

SuDS Permeable Paving

Car Parking, Sudspave 40, Wexham Park Hospital, Slough, UK



CASE STUDY



Project Description

Wexham Park is a large NHS Trust hospital providing multi-disciplinary health and emergency services; including trauma and orthopaedic surgery, paediatric, coronary care and maternity care, amongst other services. Staff parking at this large facility was inadequate, so the Frimley Foundation Trust decided to develop an adjacent greenfield site to provide an increased number of parking spaces and to reduce the amount of on-road parking which was adversely affecting local residents.

The Challenge

The proposed new car park was subject to planning restrictions which stipulated that the new surface must be designed to allow surface water run-off rates to remain at the same level as pre-development. Site investigation reports indicated that the subgrade soils were suitable to allow surface water infiltration, but the costs of permeable asphalt or concrete block paving exceeded the available budget.

The site investigation also revealed variable ground conditions, including some very soft areas. In order to maintain structural integrity, as well as meeting the required rates of surface water infiltration and attenuation for the Planning Conditions, the subbase design thickness needed to increase and utilise a permeable DoT Type 3 stone.

This presented a challenge for the structural design team, because it also meant that the increased subbase depth would require an increased number of deliveries of more expensive aggregates.

Project Information

Client	Frimley NHS Foundation Trust
Contractor	Aggregate Industries - Spadeoak
Consultant	Abstract Consulting
Products	Sudspave 40, Abgrid, Terrex
Quantity	6,500 m ²

Benefits

- Surface water management
- Reduced subbase depth
- Surface water run-off treatment
- Carbon footprint saving
- Material cost savings



ABG LTD

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The Solution

ABG's in-house Design Team proposed a subbase design which utilises their unique Abgrid geogrid to reduce the thickness of DoT Type 3 stone required to achieve structural stability. An ABG Terrex NW non-woven geotextile layer was also proposed, to provide an additional stage of treatment for the infiltrating water. Overall, the incorporation of ABG's proposal provided a shallower construction profile which resulted in reductions in site excavation, off-site tipping, DoT Type 3 stone volumes, deliveries and associated costs.

ABG Sudspave 40 gravel-filled cellular permeable plastic paving was installed to provide robust, sustainable and permeable retained gravel surfaces for traffic aisles and parking bays. Sudspave porous pavers enables rainwater to infiltrate directly into the surface and through to the subgrade, whilst also receiving surface water run-off from adjacent asphalt areas, fulfilling strict planning requirements for drainage.

The ABG Service

Full subbase design, taking into account structural, hydraulic and treatment requirements. Technical support for required design approvals and on-site installation guidance. Scheduled deliveries to meet site programme.



Permeable gravel car parking bays and access routes

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