

Industrial machinery and heavy equipment

Anglo Platinum

Working in 2D delays construction projects

Product

Solid Edge

Business challenges

A 200,000-ton-per-month platinum mine is an enormous project involving up to 100,000 part assemblies

Most of the work involves rearranging and modifying components and assemblies used on previous designs

Using 2D design methods, plan, elevation and isometric drawings almost always had to be redrawn from scratch for each project

Keys to success

Use Solid Edge software to develop parametric assemblies that can be used as is or easily modified to suit the specific project

Generate construction drawings from the 3D model with minimum additional work

Deliver design drawings to subcontractors and hold design review meetings over the web

Anglo Platinum wanted to automate repetitive design tasks

Anglo Platinum needed to reduce the time required to design large mining complexes in order to reduce engineering and capital costs.

2D design methods are repetitive

In the past, Anglo Platinum designers created the high-level design for platinum mines using a 2D design tool that required every section, elevation and isometric drawing to be produced from scratch. When design changes were issued, many drawings were often affected and each of them had to be redone. Cost estimates required going through the drawings one by one and entering material items into a spreadsheet.



Move to 3D streamlines design process

"The main reason for moving to 3D," says Len Pretorius, General Manager Project Services for Anglo Platinum, "was to be able to cut and paste past designs into

"The main reason for moving to 3D was to be able to cut and paste past designs into new projects."

Len Pretorius
General Manager Project Services
Anglo Platinum

Results

Drawing/design manhours are saved by using 3D designs and automating the generation of 2D drawings

The time to design, fabricate and build a typical mine concentrator reduced from between six to 12 months

Significant savings in engineering, construction and interest costs

new projects. The parametric capabilities of Solid Edge® software make the job easier by allowing us to create libraries of common assemblies that we can simply plug new numbers into the system to fit the current design. The 3D model provides a much higher level of visibility than we were able to achieve in the past and, best of all, we can generate construction drawings once the design is approved in an automated process.”

New approach has potential of producing significant monetary savings

It costs about \$160 million to build a platinum mine and the costs increase between six and 10 percent per year over the life of the project. By designing in 3D, Anglo Platinum reduced the time needed to design a mine by six to 12 months. The total savings, from reduced engineering costs, lower construction costs and getting the mine into production faster amounted to about \$2 million per month.

Solutions/Services

Solid Edge
www.siemens.com/solidedge

Customer's primary business

The Anglo Platinum group is the world's leading primary producer of platinum group metals, with operations, comprising six mines, two smelters, a base metals refinery and a precious metals refinery, all situated in the Limpopo and North West provinces of South Africa.
www.angloplatinum.com

Customer location

Christchurch
New Zealand

“Switching to 3D design has helped us reduce the time required to design, fabricate and construct a 200,000-ton-per-month mine complex significantly.”

Len Pretorius
General Manager Project Services
Anglo Platinum

Siemens PLM Software

Americas +1 314 264 8287
Europe +44 (0) 1276 413200
Asia-Pacific +852 2230 3308

www.siemens.com/plm

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