Kevin's Corner Coal Mine

Bankable Feasibility Study

Robert Bird Group

PROJECT OWNERS:

- Hancock Galilee Pty Ltd

START DATE: 2012
COMPLETION: 2014

SCOPE:

To develop a site to be ready for mining within two years of approval

12d DIMENSIONS:

- Mining Infrastructure

Project Summary

The Kevin's Corner project is situated in Central Queensland, approximately 340km south-west of Mackay. It is recognised as a high quality thermal coal deposit within the Galilee Basin in Queensland, Australia.

With first coal production beginning as early as 2014, and construction activities planned from late 2012, the project will allow for both high production open-cut mining and underground long wall mining activities to be undertaken simultaneously.

This project is anticipated to employ a workforce of approximately 2500 during construction and 2000 over its expected 30 year operational life. Cost effective engineering solutions were sought to enhance the delivery of the project.

For more information

To find out more about how you can create better designs faster with the 12d Model solution for civil engineering design, visit www.12d.com.

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Image Source: miningmagazine.com

The Challenge

One of the first challenges tackled by the design team was the sheer size and scale of the project. With multiple designers and engineers working on the project simultaneously in different locations to help meet an aggressive schedule, the project relied on a more coordinated, flexible and accurate design model.

For a large project with multiple sub-consultants, specialised service providers and local groups resulting in a sequence of the design iterations and changes were required, to be applied to an entire area of the team without disrupting the tight delivery schedule.

The project owner hoped to achieve the complete design and documentation of the bankable feasibility study by the end of 2012.

The Solution

By utilising the power of Chains, multiple functions could be run in a matter of seconds to allow the team to react quickly to design decisions and changes requested by the client.

The model could be easily adjusted to reflect changes to hardstand heights, flood immunity levels and pavement design criteria in minutes, significantly reducing design effort and costly rework.

The visualisation capabilities of 12d Model allowed the design team working on the MIA to visually assess the location of light vehicle and haul roads being completed by another team and coordinate the location of key mine infrastructure areas seamlessly.

Result

12d Model allowed Robert Bird Group to develop a variety of options, visualise how the various design team components integrated and study more design alternatives, enabling them to deliver a higher quality engineering design more efficiently to the client.

12d® Model

Roads and Highways

12d Model's design option is the smarter solution for the design, modification and maintenance of Road and Highway projects.

Enjoy advanced 3D tools to design local and major roads, intersections, roundabouts, highways, interchanges and much more.

Ports and Dredging

12d Model is the solution for port infrastructure and dredging, easily managing the very large datasets and complex volume calculations often required by these projects.

A complete range of flexible and customisable volume calculation tools allow teams to extract and present the information quickly and easily.

Land Development

12d Model is the most versatile solution for the creation of sustainable land development projects, including residential, commercial and industrial developments, recreational areas, landfills, and agriculture projects.

Easily manage all aspects of your land development project from earthwork quantities, road design utilities and drainage design.

Airport Infrastructure

12d Model provides a solution for the design, construction and analysis of new airports, as well as the upgrade and maintenance of existing runways and airport infrastructure.

Easily manage large airport infrastructure projects and share data across multi-disciplinary teams.

Rail

12d Track has been specifically designed for the survey, design and construction of light, heavy and high speed rail projects.

Extensive railway tools in 12d Track allow the rail designer to quickly and easily design their projects. These options are built on the existing 3D modelling and design tools available in 12d Model.

Mining Infrastructure

12d Model's powerful set of exploration, site investigation, survey and analysis tools are crucial for the initial design, construction and ongoing operation of mining projects.

Comprehensive tools for the survey, design and construction of access roads, railways, earthworks and services allow for the coordinated design and management of mining infrastructure from within 12d Model.

Drainage, Sewer and Utilities

12d Model provides comprehensive tools for the design, analysis and optimisation of stormwater and sewer projects using rational, dynamic (hydrograph) and 2d drainage methods.

Powerful clash detection management allows for efficient 3D modelling of service networks such as gas, electricity, telecommunications and water prior to construction.

Surveying

12d Model is a complete surveying package providing the tools to manage all facets of surveyed data including LIDAR, topographical, as-built, conformance, traversing, geodetics, data mapping, labelling and much more.

The 12d Field option runs on a ruggedized tablet and gives the user access to full 12d Model functionality, allowing you to take the entire project into the field with the most comprehensive pick-up and set-out tools.

Oil and Gas

12d Model assists with the design, construction and mapping of oil and gas pipelines, original site exploration and the wide range of infrastructure required for oil and gas projects.
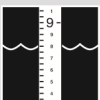
Accurate 3D modelling and the ability to share data between users allow teams to quickly and easily coordinate designs.

Construction

12d Model is the ultimate software for construction with powerful set-out options, direct interfaces to machine control and detailed conformance reporting and auditing.

Manage 3D data and control volumes, quantities and progress claims with 12d Model. Set-out your project and undertake conformance and as-built surveys live on-site using 12d Field.

Rivers, Dams and Hydrology

12d Model handles very large datasets and interfaces with a wide range of analysis packages, making it perfect for flood studies and the management of rivers and dams.

12d has partnered with industry leading analysis software, allowing users to apply 2D drainage analysis from within 12d Model.

Environmental

12d Model's ability to handle very large datasets combined with flexible and comprehensive 3D analysis and modeling tools make it perfect for a wide variety of environmental projects.

Existing workflows can adopt 12d Model easily as it allows users to directly interface with GIS systems and most software packages and file formats.

Why Choose 12d?

- **Powerful data processing & intelligent functionality.**
- **Modular, easy to update & completely customisable.**
- **Seamless integration with major industry software and hardware.**
- **Used in over 55 countries worldwide.**
- **Friendly support & training from industry experts.**

12d Model