



## DC PRO ENGINEERING, UNITED ARAB EMIRATES

### Key Facts

**Company:** DC PRO Engineering

**Website:** [www.dcproeng.com](http://www.dcproeng.com)

**Industry:** Power - Non-nuclear

**Country:** United Arab Emirates

### Products Used:

- CAESAR II®
- FEATools™

### Key Benefits:

- Provided detailed stress and structural analysis for the design of piping systems and equipment.
- Designed piping support system modifications within the original supporting system.
- Verified existing supports after modifications.
- Reduced client expenses by rectifying the existing installed supports.
- Completed the project with minimal delay from schedule.

### DC PRO REDESIGNS FAILING SUPPORT SYSTEM FOR OMAN CONVENTION FACILITY

Headquartered in Sharjah, UAE, DC PRO Engineering is a recognized world leader in the fields of district energy systems, co-generation, and tri-generation, and is renowned as a sustainability leader in green building mechanical, electrical, and plumbing designs. Services include engineering design, consulting, and project management plus engineering reviews, feasibility studies, efficiency monitoring, and recommendations for energy performance improvement.

*Climate Control Magazine* has named DC PRO the best district cooling consultancy company each year, beginning in 2012 and continuing through 2016. The company has completed projects in Australia, Uganda, Singapore, Chad, Abuja, Seychelles, Iraq, Lebanon, and GCC countries.

### PERFORMING ENGINEERING STRESS AND STRUCTURAL ANALYSIS FOR RE-DESIGN

Carillion Alawi LLC selected DC PRO to re-design the failing supporting system for the Oman Convention and Exhibition Centre project. The energy center contained 17,500 tons of refrigeration capacity covering an area of 130 m x 35 m. In this project, DC PRO was tasked with providing detailed stress and structural analysis for the design of piping systems and equipment.

The equipment design included seven chillers, 10 CT cells, 22 primary and secondary pumps, 11 condenser pumps, five air separators, six heat exchangers, and 20 centrifugal separators. The project's piping systems included carbon steel piping up to 48" in diameter for chilled water and glass-fiber reinforced plastic condenser piping ranging up to 64" in diameter. The longest piping runs in each system were approximately 150 m.



## WORKING WITHIN THE CONFINES OF AN EXISTING SYSTEM

The main challenge was that the original supporting system failed. DC PRO's assignment was to design the necessary modifications of the piping support system. Since the piping system was already in place, the modifications had to be designed within the original supporting system while rectifying the failing supports and verifying the other existing supports after modifications to ensure no further failures would occur once in operation.

## LEVERAGING CAESAR II® TO ENSURE DEPENDABLE OPERATION

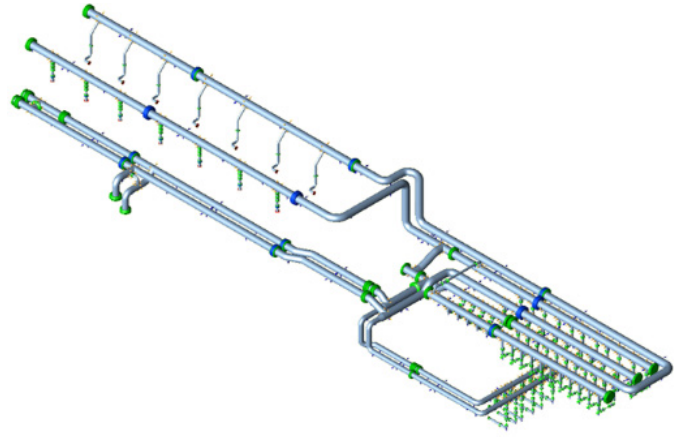
"We used CAESAR II to analyze the piping system stresses along with FEATools for finite element analysis," explained Abdul Aziz, senior mechanical engineer on the project.

By rectifying the existing installed supports, they saved the client significant expenses compared to having to change the entire support system. They completed the project with minimal delay from schedule.

"Without CAESAR II and FEATools, the support rectification plan would not have been possible in the first place," added Aziz.

## AWARD-WINNING PROJECT

DC PRO received the 2017 CAESAR II Drivers of Success Runner-up Award for its use of the software. The annual Drivers of Success competition recognizes innovative applications of Hexagon PPM products, impressive project results, and significant benefits from collaboration among disciplines and the integration of the products.



## ABOUT HEXAGON

Hexagon is a global leader in digital solutions that create Autonomous Connected Ecosystems (ACE). Our industry-specific solutions create smart digital realities that improve productivity and quality across manufacturing, infrastructure, safety and mobility applications.

Hexagon's PPM division empowers its clients to transform unstructured information into a smart digital asset to visualize, build and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 3.8bn EUR. Learn more at [hexagon.com](https://www.hexagon.com) and follow us @HexagonAB.