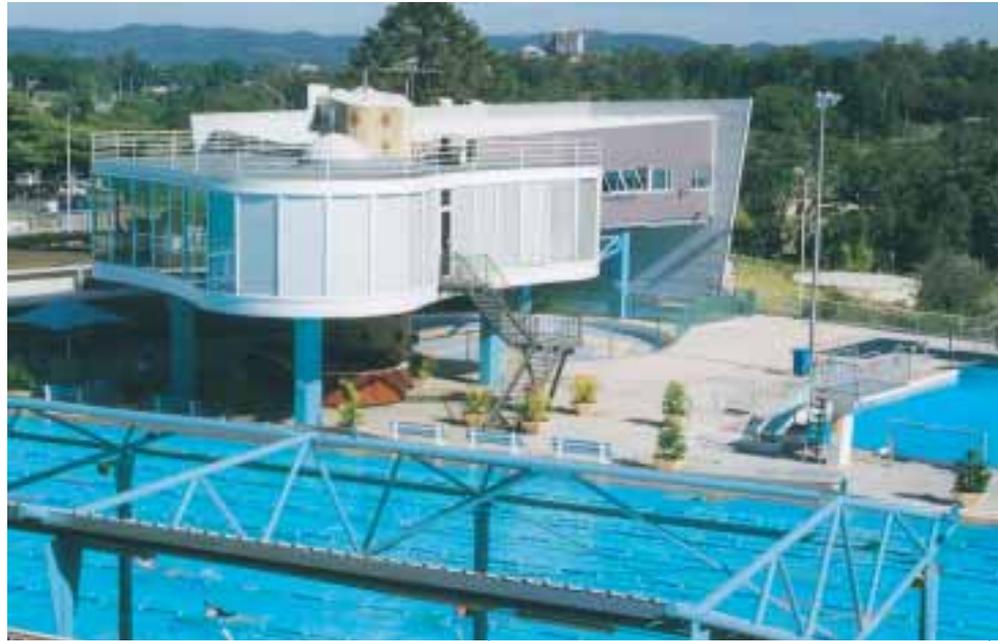
# Bondek Floor Construction

This case study was written at the time when OneSteel was part of BHP. In that context, in some instances within this case study, reference may be made to BHP.

Steel floor framing and steel decking were selected for two diverse Brisbane projects, both of which featured difficult sites and capitalised on the long spanning characteristics of steel.

## Centenary Pool

The landmark Centenary Pool, built in 1959 to celebrate Queensland's centenary, was Brisbane's first Olympic Pool. The original design was conceived as a landscape on which a number of geometric building forms were arranged. With the recent redevelopment for client Stockwell Building and Development, Architect's Phillips Smith Conwell Pty Ltd have continued the geometric form by the addition of a quadrant-shaped medical building (sports medicine) which radiates from the existing amoeba-shaped central building and links with a further building in the shape of a rhomboid. The central hub, previously used as a restaurant, is heritage listed. In the redevelopment,



the hub has been converted to a personal fitness centre and provides patrons with panoramic views over the complex's various swimming pools, and the urban landscape beyond. The quadrant-shaped medical building extension spans over a bathhouse, also heritage listed, and required a long-spanning floor structure with a structural form, on the highly visible northern face, which was sympathetic to the original design. The architects opted for an inverted bowstring truss, fabricated from SHS members, for the main structural element, thereby adding to the assemblage of interesting building shapes on the site. The 19m span trusses radiate from the central hub structure.

Engineer's Mateffy Perl Nagy (Qld) utilised a composite concrete / Bondek floor system for the medical building with the steel decking being supported on steel beams spaced at 2.8m centres. The self-supporting decking acts as both permanent formwork and reinforcement to the slab and eliminated the need for propping down to the wading pool below. The use of steel framed walls incorporating light gauge cold rolled steel sections, and a steel framed and clad roof, assisted in minimising the mass of the new medical wing, thereby improving the cost effectiveness of the long spanning structure.

Long span construction was also required to achieve column-free spaces in the existing grandstand, which is situated adjacent to the Olympic Pool.

The grandstand roof canopy was designed as a stepped shade structure comprising a 'solid' roof of traditional steel purlins and cladding which is located to the rear of, and slightly below, a shade canopy. This roof cladding combination allows winter sun penetration, shade from summer sun and permits excellent viewing of the overall complex from the main thoroughfare, Gregory Terrace, located to the east. The roof structure comprises exposed steel trusses fabricated from tubular steel hollow sections, spanning 9m at 6m centres. The open truss form reinforces the lightweight feeling created by the fabric roof.



*Bowstring truss and Bondek composite flooring at the Centenary Pool redevelopment.*