

Attenuation

Installation guide for rainwater attenuation



Overview

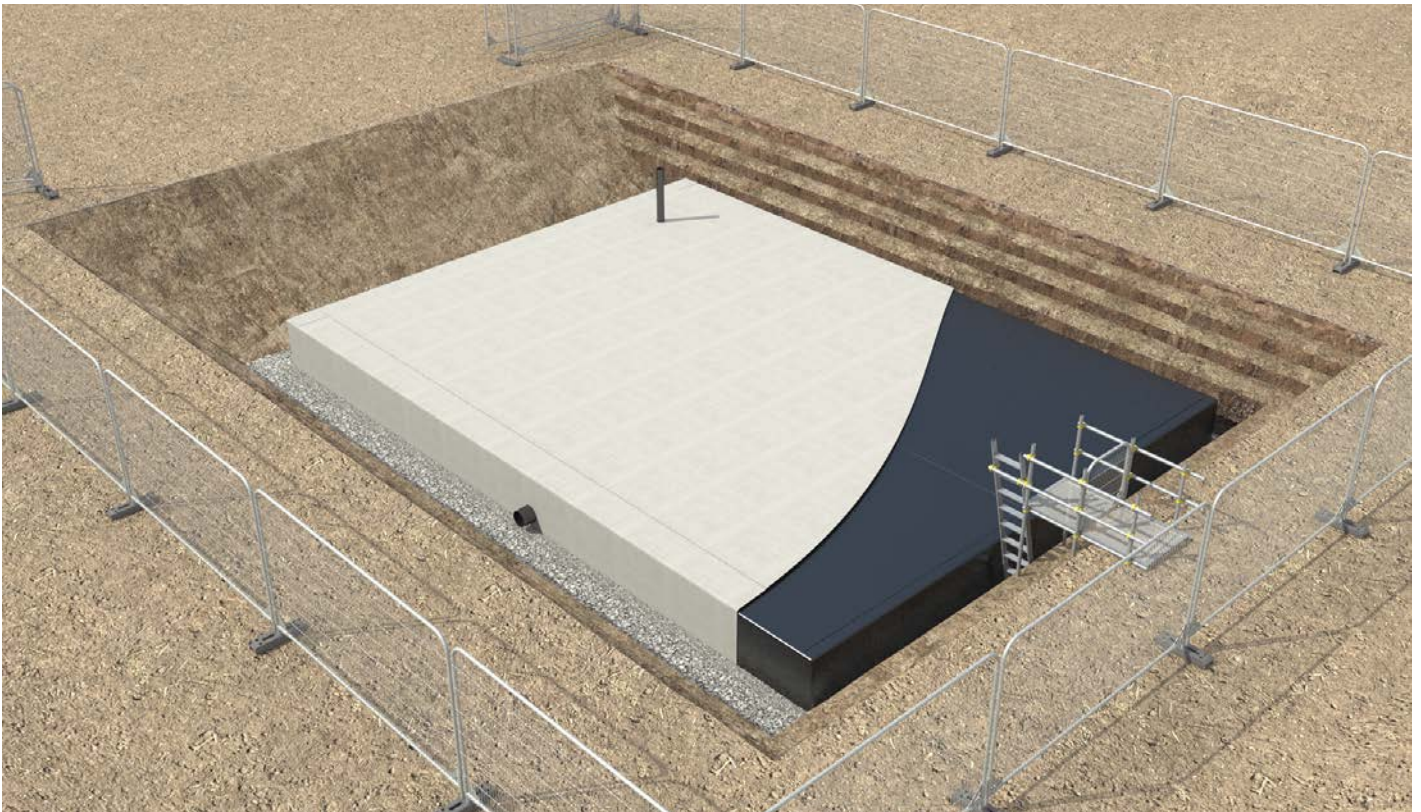
Attenuation tanks store surface water allowing it to be gradually released in a controlled way back into the environment or drainage system.

Effective water attenuation can be achieved with modular storage systems using high quality injection moulded units. We have a range of products and solutions to suit all design criteria, this includes:

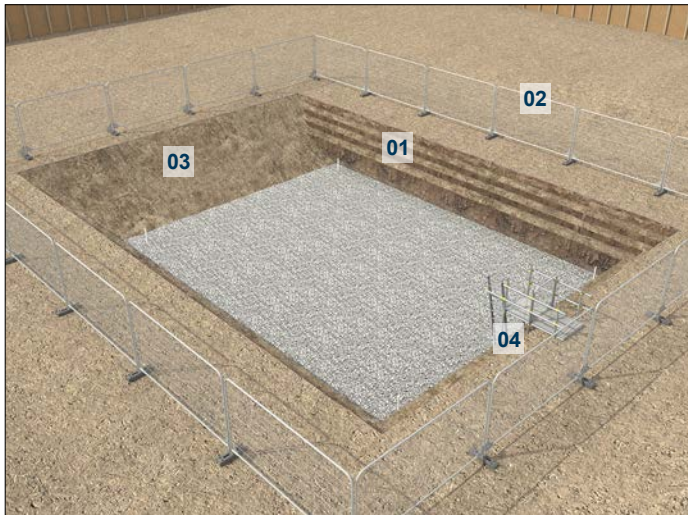
- Shallow installation
- Deep installation (5m+)
- Irregular shapes
- Systems requiring inspection and maintenance

All Hydro WMS attenuation tanks are fully welded using proprietary wedge welding techniques in accordance with CIRIA guidelines.

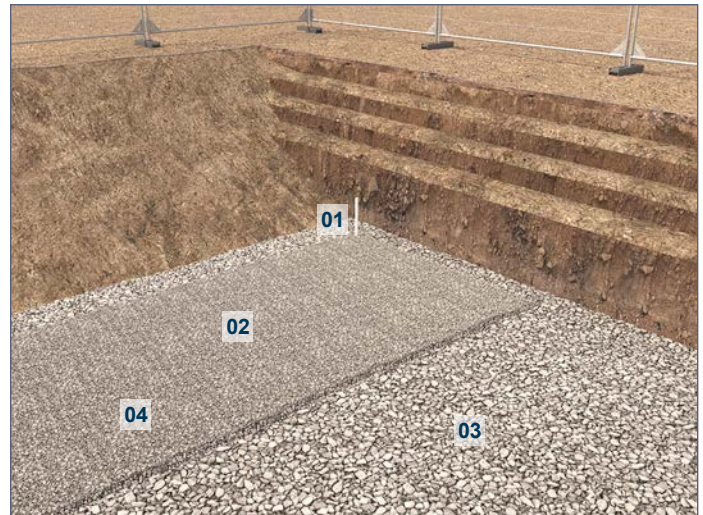
Hydro WMS soakaways are modular systems designed and installed utilising the same high quality injection moulded units combined with a non-woven geotextile.



Section diagram shown in greater detail and description on page 4



- 01**
1. Excavation suitably battered
 2. Safety barriers around excavation
 3. First point of access/egress is a ramp into excavation
 4. Second point of access/egress can be a ladder



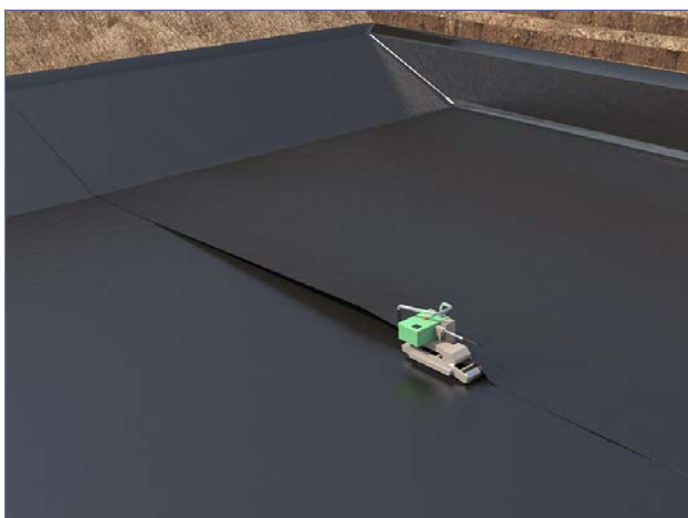
- 02**
1. Corners measured and pegged with 300 - 500mm of workspace outside
 2. 100mm pipe bedding or Type 6H material
 3. Formation to have minimum CBR of 3 - 5%
 4. Ensure blinding layer is flat and free from sharp objects
 5. Soft spots to be dugout & replaced with appropriate material to give minimum CBR



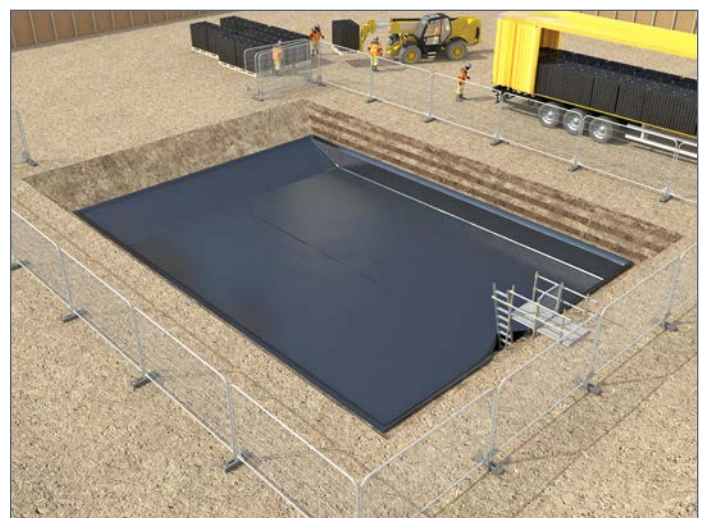
- 03**
- Attendance required to lift geo-textile protection layer into excavation using suitable mechanical lifting equipment
 - Geo-textile laid with suitable overlap by Hydro WMS operatives



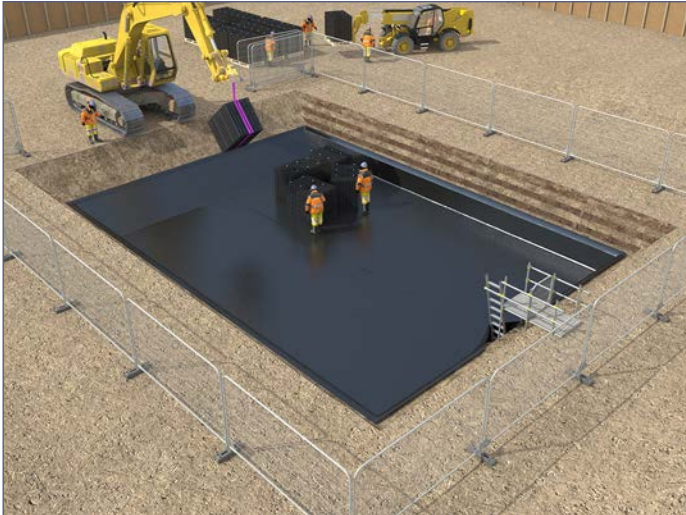
- 04**
- Attendance required to lift rolls of geo-membrane into excavation using suitable mechanical lifting equipment
 - Maximum weight not exceeding 1,300kgs
 - Geo-membrane laid in excavation for welding by Hydro WMS operatives



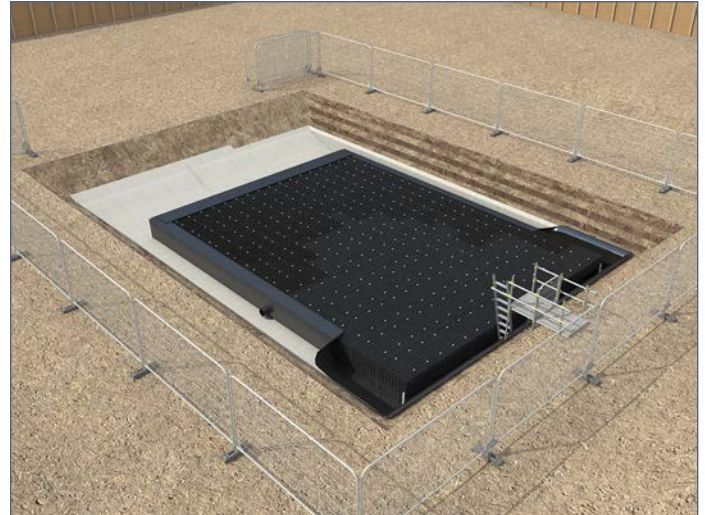
- 05**
- Geo-membrane wedge welded together
 - Joints tested with non-destructive method



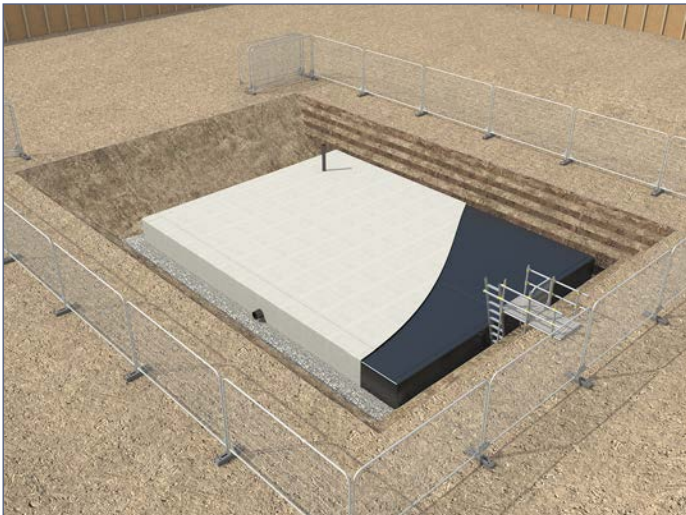
- 06**
- Delivery by articulated curtain sided vehicle
 - Ensure lift plan is in place
 - Palletised cellular tank components unloaded by telehandler with forks - by contractor
 - Placed beside excavation and within reach of the excavator - by contractor



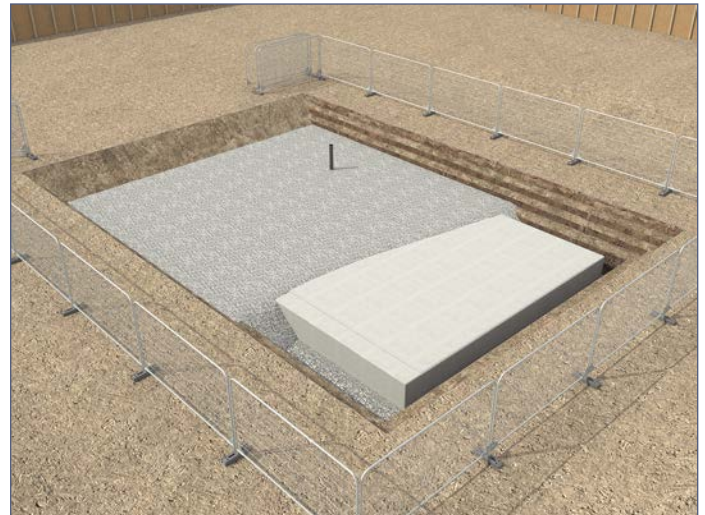
- 07**
- Slinger banksman required to coordinate lowering cellular units into excavation
 - Attendance required to lift cellular units into excavation using suitable mechanical lifting equipment
 - Hydro WMS operatives to form tank



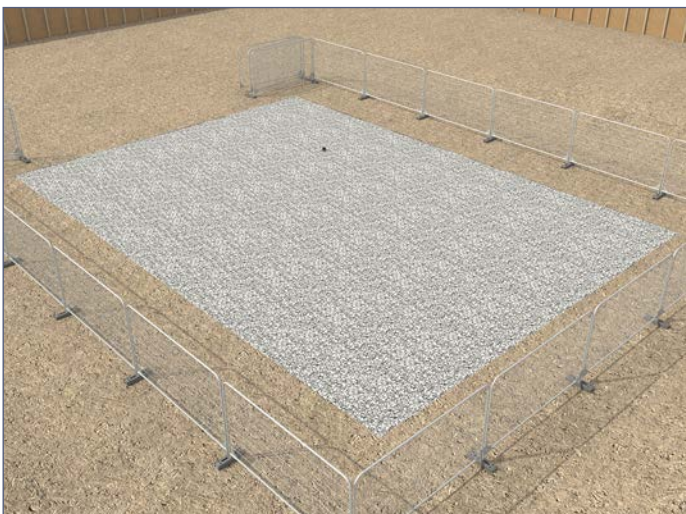
- 08**
- Geo-membrane is folded on top of tank
 - Low level pipe seal formed
 - Corners trimmed and formed
 - Staged backfill may be required



- 09**
- Attendance required to lift geo-membrane and geo-textile to complete tank
 - Lid of tank formed and wedge welded
 - Vent pipe installed
 - Geo-textile protection laid two top and sides of tank



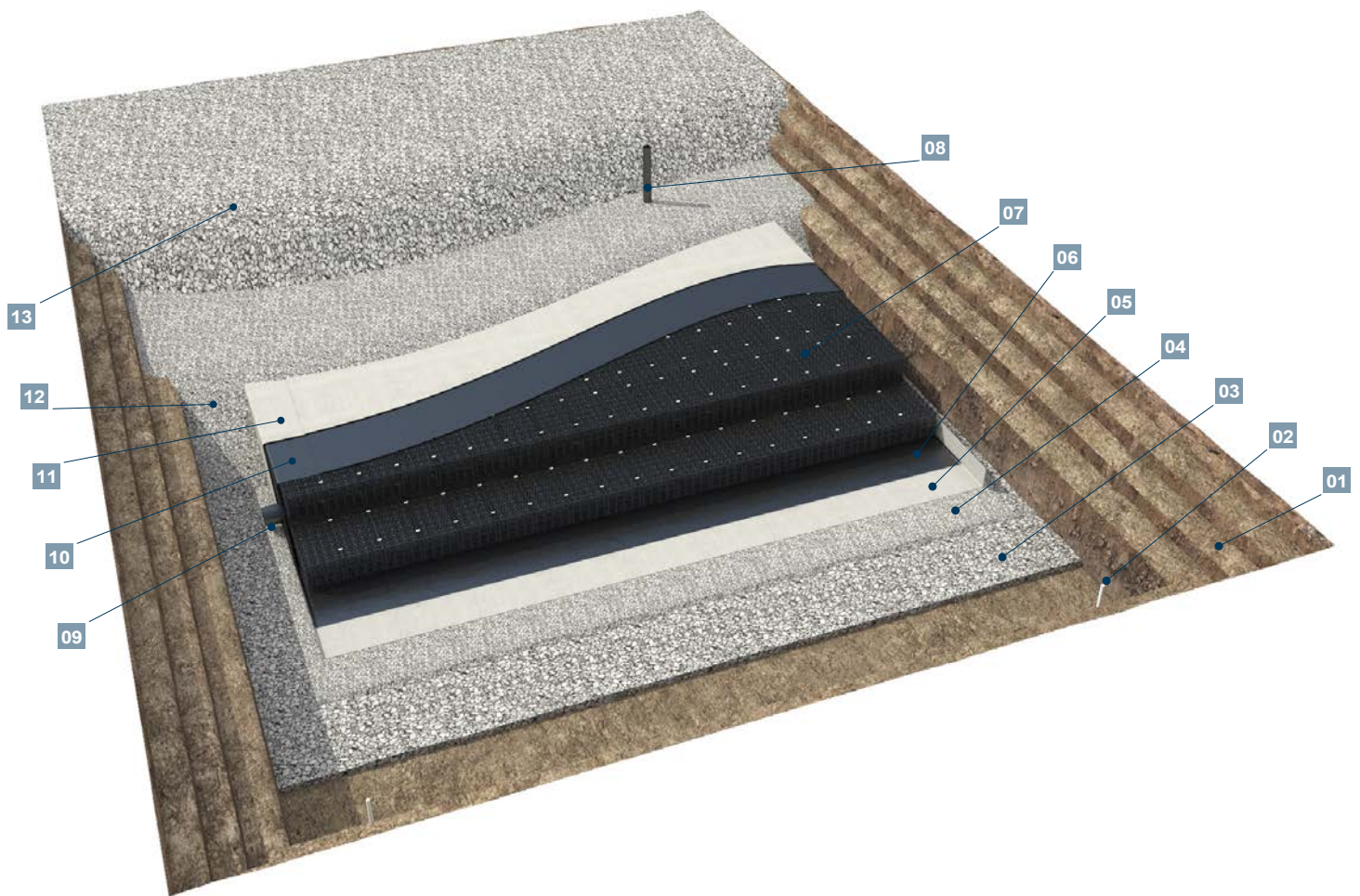
- 10**
- Minimum of 100mm protection layer over top of tank
 - Suitable small particle aggregate to be used
 - Contractor to backfill working space with agreed material
 - Protection board may be required for larger particle sizes



- 11** **IMPORTANT!**
- The construction loads from items of plant such as excavators and rollers are typically relatively low and deflections are not a significant consideration since the surfacing will not be completed when construction traffic is passing over

It is however recommended that other construction traffic is prevented from crossing the tank and in particular that cranes and other similar items are not located on the tanks (including any part of a mobile crane such as spreaders) unless a site-specific design check for this loading has been undertaken.

For light excavators, up to 14 tonnes and small double wheeled rollers a minimum of 300mm of cover fill should be placed over the units before trafficking; this is to prevent physical damage to them. Excavators should also be prevented from slewing when over the top of the units.



Component information

1. Excavation suitably battered
2. Corners measured and pegged with 300 - 500mm of workspace outside
3. Formation / capping layer (where required)
4. Pipe bedding / 6H aggregate blinding layer
5. Geo-textile protective fleece
6. Geo-membrane welded layer
7. Cellular units
8. Air vent pipe
9. Water outlet pipe
10. Geo-membrane welded layer
11. Geo-textile protective fleece
12. Small particle aggregate protection layer
13. Sub-base aggregate / bulk backfill

Disclaimer

This illustration is intended as a guide for information only. Please refer to the site specific Method Statement and Risk assessment issued prior to installation. Hydro Water Management Solutions Limited reserve the right to change the specifications without prior notice.

Hydro WMS

Randolph House 37-41 Longshut Lane West
Stockport, SK2 6RX

T: 0161 456 3476 | F: 0161 456 5820
E: info@hydro-wms.co.uk | www.hydro-wms.co.uk