

ULTISUDS

Proven performance

POROUS, FAST DRAINING CAR PARK SURFACE FOR LARGE LOGISTICS CENTRE

Background

This large warehouse and logistics centre in Dunfermline required a new staff car park surface for the external paved areas. Planning requirements meant that a porous system was required to enable sustainable drainage and avoid large scale run-off into the surrounding catchment. The site was in operation 24 hours a day, seven days a week so the surface would be in constant use by the 2000 staff employed there. This meant that the final surface would need to be durable as well as providing excellent drainage. Closure for flooding or repairs was not an option.

The challenge

After discussions between Luddon the main contractor, Cundall the appointed design engineer and Tarmac's regional team, ULTISuDS a BBA HAPAS accredited porous asphalt was recommended as the solution. ULTISuDS is designed to help manage surface water. The open structure means that rainwater quickly flows into the pavement and is temporarily held in the aggregate layers which delays discharge into the local catchment. This reduces the risk of local drainage systems becoming overwhelmed after heavy rainfall. It avoids surface water and also reduces ice formation in cold weather, making car park surfaces safer for vehicles and pedestrians.

Cundall, the multi-disciplinary engineering and design consultancy produced the pavement designs. It would consist of Tarmac's ULTIFLOW specialist base aggregate, an ULTISuDS Base and Binder course finished with 45mm of 0/10mm ULTISuDS surface course asphalt. ULTISuDS combines excellent drainage with impressive long-term durability in lightly trafficked areas such as commercial and residential car parks. Designed aggregates deliver the consistent void content required to achieve excellent drainage performance and a modified binder provides cohesion and enhanced long term durability. It would be used as part of a hybrid design with dense hot rolled asphalt roadway and porous parking bays.

Pavement design

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Results and benefits

Around 2500 tonnes of UltiSuDS was supplied to the site and laid by the contractor Luddon construction. Using ULTiSuDS as part of a full infiltration system avoided the need for additional groundwork to install additional drainage systems which reduced costs and avoided extended site closure. The new porous surface was tested shortly after installation as part of a demonstration of the drainage capability of the SuDS system (see video). The results were impressive, with the system performing exactly as designed.



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