

Case study

Ashby Villas, West Bolden



- Charcon Infiltra permeable block pavers allow gaseous exchange and water penetration to tree root systems
- Synthetic Geogrid reduces soil compaction
- Available in a range of colour mix options, Infiltra has all the strength and performance properties of Charcon's established range, with the added environmental benefit of sustainable drainage. It can be easily lifted for access to services and reinstated without leaving any repair scars, offers high levels of durability and good grip

Key facts

Key vendors: Mr Clark
(homeowner)
Site: Mr Clark (homeowner)
Sector: Housing
Client: Mr Clark (homeowner)
Contractor: MC Paving

Brief

Tyne and Wear homeowner Ron Clark wanted to construct a new hard standing driveway to provide vehicular access to his property. Planning restrictions required him to look beyond traditional driveway methods towards a Sustainable Drainage System (SUDS).

This pre-war home, located within a Conservation Area in West Bolden is surrounded on three sides with more than 50 mature trees, some of which are 100 years old. Given the location and the Tree Preservation Orders in place, the design and construction of a new driveway to his property needed careful consideration.

Requiring access to his land from the road, Mr Clark submitted a planning application to South Tyneside Council for a driveway fifteen metres long, seven metres of which would be built on an incline leading up from the road. The planning application was initially rejected on two grounds.

Firstly, it was felt that the weight of a vehicle on the drive would impact on the underground water percolation patterns in such a way that it could restrict the flow of water to the roots of the mature trees.

Secondly, because of driveway's incline, there was concern that rainfall surface water would run-off towards the public highway and would be lost to the tree root systems.

Solution

- To work in conjunction with a local Arboriculturist to produce a report giving an up to date tree location plan detailing the health of the trees
- Use new modern methods of driveway construction that would overcome the conservation issues
- Use proven products from the heavy construction industry – these are now increasingly being used in lesser demanding roles and are approved by some local authorities for the construction of residential driveways and parking areas close to trees. The two major products to provide the solution were Synthetic Geogrid and Infiltra permeable block pavers
- Create a surface that would allow rainwater to filtrate through the block paving instead of running off the slope. Infiltra permeable block paving was specified to allow water filtration

Driveway construction

A synthetic geogrid was laid over the subgrade area and covered with 20-40 mm grade clean crushed stone, which was compacted to form a 100 mm thick subbase. This effectively created a reinforced platform to spread the load of a vehicle on the drive over a large area.

A woven Charcon geotextile was then laid down to cover the subbase area. The geotextile was covered with 5-20 mm grade clean crushed stone and compacted to a depth of 50 mm, on top of which was placed a second geotextile layer. Granite chippings (3-6 mm) were then laid and compacted to a depth of 40 mm. Finally, Charcon permeable pavers were laid and granite chippings brushed into the cavities created by the 5 mm nibs on the blocks.

Results



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The use of permeable concrete block paving, together with the chosen geogrid and geotextile layers, allowed the planning condition objectives to be achieved by the elimination of surface water run-off to the road and by maintaining water flows to the roots of the trees.

Our businesses supplying

- Charcon



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