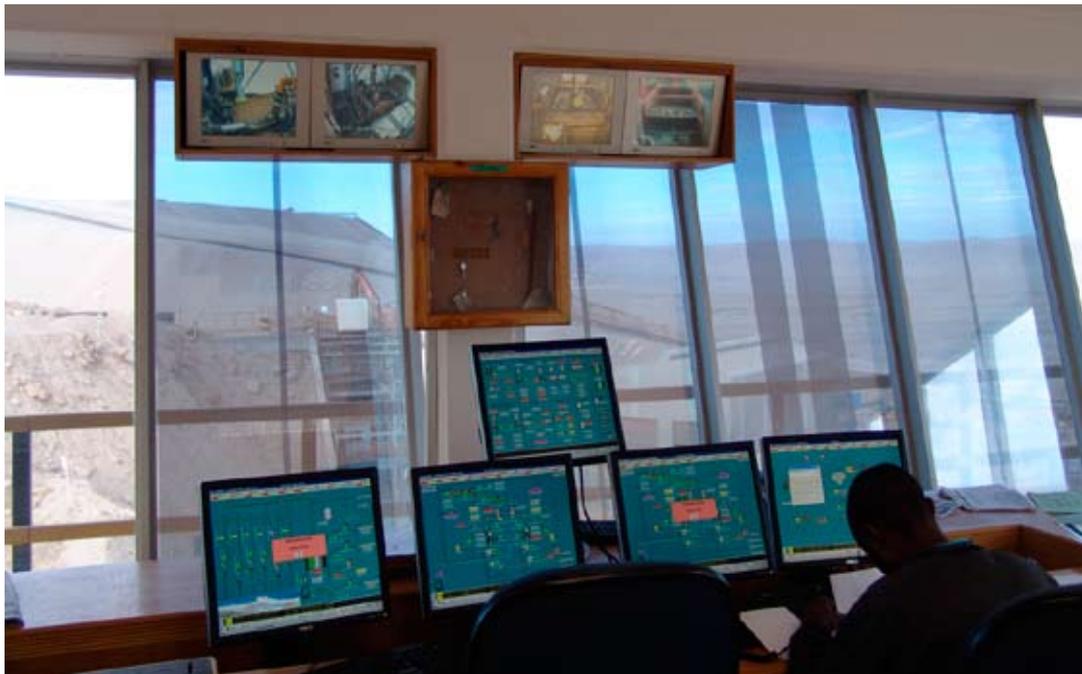


Namdeb, Elizabeth Bay

World-class control room chooses integrated automation solution



Monitors control the mine processes from the state-of-the-art tower

Based in Elizabeth Bay on the Namibian coast, Namdeb is a joint venture between the Namibian government and the world's leading diamond company, De Beers. As the biggest exporter in Namibia, Namdeb diamond exports account for more than 40 percent of the country's total exports and 10 percent of its gross domestic product (GDP).

The costs involved in shifting the annual 50-70 million tons of sand and rock in these harsh conditions are enormous. Thus, Namdeb is continually looking for innovative ways to improve production and reduce costs.

The Challenge

In addition to ongoing operational and production issues, the desert environment poses unique challenges for Namdeb. As well as the extreme heat, dust is stirred by the prevailing winds. Fog combined with salt laden air offers another challenge in the form of corrosion. Not surprisingly, creating a world class control room was therefore not an easy feat.

The result is an innovative control hub the staff aptly named "the E-Bay flight control center." Inspired

by the control tower at Johannesburg International Airport, this three-story building was designed by a top Japanese architectural firm, offering a 270° view of entire site operations.

The Solution

The tower has three floors with the control room occupying the top floor and housing multiple LCD screens. Operators are now able to view everything that is occurring across the site, from a truck standing idle to the processes in the primary crushers and tipping area.

The extreme environmental conditions were a key element of the design, with dust resistant frames utilized for the control room windows and tinted glass used due to the east-facing aspect and relentless heat. Storage of PLCs plus other hardware and equipment is located in a custom-designed windowless controlled environment located underneath the tower's central control room.

With the new tower installed, Namdeb implemented a CitectSCADA solution to provide centralized control



The Challenge

Namdeb sought to build a state-of-the-art control room in one of the world's most rugged terrains, while maintaining its large diamond production from the sea floor and desert.

The Solution

A top architectural firm was hired to design a thoroughly modern control room that could survive the grueling heat and dust. As part of the control room, CitectSCADA was installed to enable centralized control of the plant and monitor and control all facets of the diamond recovery process.

The Benefits

CitectSCADA's built-in redundancy allows the system to run smoothly. Exceptional scalability will help facilitate future plant upgrades, and its single global database simplifies SCADA software management by allowing changes to be made at a single point. The result is a highly efficient, low cost extraction process.

Highly efficient, low cost extraction process



of the plant, as well as monitor and control the entire diamond recovery process.

CitectSCADA monitors and controls the processes from the primary crushers and tipping to the diamond recovery plant. This is achieved via two redundant servers and two display clients at the mine, linking seamlessly to a 45,000 I/O tag system.

At the plant, primary crushers reduce the gravel into smaller manageable sizes. CitectSCADA monitors and controls all field parameters of these crushers, including oil pressure, hydraulic pressure, temperature, gap sizes of crushers and startup sequences.

Leaving the primary crushers, the gravel is conveyed to the Liberation Plant where scrubbers and vibrating screens are used to sort and wash it. There, CitectSCADA monitors and controls the water flow and start/stop motor sequences.

The diamond recovery process uses a lot of seawater hence a pump station is also controlled by CitectSCADA (and Siemens) to pump water from 1.5km out in the sea back into the plant.

Benefits

Even in its harsh environment, Namdeb remains committed to the highest standards in productivity and safety. The Elizabeth Bay Mine has National Occupational Safety Accredited Award (NOSCAR) status—one of the highest safety recognition awards in the industry. The site has also won several prestigious awards, including the Small Mines Competition Shield from the Namibia Chamber of Mines. The mine has also been awarded ISO 14001 certification for its exceptional environmental protection program.

Namdeb will continue to use CitectSCADA for further plant enhancements and expansions, largely as a result of its exceptional scalability.



“CitectSCADA’s scalability facilitates future plant upgrades without requiring modification to the existing hardware or software. Its single global database simplifies SCADA software management by allowing changes to be made at a single point that are immediately updated at all CitectSCADA stations.”

Ian Holl
Project Manager
Namdeb

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