NOTES WITH RESPECT TO GEO-CELLULAR SURFACE WATER ATTENUATION TANKS

All modular geo-cellular surface water drainage attenuation tanks shall be designed by a specialist contractor in accordance with:

- Eurocode 7 (BS EN 1997-1-2004)
- CIRIA report C737

Design shall include checks for:

- Flotation
- Dynamic and cyclic loading
- Creep
- Deformation

As well as the following vertical loads and associated surcharge (both on &

- Surfacing 500mm (includes 150mm tarmac surface and 350mm stone
- Backfill underlying the surfacing, specification to be determined by manufacturer min 1100mm
- Distributed loads 10 kn/m²
- Concentrated loads 50kn (vehicles up to 16,000kg)

Deflection of the surfacing shall be limited to less than 1mm by design. Installation is to be carried out to manufacturer's specific installation

requirements including points listed below:

- Clean, firm level base
- No material stockpiles over unless this has been allowed for by design
- Dewater excavation until design cover against floatation has been placed

Inlets are to be located at the top of the cells where ever

prevent the ingress of silt or other debris.

possible assuming upstream pipe invert levels permit. Silt traps

should be installed upstream of cellular attenuation cells to

All connections should use the preformed connectors on the ends of each cell and be sealed with the impermeable geomembrane using a proprietary top hat seal heat welded to the geomembrane and secured to the pipe with suitable jubilee clips or other suitable joint providing a water tight seal.

Each cell has a 150mm preformed connection point at each end, 225mm and 300mm connectors are also available. for

larger pipe connections alternative connection method is

• Vents to be installed as required by tank manufacturer

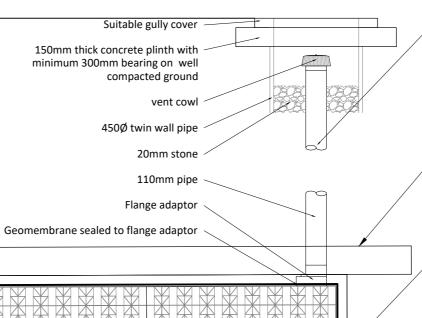
Construction plant such as excavators can impose significant loads on any cellular storage the following guidelines should be

- Care must be taken not to damage the units especially edges of the units
- Where ever possible machines placing back fill material should not load the tank. where this is not possible a minimum of 300mm thick layer of fill should be placed over the units. Only tracked excavators not exceeding 20 tonnes weight should be used.
- Compaction plant used over the units should not exceed 2300kg/metre width compaction should be done in accordance with the Specification for Highway Works.
- All site traffic should be prevented from trafficking the system even once finished unless site specific assessment demonstrates that it is acceptable.
- Under no circumstances are cranes or their outriggers to load the storage units.

Back fill under landscaped areas to be done with selected site won material free from large/sharp objects.

Backfill under trafficked areas is to be selected granular material suitable for compaction with the plant available.

Backfill materials needs to be suitable for end use and capable of being laid above the cells with compaction plant deemed appropriate by the manufacturer.



Attenuation tank must be vented with minimum of one 110mm vent pipe provided per 7500m² of attenuation area. One vent pipe must be located at the highest point of the cellular storage. Flange adaptor is to be used and sealed to form an air tight connection with impervious goemembrane. Once flange adaptor is fitted to cells impervious geomembrane must be removed from the inside of adaptor. Vents to be located witin landscaped areas where ever possible.

150mm thick ST4 concrete slab with A393 mesh in top with min 50mm cover. sacrificial plywood to be laid over sand back fill to spread load of concrete prior to curing. slab to extend 400mm over virgin ground in all directions.

Modular cells 1mx0.5mx0.4m deep. to be laid parallel with each other connected with suitable clips/connectors. where multi layers are to be used units should be laid in a brick bonded formation with continuous vertical joints avoided. Cells are to be installed in accordance with Polypipe's requirements.

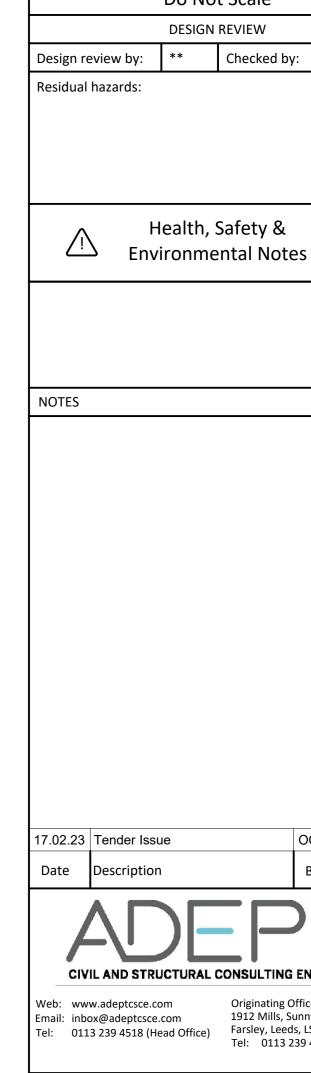
Proprietary impervious geomembrane to be a minimum of 1mm thick with a density of 900kg/m³. All joints and openings are to be taped & proprietary top hats used where required. Installation and jointing to be in accordance with geomembrane manufacturers requirements. Suitable needle punched non-woven geotextile should be used to wrap the geomembrane for protection during installation and backfilling. to have minimum 300mm lapped joints

100mm thick layer of compacted course sand between trench walls and over top of cells.

100mm thick layer of course sand to be level and suitably compacted.

Minimum 150mm thick layer of Type 1 stone is to be laid in base of excavation to be compacted to refusal and form a level platform free from undulations. Base to have minimum 1in300 fall towards the outfall(s). additional capping may be required if ground conditions are poor, 150mm thick layer may be reduced or omitted if ground condition permit approval must be given in writing by Adept Consulting

Typical Detail Cellular Attenuation Tank



CIVIL AND STRUCTURAL CONSULTING ENGINEERS Originating Office: Leeds 1912 Mills, Sunny Bank Mills,

Farsley, Leeds, LS28 5UJ

Tel: 0113 239 4518

OCB JS P1

Chk Rev

Ву

Do Not Scale

DESIGN REVIEW

Checked by:

Dearne Valley Parkway

Typical Attenuation Tank Details



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