

the pavers resembles cobbles, but in fact they are 300 x 200 x 75mm road pavers.

"This made construction of the road significantly quicker," said Project Manager Martin Harrop from the Mandurah City Council.

Challenge Brick Paving (CBP) started work in September 2010 and have been on site for nine months. They will be on site for another two months to complete the associated remedial works outside the original contract.

"The City has been very happy with the performance of CBP in the completion of their contract within the Mandurah City Centre. The project was of a major scale and being within the city centre, provided challenges to ensure businesses were not adversely affected. This required contractors that were reliable, flexible and capable of carrying out quality work over a period of six months. Challenge Brick Paving have been extremely reliable and have completed the required jobs to a high standard, resulting in an excellent finished product," said Mr Harrop.

CBP have been looking towards the future in this type of work, whereby large format paving is installed in large volumes. For some years now they have been seeking a difference in style, along with architects, designers and builders.

"We had installed this type of paving in the past and consistently suffered injuries to staff and hence we have avoided this type of installation," said Director of CBP Paul Francis.

To overcome this issue the company invested in the staff and the future with the purchase of a transportable vacuum installation machine that can lift these units, making them virtually weightless for the operator.

"You can install three to four units at a time, depending on size and weight, and that is an increase in productivity," he declared.

CBP have been very pleased with the operation of this vacuum machine; during the installation of these larger units over the past nine months they have, to date, remained injury free.

The project was not delivered without some challenges. The existing streets and landscapes lacked pavement subgrade soil as it was an old part of Mandurah.

". . . and some services were not where they were supposed to be," added Mr Harrop.

"The cooperation of all contractors was exceptional and permitted expedient delivery of the project, given that we had to cease construction over Christmas and school holidays," he continued.

The project included an initial survey and design works to a value of \$200,000, but the project has also delivered:

- Stormwater upgrades - \$670,000
- Underground power - \$1,515,000
- Pavement works - \$1,250,000
- Street lighting upgrades - \$300,000
- Verge works - \$1,300,000
- Landscaping - \$265,000

Developer: Mandurah City Council

Builder: Various

Design: City of Mandurah

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Challenge has expanded from its 5 self contained trucks to 6 trucks to include another complete set up with a Mechanical and Vacuum laying system.



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Safer streets for Mandurah

The purpose of the Mandurah streetscapes project was to create a pedestrian-oriented town centre with streets to facilitate a more vibrant, safe and enjoyable environment for residents of the City of Mandurah as well as visitors and tourists.

The key aim for the project was to improve the City of Mandurah's CBD streets and to increase the activity within the vicinity, to be both engaging and interesting to the public.

This was achieved by the design and the development of the landscape, and by creating an attractive area for all residents and visitors to the region. It was also important to develop safer streets with better traffic management for pedestrians and increased street lighting for all users.

The project has created a shared pedestrian and vehicle environment to make it a safer place. The road surface and footpath along Sholl Street and Tuckey Street have been constructed at the same level to improve pedestrian amenity and reduce traffic volume and speed.

The streets have become greener with the enhanced streetscape, including trees and planted sections to create attractive and inviting, shady streets.

The streetscape has also been improved with upgraded street lighting, the removal of overhead power lines, better paving treatments and new street furniture.

There has also been improvement in street parking by replacing the 900 car parking on Sholl Street with parallel parking.

The improved stormwater management has meant an upgraded drainage system and the construction of 'rain gardens' to filter and improve the quality of stormwater.

Key elements that have been delivered in the project:

- Upgrade of streets to promote activity within the CBD.
- The environment is more appealing and people-friendly.
- Safety, in the management of traffic and anti-social behaviour.
- Pleasure in a pedestrian-friendly, improved landscape.

The \$5.5 million project was commissioned by the Mandurah City Council, funded by the Better Regions Programme through the Department of Infrastructure, Transport, Regional Development and Local Government and was constructed by Gavin Constructions.

The construction commenced May 2010 and was completed in May 2011. To accelerate the construction process and to decrease the disruptions the majority of road pavement works were carried out at night and utilised profiling technology to reduce construction timeframes.

The project included 8500m² of pedestrian paving with Urbanstone large-format concrete paving, and over 1.2km lineal metres of road works.

The Mandurah City Council commissioned the manufacture of unique cobble pavers by Urbanstone. The mould created for