



FACTS AT A GLANCE

Company: Matomo Projects

Website: www.basilread.co.za

Description: Backed by more than six decades of construction expertise, Basil Read has become synonymous with excellence in the spheres of construction, mining, and property development. The group and its subsidiaries are active in civil engineering projects, road construction, building, mixed integrated housing developments, property development, opencast mining, and related services. It has approximately 6,500 employees in six countries.

Industry: Metals & Mining

Country: South Africa

PRODUCTS USED

- CADWorx®

KEY BENEFITS

- Designed chromium recovery facility within tight schedule.
- Avoided 75% overrun in budgeted hours.
- Overcame design and accuracy challenges.
- Produced fully accurate fabrication drawings and bills of material.

MATOMO PROJECTS LEVERAGES CADWORX® TO AVOID 75% IN EXCESS BUDGETED HOURS

IDENTIFYING GOALS

Matomo Projects, a Basil Read Group Company, was assigned the design of a chrome tailings recovery plant for Assmang Chrome's Dwarsrivier Mine to recover saleable platinum-group metals (PGM) concentrate from the mine. This Dwarsrivier Dewatering & Tailings Recovery Plant is based on a basic processing circuit that will allow for the upfront thickening, bead milling of float feed, flotation, concentrate dispatch, and tailings handling. The plant location was opposite the existing plant and adjacent the quarry.

The plant is to treat 27kt/month of tailings to produce approximately 0.370t/month of final concentrate. Matomo's assignment included engineering and project management all the way through procurement, manufacturing, and construction, terminating at cold commissioning. The project would also include the hot commissioning and handover of the completed plant, with feed into plant 30kt/month.

The project included more than 18 pieces of equipment and pipe ranging from 50NB to 300NB in diameter of carbon steel, and 40 OD to 315 OD high density polyethylene (HDPE). With a fixed budget, Matomo searched for a reliable solution to produce piping designs and ensure that isometrics were created quickly and accurately.

OVERCOMING CHALLENGES

Matomo chose CADWorx Plant Professional because with its previous software solution, design work for the 38 process pipelines would have exceeded the 85 budgeted hours by 75%. CADWorx could generate accurate automatic isometrics and allow the team to meet a seemingly impossible constraint. The company could also automatically compile bulk piping bills of quantities and export to Microsoft® Excel® for expediting.

The team first scanned the existing plant to generate a 3D model and finalized the civil, structural, and mechanical 3D models (placement of equipment) in Autodesk® Inventor® for import into CADWorx. Using CADWorx, Matomo routed all of the pipes and produced all the necessary piping design layouts. It was able to automatically generate the isometric drawings with full bill of materials, saving many hours of detailing.

Because CADWorx was easy to learn and use, Matomo avoided the extensive

training delays in becoming productive it would have experienced with less user-friendly methods. As an example, its senior piping designers with virtually no prior CADWorx experience were able to quickly develop specifications for the carbon steel and HDPE pipes in-house. With the limited number of hours, it would have otherwise been an impossible task.

Without CADWorx, bills of material would have had errors that required rework, resulting in delays and increased expenses. CADWorx also helped Matomo avoid an estimated 75% more hours on the piping design and isometric drawings, which would have caused the company to exceed budget.

REALIZING RESULTS

The fabrication drawings were accurate, drastically reducing rework on site.

“The bill of materials generated from the database guaranteed virtually 100% accuracy of material used in the model for project procurement,” explained Anton Botha, senior piping design draftsman at Matomo.

The team managed fabrication and erection onsite. With CADWorx, many hours of detailing were eliminated compared to the conventional software previously used. It was Matomo’s first project using CADWorx for the piping design and isometrics.

“The specifications for the carbon steel and HDPE pipes were developed in-house by a senior piping design draughtsman with virtually no CADWorx experience,” said Botha, “a task that would have been impossible within the time constraints without CADWorx.”

AWARD-WINNING PROJECT

Matomo Projects received the 2014 CADWorx Drivers of Success Runner-Up Award for its use of the software. The

annual Drivers of Success competition recognizes innovative applications of Intergraph® products, impressive project results, and significant benefits from collaboration among disciplines and the integration of the products.



ABOUT INTERGRAPH CADWORX & ANALYSIS SOLUTIONS

Intergraph CADWorx & Analysis Solutions is part of Intergraph Process, Power & Marine. It develops and supports the following products: CADWorx, for plant design; CAESAR II®, for pipe stress analysis; PV Elite® and Visual Vessel Design™, for pressure vessel analysis; TANK™, for storage tank analysis; and GT STRUDL®, for structural analysis.

Soon to be known as Hexagon Process, Power & Marine, Intergraph Process, Power & Marine is the leading global provider of engineering software for the design, construction and operation of plants, ships, and offshore facilities.

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