



engenium
smart project delivery

Equipment and Storage Facility Expansion Civil Engineering

Demonstrated Capabilities

- Detailed Design and Drafting
- Earthworks and Drainage Design
- Safety in Design
- Project Management

Client CBH Group

Project Location

Kellerberrin, Wheatbelt region of Western Australia.

Scope

Engenium was engaged to complete a bulk earthworks and drainage design for CBH Group's Kellerberrin grain receival, storage and transfer facility. The scope involved providing civil engineering for the site expansion including deliverables such as earthworks and drainage models, drawings, design reporting and documentation.

Business Objective

CBH Group required detailed design for an additional 120,000 tonnes in open bulkhead grain storage capacity and the installation of a new 500 tonnes per hour E-Pit and CLS system. They were also looking to resolve the insufficient grain storage capacity at Kellerberrin, due to the projected increases in harvest volumes, and to improve the operational efficiency of the site. A fit for purpose design was required that met budget constraints. The site was located on a relatively flat slope which made draining the site challenging. Engenium's scope was later increased to resolve some existing downstream drainage issues.

Challenges to Overcome

There were a number of challenges encountered throughout the project including accommodating additional client scope changes such as the pavement surfacing for the OBH's, truck swept paths to E-Pits, regrading OBH 11/12, stormwater management plan, drainage system upgrades and concrete slab set-out revisions. Due to budget constraints, design changes were requested to help minimise construction costs.

Smarts

Some of the design changes were requested during the construction phase and therefore had to be completed in very short time frames. To achieve this 3D models were supplied for construction as opposed to drawings. In order to minimise costs, earthworks volumes for OBH 11/12 were reduced by changing the crossfall from one side of the OBH to the other, so that levels followed the existing ground more closely.

Project Outcome

All variations and amendments met CBH Group's requirements. Benefits included value engineering which resulted in cost savings. The project was constructed, as planned, in time for the 2018 harvest.

Delivering Value. Delivering Results.