Rozelle Interchange
WestConnex
JOHN HOLLAND | CPB CONTRACTORS

Sustainability Initiative: Sustainabile backfill material

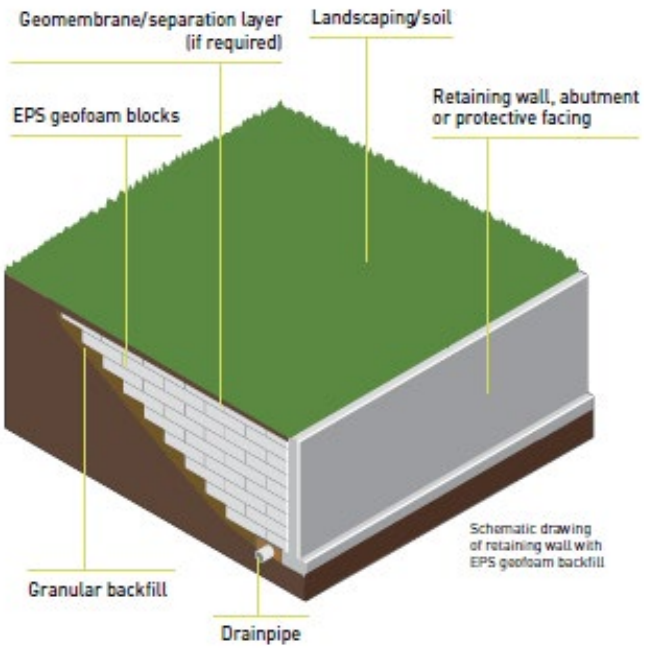
The Challenge: Parklands backfill

As part of construction of the Rozelle Interchange Project, the Rozelle Railyards site will be converted into a new, green parkland measuring up to 10ha in size. Construction of the parkland requires raising the level of the site to create at-grade pedestrian access from Lilyfield Road, and the formation of a wetlands feature on the western end of the site.

The JHCPB design team was challenged to identify a sustainable backfill material that could also perform a structural role in supporting the M5 and Western Harbour Tunnel cut and cover retaining walls. Given the scarcity of good quality, clean fill in New South Wales, and the volume of backfill required, the use of soil was considered unsustainable for this purpose.

The Solution: GeoFoam

GeoFoam is a fill material consisting of solid polystyrene bead blocks. It is a strong, stable, and exceptionally lightweight material. Due to its high strength-to-weight ratio, JHCPB identified GeoFoam as an excellent alternative to soil. In total, over 9500m3 of the product will be used in the parkland, which significantly reduces the quantity of clean fill otherwise required.



For more information about GeoFoam, contact:
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Benefits

Environmental:

- Inert nature ensures chemicals are not leeched into the ground.
- Resistant to bacterial, fungal and insect growth.
- Reduced diesel use during construction. Light weight and local manufacturing results in significantly less truck mileage than soil.
- Cut-off waste from the production stage is reused to make new blocks, so production is waste-free.
- Blocks can be repurposed or recycled at end-of-life, even after an extended use.
- Replaces use of scare resources such as clean fill, freeing it up for other construction projects.

Social:

- Improved safety for workers due to lightweight materials, being easy to carry and place (1% the density of soil, but with the equivalent strength).

Economic/Financial:

- Manufactured by local, Sydney-based company.
- Reduced cost due to reduced transport/on-site construction activities involving heavy lifting and earth moving machinery.
- Accelerates construction time and lowers costs. Quick and easy to install and can be installed in bad weather minimising down time.

Performance:

- Strength of fill means it can absorb and dissipate crush loads from all directions.
- Water resistant nature ensures performance is not affected by weather conditions and no water absorption from surrounding wetlands.