

VERITY CRESCENT, POOLE

Ground Improvement – Surcharge

VertaseFLI was appointed Principal Contractor for the scheme that involved the reprofiling and ground improvement of a former mixed use landfill.

Developing a former landfill presented a number of geotechnical issues, principally relating to long term settlement issues due to the poor compaction of underlying waste material. Therefore, ground improvement works were required to improve the geotechnical properties of site soils to allow cost effective foundation solutions to be developed for the residential development of the site (120 properties).

CLIENT: BELLWAY HOMES
LOCATION: POOLE DORSET
PROJECT VALUE: £3.2M
DURATION: 12 MONTHS
SERVICES PROVIDED: BENEFIT ASSESSMENT OF PROPOSED ALTERNATIVE GROUND IMPROVEMENT SCHEME, IMPORTATION OF CIRCA 30,000 M³ OF SURCHARGE MATERIAL, MONITORING, NHBC SIGN OFF



VertaseFLI Role:

The initial ground improvement scheme for the site specified the use of rapid impacted compaction, stone columns and piled foundations. However this scheme could not meet the end point settlement criteria cost effectively, therefore this was reviewed by VertaseFLI and an alternative surcharging scheme developed.

The VertaseFLI scheme comprised the use of surcharging to compact underlying soils and achieve the performance criteria. This essentially comprises the placement of bunds of surcharge material above the development platform to provide a loading to compact the underlying soils. This was achieved via the importation of circa 30,000m³ of soils.

Once in place, monitoring plates were installed within the surcharge material and monitored weekly to record the degree of settlement to determine when the performance criterion had been met. Initially soils settle quickly under load, this then levels out over time as the underlying soils are compacted. Once settlement ceased, the soils were moved onto the next phase and the process repeated.

The surcharging scheme was completed in phases, with excess material from each phase used as backfill and the remaining material utilised in the next phase. This provided a cost effective re-use of the material on site. The scheme was agreed and subsequently signed off by the NHBC.



RE-PROFILING PRIOR TO SURCHARGING



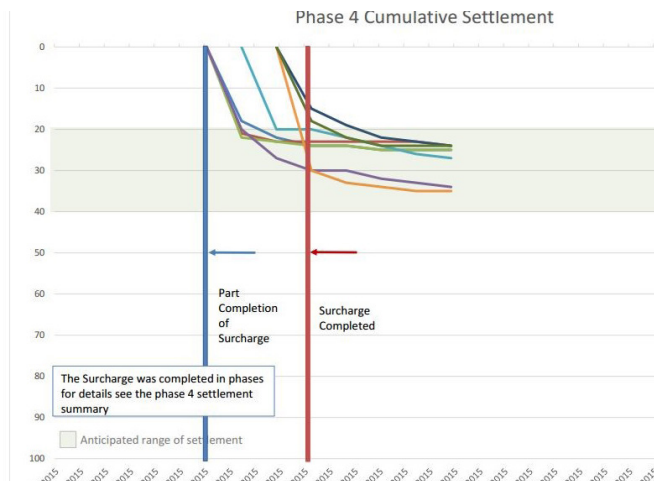
SURCHARGE IMPORT



FORMATION OF SURCHARGE BUNDS



INSTALLED SETTLEMENT MONITORING POINTS



SETTLEMENT GRAPH



SITE RE-PROFILING IN COMPLETED PHASE