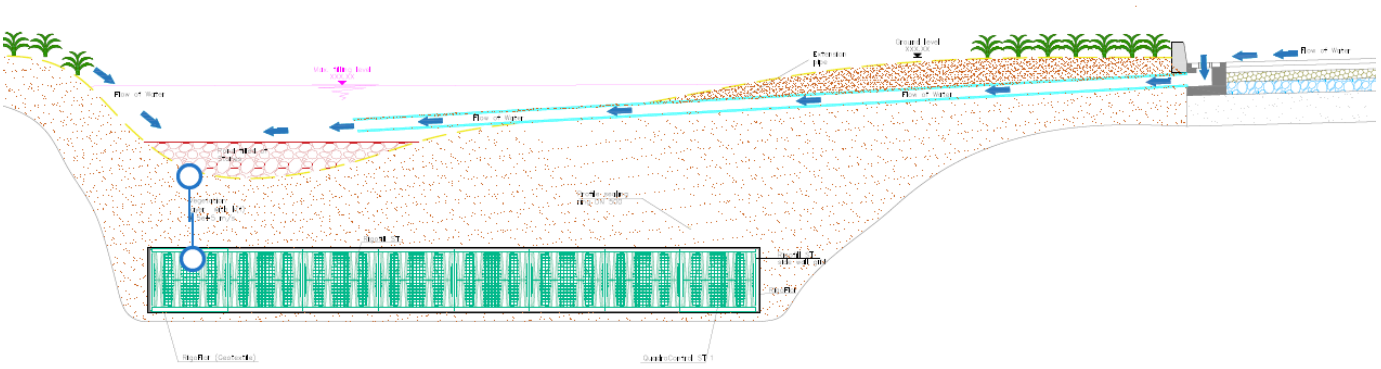
How to Soak the Rain……before it turns into Sewage!

In the Summer of 2019, India topped the global charts for having abstracted the maximum amount of ground water on Earth and this year we have again squandered the elixir from the sky through our road-rivers ☹

Think again, do we ever realise that we are stealing the very life support systems of our grandchildren!!

Yet again, we had again let most of our rainfall be squandered, only some of it was captured in sustainable manner. Green vistas along the road, like above, not only add to visual appeal, but can also save the elixir from the sky from being strangulated to death in our decaying river and lake systems.

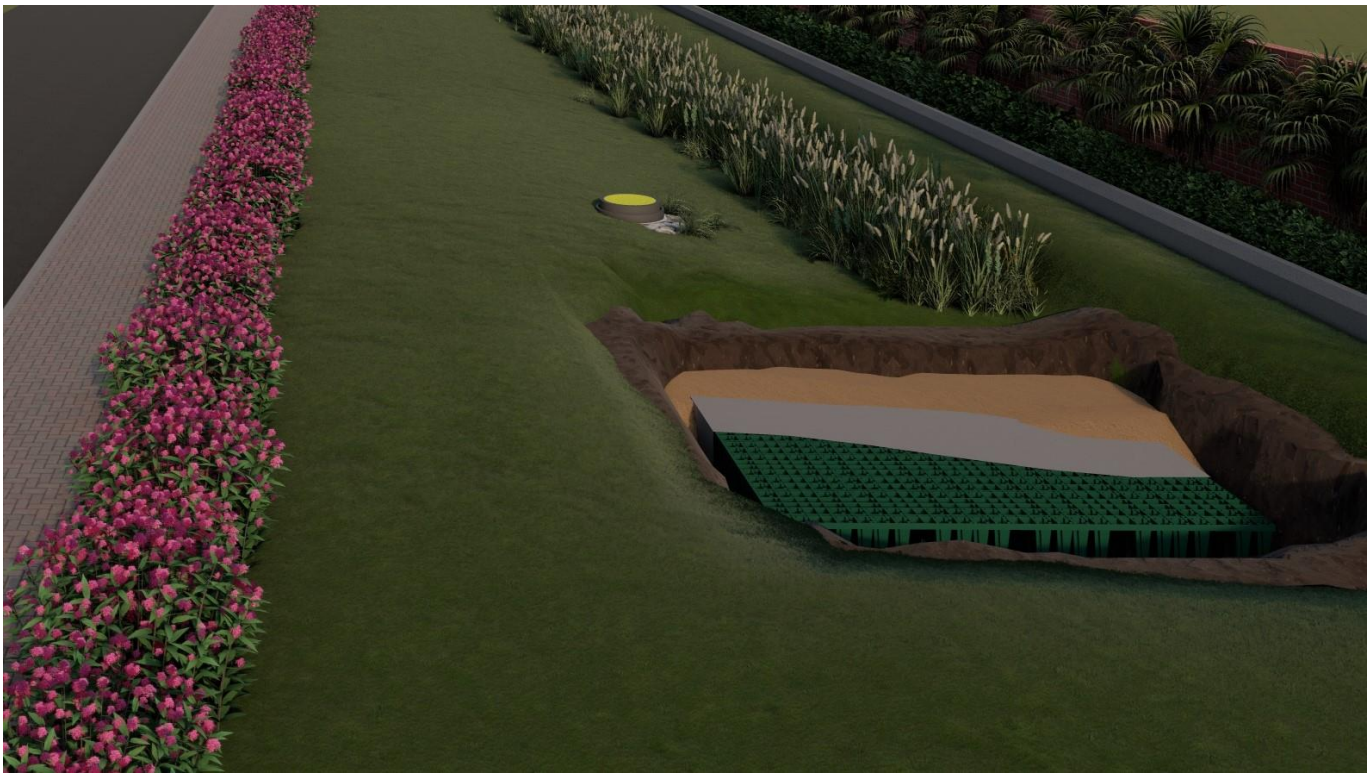
The underdrained bioswales along the road are the perfect answer to resolve the water logging issues, which often create those nasty traffic jams soon after a light rain. Here, rainwater has to filter through the plantation beds or gets discharged through pipe connection via French Drains.



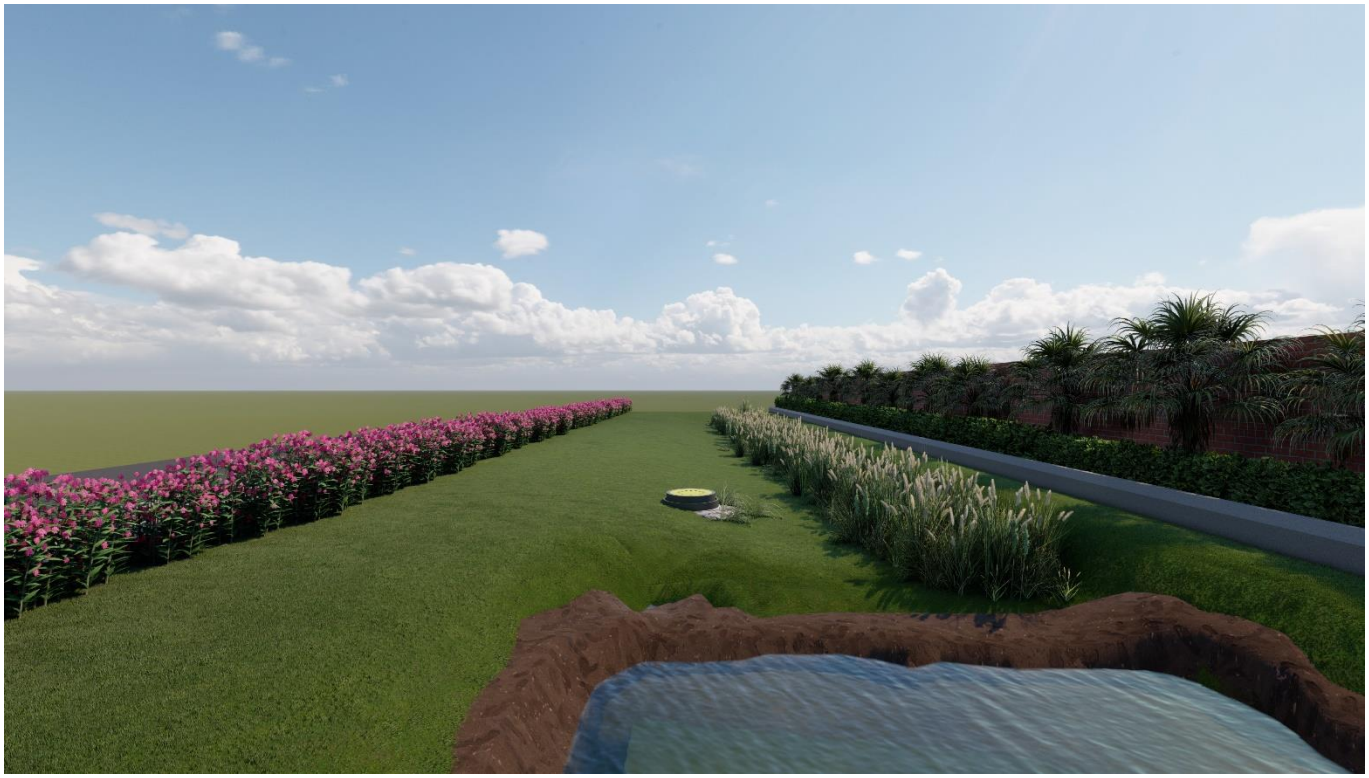
The surface collections from the road are detained in the landscaped features and let to percolate into underground detention basins made out of Geocellular blocks. A clever SUDS consultant can make good use of sustainable landscape to create twin advantage.

The flooded flower beds trap and transfer storm water in a cleaner state due to the phytoremediation capability of the root zone besides creating an opportunity to augment a sheet flow away from the road.

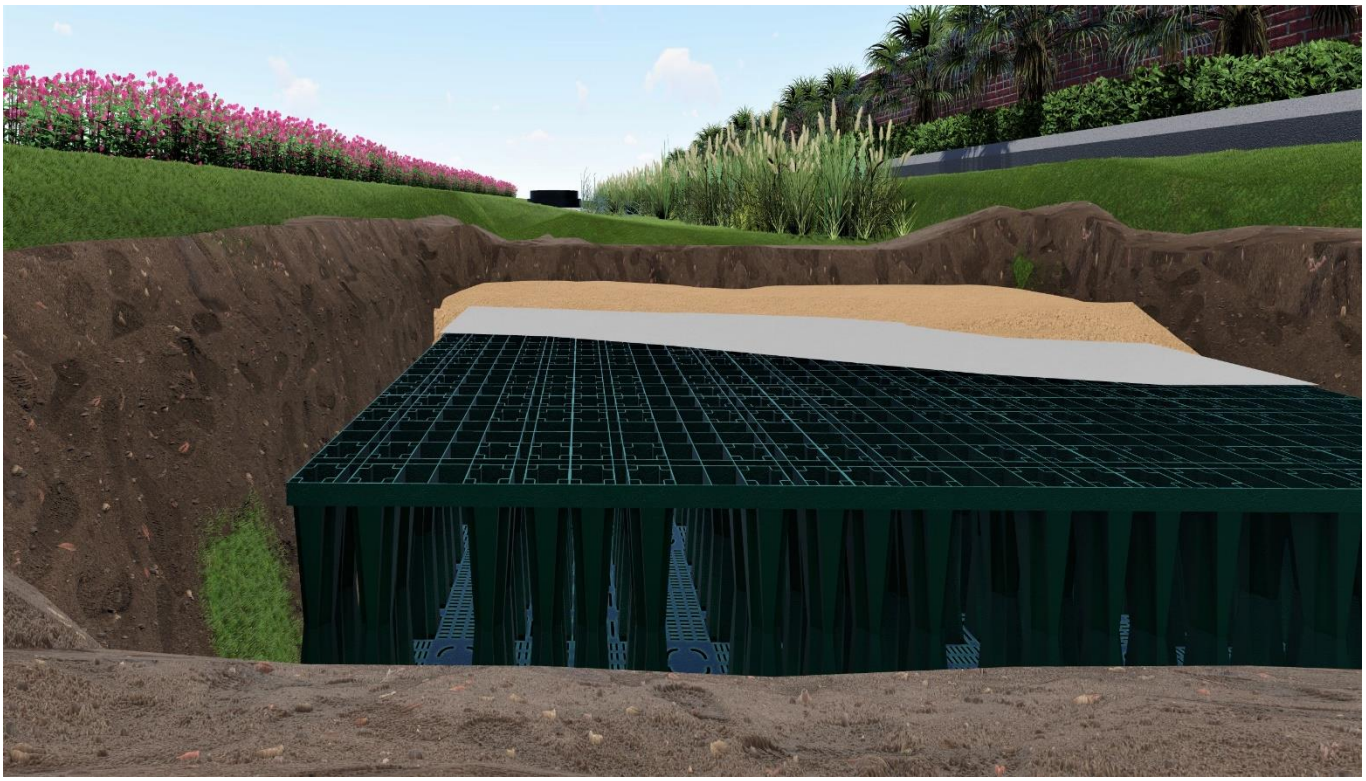
Rigofill-ST blocks from Frankische Germany are extensively being used world-over for augmenting the soak capacity of the green vistas along the roads, especially around the airports, commercial complexes, condominiums, railway stations, industrial parks, warehouse & distribution centres where the proportion of paved surfaces is substantially higher than the rest of the developments.



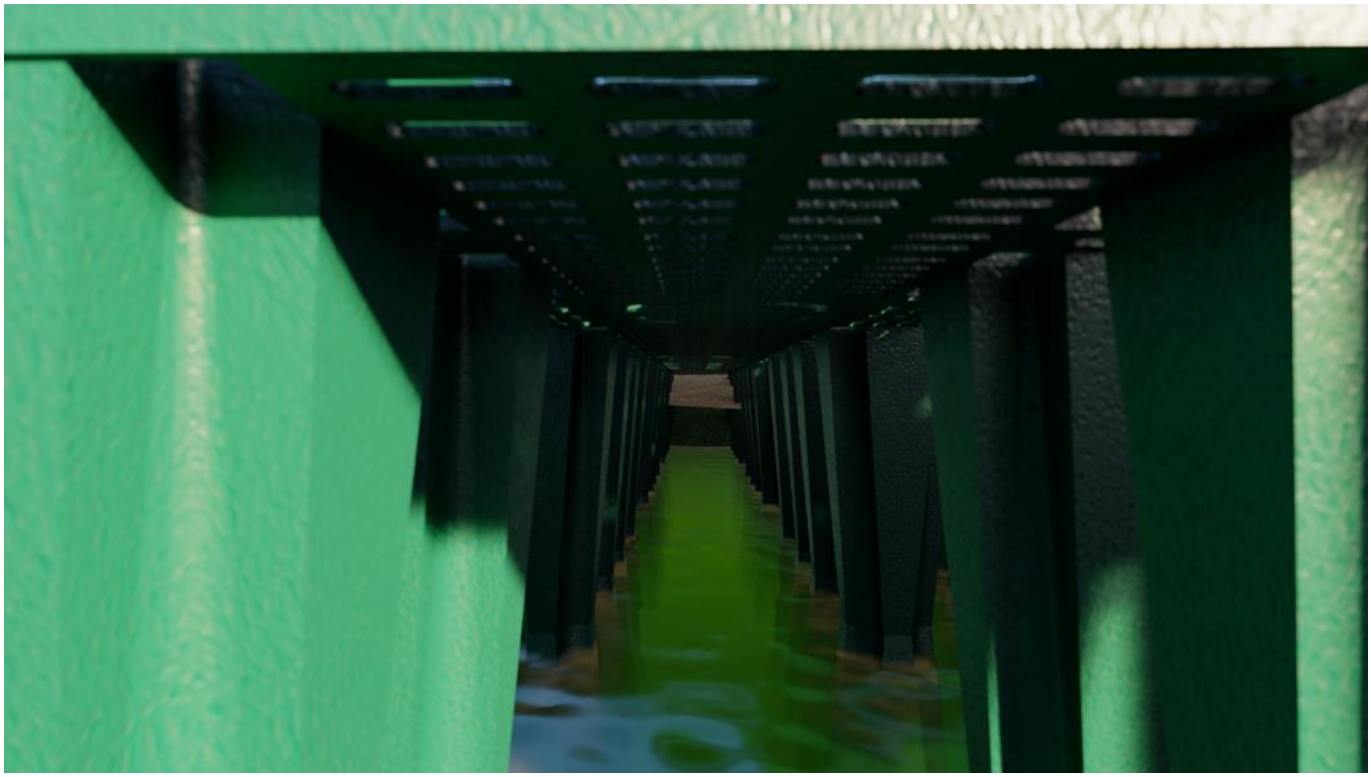
Our solutions can be designed to handle the heavy downpours, which we now see every now and then, by adding Geocellular soak basins under the green landscape, we can quickly trap pure rainwater in the confines of private aquifers for ground water recharge and possible reuse, right there where it falls.



As an essential part of SUDS strategy the underdrained swales meet all the three cardinal principles- Soak the Rain, Spread it fast and Slow down the flow. The Geocellular blocks provide temporary or permanent detention, transportation and where required infiltration into the ground for recharge.



These swales are dimensioned in a way that these can hold almost all the water which is collected during a normal heavy rain, within the carefully curated topographical features. When there is a heavy downpour, the system is designed to get fully flooded so that the road alongside is still completely dry.



The engineered media below the root zone consisting of gravel, expanded mineral nodules, bio-remediation agents, charcoal, coarse sand layers are separated by multiple layers of geotextiles to aid quick influx of storm-water into the underground basins before it could turn foul. The media packet holds about 35% water within its volume while the surface layers trap almost all the coarse & fine particles and nutrients.

The topography is designed to sweep the rainwater into the plantation beds holding perennials with a good fibrous root system. These beds have transit slopes draining towards shallow ponds at intermittent lengths.

These swales have integrated inspection cum filtration shafts that allows the entry of surface runoff, only after a designed period of delay so that only the cleaner rainwater is allowed direct entry.

Water starts to get drained directly through the yellow shaft cover, only when the surface collections have reached a particular height in the bioswale.

Once the flow rates have ebbed and threshold levels are controlled, the Stormwater continues to get drained into the Rigofill-STB basins only through the engineered media below the root zone.

Within a couple of hours, the swale is drained and the Stormwater collections are restricted within the designated water bodies which double up as bio remediation ponds and resource for irrigation during the drier spell.

Each Rigofill block- 800mm x800mm x 660mm in dimension holds 406 litres of rainwater, over 96% water within its over-all volume of 422 litres.

Even though the landscape itself holds humongous capacity of Stormwater, the flooding of the swale and plantation beds is kept only temporary to prevent fouling, mosquito breeding and wilting of plants.

The inspection shaft also allow the camera entry for inspection of the blocks, even in its filled state as well as a cavity to install small submersible pumping sets.

These basins when lined can also augment the fire water storage capacity and transportation channels, read, shallow yet spacious chambers!

Once paved with the media and top soil, the only visible sign of the swale is the inspection shaft cover, which doubles up as a ventilation shaft and an entry port for excessive storm-water runoff in event of really heavy burst. The whole system has Zero land costs because you can install other MEP services above the blocks.

Getting rid of those ugly concrete drains is not only easy but also profitable in the long run. The cost of maintaining these water saviours is no more than the normal landscaping expenses to plant the perineal and the seasonal bloom.

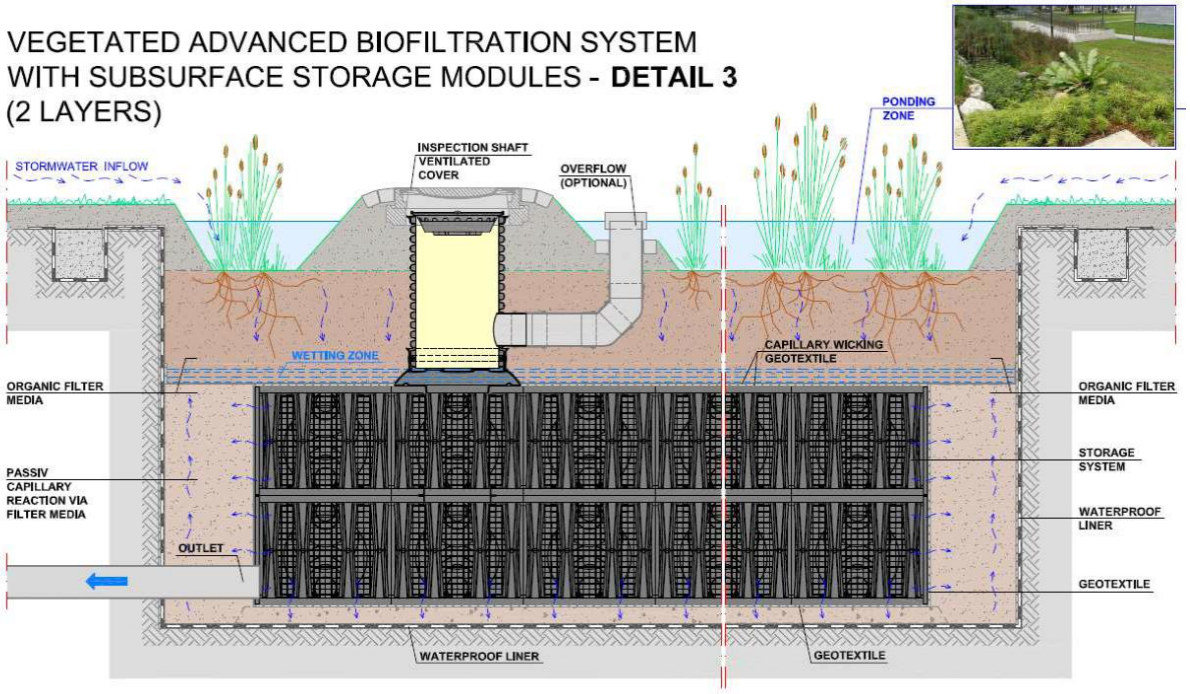
The Rigofill-ST & STB range of Geocellular blocks from Frankische are one of the strongest modules available on earth today and can be installed upto 6.5 m deep in India with upto 4m high soil cover.

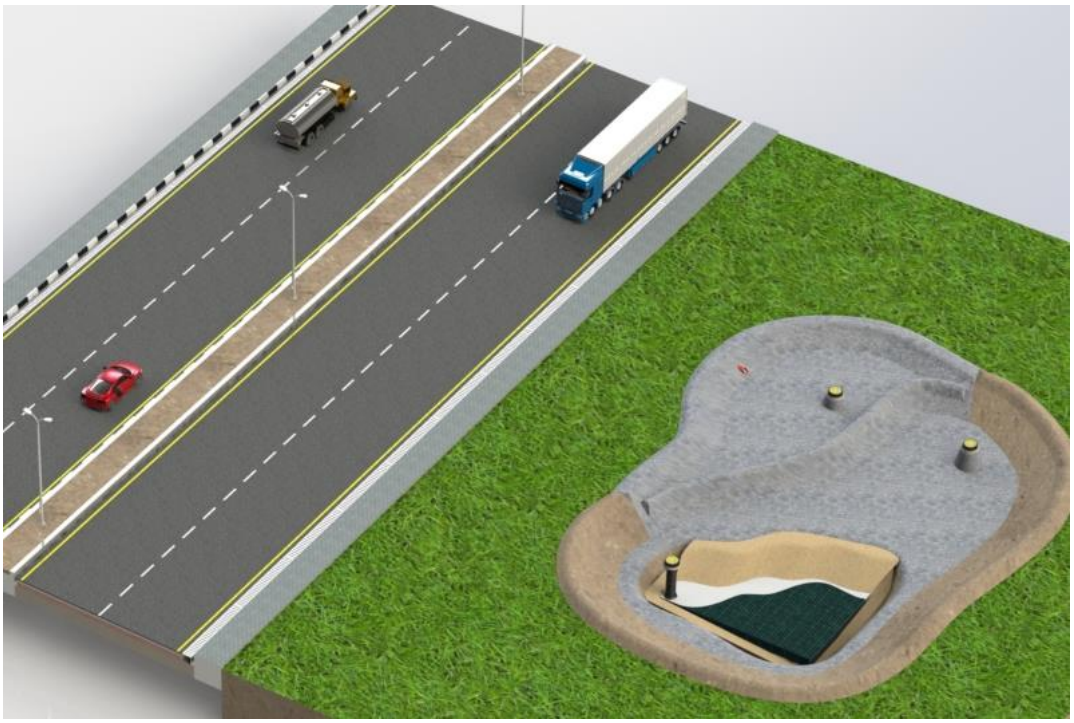
Installing such Geocellular basins isn't that difficult with Rigofill-ST blocks, what more, you can still run traffic over these blocks upto 60-ton Gross Vehicular weight, can't believe it! see for yourself at the following link:

https://youtu.be/0_YiUmj-cBE

If you agree that the legacy we are due to leave behind for our progeny is nothing to write home about, please do share a simple message - ***Soak The Rain.***

Should you want your organisation, RWA or the municipality respond to the groundwater challenge, drop us a line at Jugapro@jugapro.com we shall be pleased to assist.





A detailed presentation on this global best practice is available at Jalshakti Ministry Weblink: http://164.100.68.78/gwh/Published.aspx

Your SUDS design team may seek a half day training at our design studio and have a look and feel of the real size product and see the percolation in action with prior appointment at our experience centre near New Delhi or review the installation process at https://vimeo.com/449279984

If you really don't want to carry the guilt any further, please check http://www.jugapro.com/rwh/form_rechargecalculator/ for limiting your groundwater abstraction within the prescribed limits and evaluate your rainwater harvesting obligations.