

FRONTEND

What's Big and Green?

The Nanhai petrochemicals complex is one of the largest facilities of its kind in China. It's also one of the most ecologically friendly.

Business Week magazine has honored Shell, co-owner of Nanhai, for the plant's environmental excellence. Shell was the only international energy company among the 10 Chinese and global companies to receive Business Week's first Green China Business Award.

The magazine noted that although Nanhai produces more than 2 million metric tons of chemicals a year, it uses two-thirds as much energy and just 5% of the water a conventional chemical factory requires.

Bechtel was the project management contractor for the massive undertaking that built Nanhai—a complex of 11 chemical plants. One of the largest Sino-foreign joint ventures, Nanhai is a 50-50 joint venture of Shell and China National Offshore Oil.

Global Awareness

Virtually every square inch of the Earth's surface is detailed on maps. While engineers relish this wealth of data, finding the right map with the right information can be daunting—and costly.

That's why Bechtel's Geographic Information Systems group recently developed a database of the company's most commonly used maps, from terrain elevations and highway maps to wetlands locations. The database minimizes duplicated efforts and costs, and its open storage format allows employees to import, combine, and overlay maps in standard engineering software. It's a powerful way to centralize and automate the dissemination of important data.

Powering Up

Bechtel is undertaking its first power project in Russia—a 411-megawatt combined-cycle plant in the Perm region about 1,300 kilometers east of Moscow—one of the coldest areas of the country.

Working with Turkish partner Enka, Bechtel will provide design and procurement services for the Yajva State District Power Plant. The customer is Russian power provider OGC-4 Open Joint Stock Company.

Bechtel's initiation into the Russian power market has included development of an early engineering plan that accounts for temperatures as low as minus 55 degrees Celsius. The design



Bechtel's Claudia Stephens and Kevin Edwards leading a tour of Hoover Dam.

**DOING
OUR PART**

STUDENTS SEE WHERE IT ALL STARTED

Bechtel has long been equated with megaprojects. Earlier this year, a group of high school students got to see first-hand where the reputation was born.

During the National Society of Black Engineers' (NSBE) annual convention in Las Vegas, 150 students enjoyed an educational tour of nearby Hoover Dam. The first Bechtel megaproject, it was built in the 1930s to harness the power of the Colorado River. Since then, the company has completed a number of other megaprojects, most recently the High

Speed 1 rail line in the UK.

The Bechtel Group Foundation underwrote the tour and also funded two \$5,500 scholarships for NSBE members. The S.D. Bechtel, Jr. Foundation provided funds for three \$15,000 scholarships—the largest presented at the convention

Bechtel also sponsored several convention events, including a career fair exhibit to promote summer- and full-time employment opportunities, workshops on engineering careers and dressing-for-success, and resume writing.

includes special features such as an especially large inlet air heater for the gas turbine. In addition, the project will use steel that can withstand bitter cold without becoming brittle.

Bechtel and Enka have worked together on numerous projects, including the Rijnmond power plant project

in the Netherlands, completed in 2004, and several power plants in Turkey in the 1990s and early 2000s. Current joint Bechtel and Enka projects include motorway projects in Albania and Romania as well as the Sakhalin II gas development project on Russia's east coast.