

CASE HISTORY

Construction of two reinforced earth bunds in Southampton, UK

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| PRODUCT | TENAX TT 301 SAMP geogrids TENAX LBO 201 SAMP geogrids |
| LOCATION | Marchwood, Southampton, UK |
| OWNER | DWS, UK |
| PROJECT | TBV Consult, UK |
| CONTRACTOR | Geoffrey Osborne Civil Eng. |



PROBLEM

The construction of a cargo railway at Marchwood Military Port in Southampton, UK, required the establishment of two barriers to act as noise bunds and also as a curtain to shield unsightly unloading operations.

SOLUTION

Several options were considered when designing the bunds, but the reinforced earth option proved to be the most economical. The length of the bunds were 330 m each with a height of 5.0 m and a base width of 5.40 m, with side slopes at 71.5°. The foundation soils was comprised of alluvium deposits with low shear strengths. Therefore the Consultants, TBV, decided to improve the bearing capacity by vibrocompaction technique. TENAX technical team were approached for the design of the reinforced earth bunds. The design included the use of readily available fine sand fill reinforced with TENAX TT 301 SAMP geogrids as primary reinforcement wrapped around the face. Secondary reinforcement using TENAX LBO 201 SAMP was used to add stability within and to the face of the slope. The construction of the bunds was accomplished by laying the geogrids, at the base of the bunds, followed by placing of the fill soil with the use of a JCB, spreading the fill soil, and then compaction of the fill by a hand operated vibrating compactor. A geotextile fabric was placed underside of the geogrids to prevent the filtration of the fine particles. The facing of the slopes were then covered with artificial grass made of polypropylene matting.



CONCLUSIONS

The use of TENAX geogrids in reinforcing the earth bunds, allowed for:

- the construction of the bunds with steep slopes thus minimizing landtake;
- fast construction, using standard plant;
- the use of available soil, in this case fine sand;
- a most economical solution.

