

# Mercedes Benz World, Old Brooklands Circuit Weybridge, Surrey



## Priora permeable block paving, Mercedes Benz World, Weybridge

### Challenge

Completed in 1907 at a staggering cost of £150,000 equivalent to millions of pounds today, the Brooklands Circuit at Weybridge was the world's first purpose-built racing circuit. It hosted legendary motor racing events between 1907 and 1939, including the first British Grand Prix in 1926.

Mercedes-Benz World opened in 2006 and is the company's largest retail site in Europe and offers visitors a chance to experience the entire spectrum of Mercedes-Benz models, products and philosophies. Alongside an unparalleled display of new and used cars which are displayed in the 21-metre high building, a brand gallery allows guests to see some of the rich heritage and history of the world's oldest car company.

Mercedes-Benz World includes 2.5 kilometres of test circuits, available in nine configurations. Customers can experience, in safety, how their new car handles at speed, thanks to low-grip wet circles. This controlled environment promotes driver safety and gives Mercedes-Benz owners current and future, the chance to experience extreme road conditions with low risk.

The major wet circle located directly in front of the prestigious main building traditionally drained surface water in to a central soft landscaped area. However, due to excessive rainfall and frequent surface water from sprinklers servicing the wet circle, the soft area was prone to ground water flooding and had difficulty in recovering and maintaining vegetative cover resulting in an

unsightly area which could have been potentially hazardous to users of the circuit.

Part of the challenge was to dig out and re-fit the soft area between scheduled major outside events, this meant that only 10 days were given over to block paving installation.



## Marshalls

Transforming Britain's Landscapes



### Machine lay Piora installation

#### Solution

Marshalls were brought in to advise on the most suitable hard landscaping option due to their expertise in this area. The existing soft landscaping in the centre of the wet circle was excavated to a specified depth and replaced with a Piora permeable pavement construction. The existing pump access chamber cover was raised in the centre of the circle to suit new levels. The existing sprinkler system bases were left insitu and existing Marshalls' Decathlon linear drainage around the circumference of the soft area was cleaned out and retained.

The Piora permeable block paving construction is an infiltration system which allows surface water through the pavement joints and into the pre-designed permeable sub base. With Piora permeable paving, ponding is eliminated and contaminated run-off water is dealt with in an environmentally manner. Hydro carbons breakdown naturally within the sub base and major spillage events remain contained within a small area which does not get channelled into local river eco-systems.

The original design incorporated retention channels within the pavement. However, the unique interlocking properties of Piora enabled the design to be simplified and for the restraints to be removed. This saved both cost, and most importantly with this contract, time.

Because of the particularly sensitive programme, Marshalls suggested their Machine Lay Solution was engaged in order to significantly reduce the installation window without increasing the labour element and therefore the cost.

By involving the Machine Lay installer early in the process, installation, detailing and pre-contract planning advice was provided to ensure that the installation was as time and cost effective as possible. Joint project management between the installer and Marshalls throughout the duration of the project ensured the contract was completed on time and to a quality standard.

The soft area equated to an area of around 3000m<sup>2</sup>. An area of this size would traditionally take a four man gang around nineteen days to screed and

install a fully trafficable pavement. An experienced four man Machine Lay installation team completed it in just nine days.

Mechanical screeding of the permeable laying course aggregate speeds installation, reduces manual labour and because it is permeable, can even be screeded in the rain.

Machine Lay block paving is delivered to site in pre-fabricated laying formations, where trained independent installers take the product directly from the pack using specially designed machines with laying clamps and place it on the laying course in clusters of 64 blocks at a time, or 1.28m<sup>2</sup>. Around 3 to 6mm of Piora Aggregate is used to populate the joints allowing surface water to pass through into the sub base and brush attachments to standard plant speeds the joint filling processes.

**Benefits**

Mercedes Benz World now has a cost effective sustainable surface water solution which will dispose of surface water at source. Marshalls SUDS solution along with their machine lay expertise has ensured that the completed project is aesthetically pleasing whilst providing a durable wearing course with easy reinstatement properties.

Using Marshalls Machine Lay offer provides a cost effective mechanical installation equivalent to hand lay installation methods and significantly reduces the manual handling in all of the installation processes.

Marshalls' sustainable urban drainage solution on the project has meant that there is no need for the removal of additional underground pipework and excavation, labour and costs associated with traditional drainage methods removes the burden of additional surface water to existing foul sewer systems



**Pallets of Marshalls Piora ready for installation**



**Expert installers put the finishes touches to scheme**

**Client:**

Mercedes Benz World

**Contractor:**

Construction Consultants Ltd

**Consulting Engineers:**

Gifford

**Machine Lay Installer:**

On Level Paving

**Marshalls Product Used:**

- Machine Lay Piora Permeable Block Paving

**Specialists Involved:**





Installation in progress