

The Withys - Rainwater Harvesting

Client:	AMB Developments
Building Type:	3 x Private dwellings
Roof:	100% pitch and clay tiles
Catchment Area:	185m ²
Rainwater Apps:	4 WCs & laundry
Sustainability:	N/A
Built:	2008



Rainwater Harvesting Requirements

Poor ground conditions with heavy clay meant soakaways could not be used by AMB Developments at The Withys site near Wareham. Before the development was approved negotiations were required to find an acceptable solution to disperse the surface water from the 3 dwelling development. The agreed solution was rainwater harvesting to reuse as much of the roof rainwater as possible. Only then could stormwater be permitted to discharge into a water course along the rear boundary.

Ecozi provided an innovative solution to overcome the difficult ground conditions and retention requirements. A 6,000L precast concrete tank was specified for each dwelling; the tank would be split 3,000L for rainwater storage for WC flushing and personal laundry. The remaining 3,000L capacity was used as stormwater retention. The retention water had to be discharged at a controlled flow rate to the approved water course and the invert levels required a pumped system.

The precast tanks were placed in the final position by crane mounted delivery truck. The tanks were pre-fitted with an internal filter, pipe work and pump stand for the storm water discharge. The 3,000L retention capacity of the tank had to be pumped to the gravity drain invert level at a maximum flow of 20L/min. An automatically controlled sump pump and flow restrictor provided the required retention functionality. In the event of retention pump failure the water will flow by gravity when the tank is 100% full.



The precast concrete rainwater tanks offered by Ecozi are an engineered solution that save time and money for installations in poor ground. Compared to concrete backfill required with a GRP alternative tank, the precast option is installed at a lower overall cost and would typically be two days quicker. The standard surface load rating is suitable for 40T trucks and no concrete backfill is required.



The Rewamat control unit with mainswater backup to EN1717 was located on the boundary side of each dwelling in an insulated wall mounted kiosk. The Rewamat offers a unique architecture for a pump-in-tank system. The mainswater pipe is connected directly to the pump, therefore, during low rainfall only the minimum amount of mainswater is used until the next rainfall



rainwater harvesting systems

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