

SuDs details

Please see below details required for the above application regarding SuDs and foul water:

Foul water

The site already benefits from a cesspool. However, this was very basic, and it has been upgraded to a **Kingspan Klargestar 4,800 Litre Shallow Dig Cesspool**. **The benefit of this tank is:**

A Klargestar shallow dig cesspool provides a reliable solution for locations without mains drainage, where the discharge of treated effluent is not permissible due to unsuitable ground conditions, or where infrequent or seasonal use, such as a holiday home, would prevent the successful functioning, for example of a packaged sewage treatment plant.

- Klargestar cesspools provide quality and reliability as they are constructed from non-corrosive materials and are priced competitively.
- Easy to install, with minimal on-site installation time
- Each cesspool is tested to ensure it is watertight and is structurally sound.
- For added safety cesspools can be supplied with a lockable man cover.
- High Level Alarm so the tank will never overflow.
- Constructed from non-corrosive materials in line with BS 6279: 1983 regulations.

The size of the tank is ample for the intended occupants.

Surface Water Drainage

There is an existing water ditch which runs along the front boundary of the site. This has been cleared of all rubbish and remains in use for any excess surface water. The site is within an area which has a very low risk of surface water flooding. Any surface water drainage which may occur will also be reduced significantly by using a permeable material. Ordinarily, gravel can easily be displaced by car tyres, however interlocking permeable paving grids help retain the gravel in the right place, all whilst minimising flooding risk by storing and discharging excess stormwater back into the ground.

Features of permeable asphalt and permeable paving:

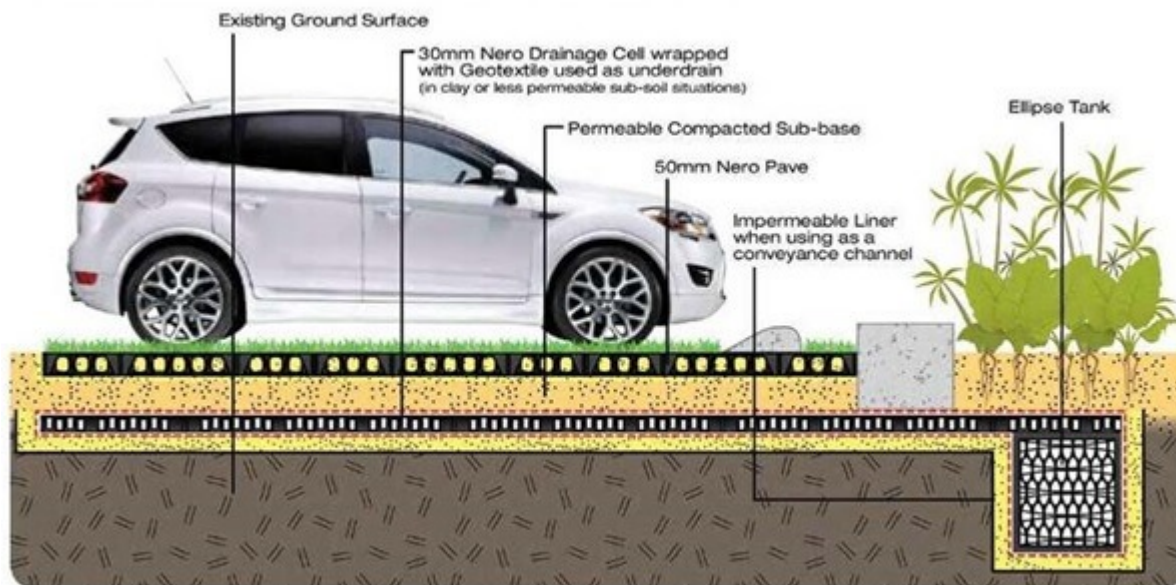
- High load capacity suitable for foot or vehicular traffic - up to 230 tonne per square metre
- Allow rainwater to permeate and infiltrate
- Reduces flooding or pooling of water
- Easy installation thanks to lightweight materials

Permeable asphalt and paving allow for water to seep and infiltrate back into the ground rather than being obstructed by a solid surface and causing flooding. Nero Permeable Paving has a load-bearing capacity of up to 230 tonnes, meaning it can withstand vehicular weight exceptionally.

Compared to the traditional methods of paving such as using concrete slabs or stones, Rainsmart Nero Pave has a wide variety of benefits ranging from environmental to the low maintenance of the product.

Unlike typical solid paving materials, the Nero Paves recycled polypropylene material can be used to create a permeable paving surface, allowing water or other liquids through to the grass or gravel beneath. This keeps the soil hydrated and healthy, as the Nero Pave provides bioremediation which breaks down pollutants in the soil.

The combination of the plastic material and temporary water storage results in a cooler ground surface and a cooler temperature around nearby buildings when Nero Pave is installed. This is especially useful in the summer heat. The permeable properties of Nero Pave allow for the reuse of stormwater for a variety of different applications. The system on its own allows for stormwater to hydrate soil and grass through infiltration as opposed to channelling it away to a drain.



The above can be used in conjunction with a Rainsmart Ellipse Soakaway Crates (24.2-tonne vertical load capacity) and sufficient non-woven geotextile membrane to wrap all outward faces of the soakaway including the base. The dimensions of the complete soakaway are 1430mm (L) x 800mm (W) x 860mm (D).

Rainsmart soakaway crates have a void ratio of 95% - this is the amount of free space within the crate structure that can be used for rainwater storage. The capacity of this 1 cubic metre soakaway is 935 Litres.

Clips are not required to hold the crates together. No clips on any crate system are structural it is always the side fill on any soakaway installation which adds the stability needed to hold the structure in place. Cable Ties will be used, and these are used purely to hold the crates in place until the gravel side fill has been added.

All outward-facing crate surfaces will be wrapped in a non-woven geotextile membrane, which allows the free passage of water but prevents any soil or sand particles from entering the soakaway, maintaining its long-term efficiency. A 110mm (or 160mm) drainage pipe is fed into the soakaway via one of the four circular 160mm open entry points.

110mm pipes rest on the bottom of this opening and the pipe is then inserted approximately 150mm inside the crate. Geotextile membrane is then installed over the opening first and then a small cross is cut in the membrane at the entry point. We will then peel back the membrane, insert the pipe and clamp the membrane around the outside of the pipe to stop the ingress of any soil particles.

At the entrance, porous asphalt will be used. A permeable asphalt driveway is much like a traditional asphalt and tarmac driveway with the added benefit of allowing natural dissipation of surface water through the surface of the aggregate. This reduction of surface run-off helps to greatly reduce channels of water running off your drive or asphalted area and, as such, helps to avoid overwhelming existing flood management schemes and infrastructure by allowing the water to seep through into the ground below.

Four distinct courses are bound together to define permeable asphalt as a modern development over a traditional asphalt system. A geotextile membrane is first applied, then a granular reservoir before introducing the permeable asphalt binder course and then finishing with the permeable asphalt surface course.