

REPORT

Sealing solutions
for growing cities



Shanghai is hosting the World Expo 2010 on the environmental theme "Better city, better life". In numerous spectacular infrastructure projects, with the purpose of improving living conditions,

Roxtec cable and pipe seals are used to ensure safety and sustainability. Among the important projects are the pioneering 800 kV power transmission system as well as new tunnels, bridges

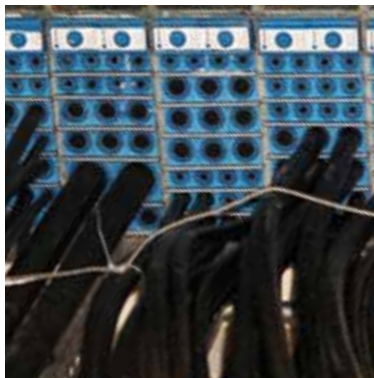
and water treatment plants. For the first time, people in the area around the expo will be able to drink their water from the tap without boiling it first.

Roxtec team reports on site
– from the World Expo City of Shanghai, China

We Seal Your World™



The Fengxian station is expected to beat all records within the power field.



Chief engineer Mr. Huang of the State Grid and Mr. Liu of Roxtec.

Building for the future

The World Expo is focusing on technical innovations for sustainable urbanization. As expected, Roxtec seals are present in buildings and projects all over the dynamic city. The seals are reliable, flexible and designed to cover future needs.

The Fengxian HVDC converter station of the State Grid Corporation of China is expected to be the first 800 kV station ever. 24 powerful transformers from ABB will supply a considerable part of Shanghai with energy from remote hydropower plants. The prestigious world record project must be totally secured. Investments must pay off, and you can imagine the disaster in case of a stop in the power supply to the vibrant metropolitan area.

Superior water barrier

Shanghai is a low-lying city. When the rain falls, there is a constant risk of flooding in the cable trenches. In order to ensure stable electricity supply, the State Grid specified Roxtec cable seals. Both designers and contractors recognize further benefits than just water-tightness:

“Roxtec is convenient to work with and makes it possible for us to

increase cable capacity whenever we need,” says chief engineer Mr. Huang. “It even looks beautiful!”

Flexible for upgrades

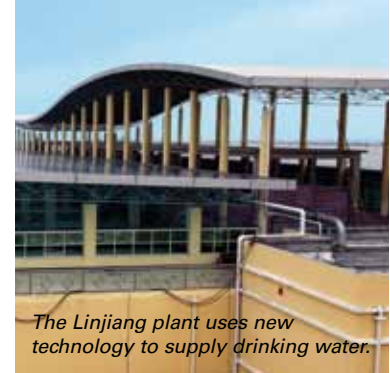
Different Roxtec seals are used in walls and cabinets to protect buildings and equipment from water, fire, pests and electromagnetic interference. In fast projects, nobody wants to use compounds or concrete. Last-minute changes and upgrades become difficult and costly if you are forced to break up the concrete and restart. With Roxtec, you can include 30 percent spare capacity and open up the seal whenever you want to modify the installation.

Preventing corrosion

Water from the rivers turns into drinking water in the Linjiang Water Treatment Plant. This triumph for public health is a result of the newly built plant, the new piping-system



The pump station of the water supply plant – protected from corrosion.



The Linjiang plant uses new technology to supply drinking water.

“ It is very convenient to work with Roxtec



Roxtec seals are used at the tunnel power supply station.



Roxtec solutions bring reliability, simplicity and capacity to tunnel projects.

and new technology. Roxtec waterproof seals have been selected for the entire project. Humidity would cause corrosion – affecting pump stations and other crucial equipment.

Useful and efficient

Roxtec seals are adaptable to cables of different sizes, which is beneficial both during installation and after construction. Halfway through construction, the contractors could install 50 percent of the equipment and then seal all openings for cables until next phase. “Roxtec helped us avoid the risk of corrosion. We used the seals’ spare capacity for adding cables,” explain project manager Mr. Zhen and electrical engineer Mr. Chen.

Safer city links

Other projects where Roxtec seals are used to reduce design time and increase safety are the Expo Axis substation, the Yaohua storm water

pumping station and the Changjiang Bridge. Another example is the 1.4 km Dapu Road Tunnel, built to simplify access to the expo. The cable entries to the power supply building have to be fire-proof, watertight and easy to maintain, since there must be light in the tunnel – especially in case of an accident. “It is all about ensuring safety,” says Mr. Zhang of Shanghai Tunnel Engineering Company.

BENEFITS

- Watertight
- Fire-proof
- User-friendly
- Time-saving
- Ready for upgrades



Facts

Project type	Infrastructure projects – 800 kV power transmission, water treatment plant, city links
Involved companies	<p>Fengxian: State Grid Corporation of China (owner), East China Electric Power Design Institute (designer), Shanghai Power Transmission and Transformation Engineering Co (contractor/installer)</p> <p>Linjiang: Shanghai Pudong Veolia Water Corporation Ltd (owner), Shanghai Municipal Engineering Design General Institute (designer), Zhejiang Zhu'an Construction Company (contractor/installer)</p> <p>Dapu: Shanghai Chengtou Holding Co. Ltd (owner), Shanghai Urban Construction Design & Research Institute (designer), Shanghai Tunnel Engineering Co. Ltd (contractor/installer)</p>
Applications	Cable and pipe penetrations in control rooms, valve rooms and transforming rooms as well as in drug rooms, disinfection tanks and control cabinets
Requirements	<p>Watertight, approved for 1 bar water pressure</p> <p>Fire-proof, approved for 120 minutes</p> <p>Anti-corrosion</p>
Roxtec products	<p>Roxtec G, R, and CF frames</p> <p>Roxtec RS seals</p> <p>Roxtec wedges</p> <p>Roxtec adaptable sealing modules, also in PE (potential equalization) versions</p>
Reasons for choosing Roxtec	<p>Protection against water and fire</p> <p>Flexibility for many cables sizes</p> <p>Easy to maintain and add cables</p> <p>First class sealing product quality</p> <p>Excellent service and availability</p>

Roxtec power and construction references

ABB, AREVA, Berlin Hauptbahnhof, Boston Central Artery Tunnel, Clinical Center Jena, Dow Chemical, Gamesa Eolica, Gaz de France, GE Wind Energy, Iberdrola, Pfizer, Siemens, St John's Waste Water Treatment Plant, Vattenfall, Vestas Wind Systems



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