

CASE STUDY

Pavement Solutions

MCG ATHLETICS TRACK - COMMONWEALTH GAMES

2018 EDITION



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Project Impact Statement

To place asphalt surfacing to a highly accurate level on a sand bedding at the MCG for use as a base for the synthetic mat 2006 Commonwealth Games Athletics Track.

Client/Construction Team:

Client: **Mondo Pacific**
 Sub-contracting to **Grocon** contractor for the 2006 MCG redevelopment project
 Contractor: **Boral Asphalt**

Project Scope

Following the AFL Grand Final the existing turf of the MCG had to be removed and the sand base prepared and compacted in preparation for asphalt surfacing to which the synthetic athletics track could be glued.

From this point on, the make-up of the grounds would change a number of times before returning to its traditional playing surface for the 2006 Football Season after the 2006 Commonwealth Games.

Technical Conditions

To minimize the extent of work and time required for each change, it was considered necessary to retain and top up the layer of sand in all phases of the grounds construction.

During the first stage, after the synthetic track was placed on asphalt it was covered with another layer of sand to allow the MCG to place turf required for the Boxing Day Cricket Test Match. Closer to the 2006 Games this turf and sand would again be removed to expose the athletics track.

The various stages of grounds composition are shown in the schematic below.

Apart from the technical challenges, a major demand on the project was to adhere to a strict timeframe of completing all asphalt works within 12 working days so that other construction activities at the MCG could continue on schedule for the 2006 Commonwealth Games.

Testing Conditions

Two trials were undertaken prior to main works at the MCG to determine how feasible it was to run a paver on sand without disturbing the surface to such an extent that levels and quantities would be difficult to manage.

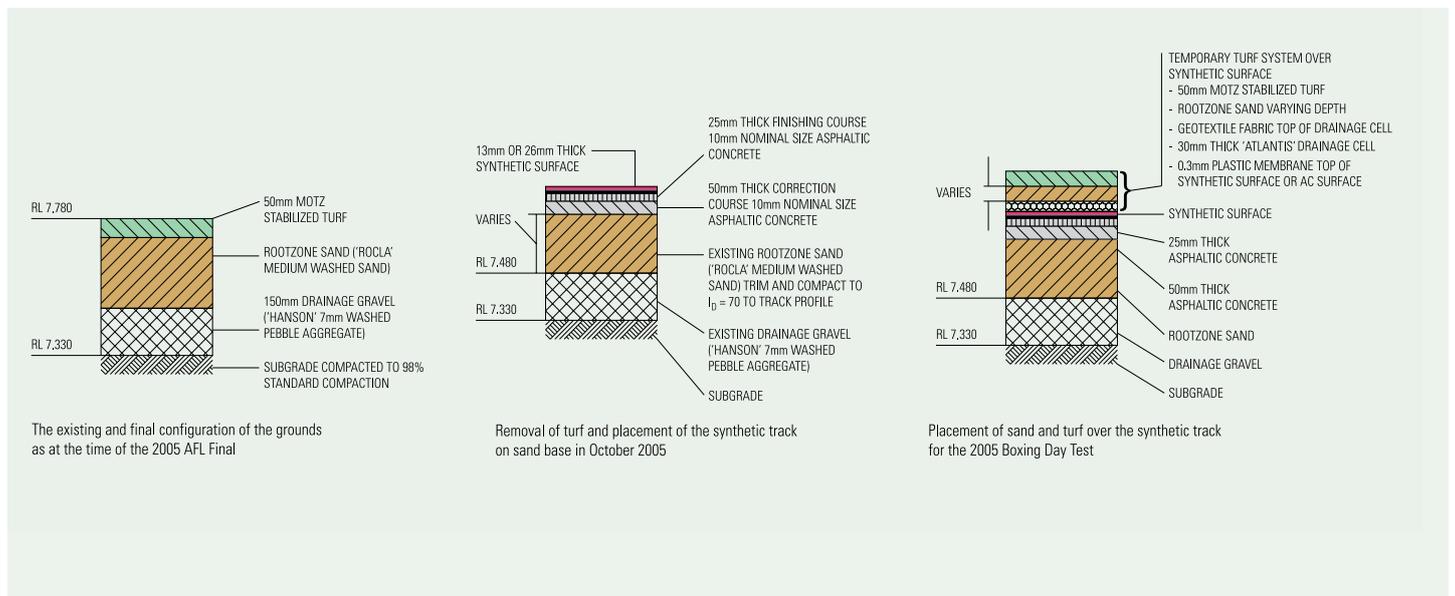
The ability to place an asphalt surface with less than 3mm difference in level along any 3 metres, and less than 1mm average difference in level over the whole running track was critical to the project.

All Boral Asphalt work in Victoria is usually undertaken with wheeled pavers but these are unsuitable for working on sand. Trials with a tracked paver proved it would be much better for this purpose.

Delivery of asphalt to the paver was another major challenge. Plywood boards were used under delivery trucks to distribute wheel loads and to prevent deformation of the sand base.

The purpose of the trial was also to ensure that the sand could be placed on a synthetic mat above the asphalt, and turf successfully grown on top to hold the Boxing Day Cricket Test.

The trial site was subjected to harsh summer conditions in open paddocks and proved that the concept could work.



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Performance

Asphalt works commenced on 11th October and were completed on time, meeting the first critical target of the project.

Prior to commencing placement of asphalt it was necessary to saturate the sand with water to minimize movement during asphalt works and to ensure that an adequate anvil existed to compact asphalt.

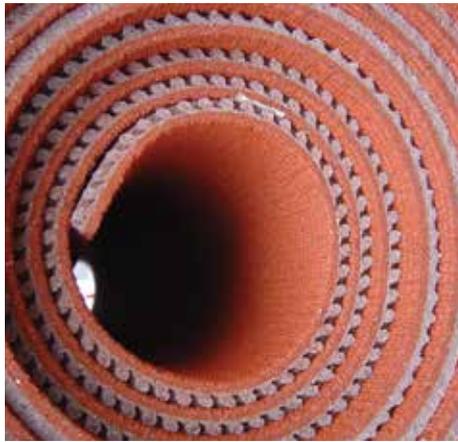
Boards were placed leading to the paver to allow access by delivery trucks. Attempts to use a shuttle buggy were unsuccessful due to the bearing load of the vehicle.

Staging of the works was carefully planned and executed to optimize daily output and minimize total time taken.

After approximately 12 days, the proposed athletics arena for the 2006 Melbourne Commonwealth Games had been prepared with asphalt to the level of accuracy desired and with little disturbance to the sand base.

Just over 12000m² of turf was laid over sand and the synthetic-surface-covered asphalt mat by 30th November 2005.

The turf was removed after the Boxing Day Test to reveal the track, which was successfully used in the Games on 15th March 2006.



Design

Mondo Pacific prefer an asphalt surfacing because it provides a flexible bound surfacing with adequate deformation resistance and shape control. This helps the synthetic surfacing meet the tight tolerances imposed on finish levels by international Olympic standards.

The asphalt chosen for this project had to provide sufficient deformation resistance, bridge any weaknesses in the sand base for at least eight months, and yet be workable enough to achieve accurate levels even if extra back-rolling was required to achieve this.

The structure adopted to meet these conditions was:

25mm	Size 7 Type H Asphalt
50mm	Size 20 Type SI Asphalt
75mm	Asphalt thickness

Client Testimonials

Our client Mondo Pacific and other stakeholders, Grocon, Clifton Coney and the MCG were unanimous in praising the performance of asphalt works carried out by Boral Asphalt.

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SDS: A Safety Data Sheet is available upon request by contacting Boral Asphalt customer service.

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