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Protecting a National Asset: Burj Khalifa Towers with a 100 Year Design Life

Press Release

Dubai - February 16th 2010: Standing 828 meters (2,717 feet) tall and boasting more than 160 stories, Burj Khalifa is the world's tallest structure: a single tower that will eventually house 12,000 people.

The significance of designing and building the tallest building on Earth, costing over AED5.5 billion (US$1.5 billion), has become a matter of national pride making the protection of this national asset a priority to the government of the UAE, investors, and the tourism industry.

"The combination of a 100 year design-life and the aggressive exposure conditions of Dubai's environment were the reasons the designer had to carefully consider the durability of the tower's sub-structure," said Dr. James Aldred, of GHD Consulting Engineers, Manager of the Independent Verification and Testing Agency (IVTA) for the Burj Khalifa project. Substructures in Dubai, and in the Gulf region in general, are exposed to a shallow water table with high levels of salinity, which threatens the embedded steel reinforcement with corrosion.

To counter this risk, a high quality ternary blend concrete was used in the substructure of the tower, along with other durability enhancing measures to enable and ensure the desired lifespan.

Among those measures, a migrating corrosion inhibitor (MCI) supplied by United Corrosion Technologies was added into the concrete mix. MCI is developed and manufactured by the US-based Cortec Corporation, and utilizes bio-based renewable resources to provide corrosion protection to steel reinforcement.

"In our region's harsh environment, steel reinforcement can corrode rapidly, threatening structural strength and necessitating costly repair. Good engineering practice in designing for durability goes a long way in preserving structures and saving operating costs." said Usama Jacir, managing director of United Corrosion Technologies.

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About GHD Consulting Engineers:
GHD is an international network of professional and technical consultants. Established in 1928, GHD employs more than 6000 people across five continents and serves clients in the global markets of water, energy and resources, environment, property and buildings, and transportation. Wholly owned by its staff, GHD is focused exclusively on client success. Our network of forward-thinking engineers, architects, planners, scientists, project managers and economists collaborate to solve client and community challenges. They embrace the core values of Teamwork, Respect and Integrity to create enduring relationships that deliver exceptional results.

With a history of adapting to the ever-changing needs of its clients, GHD is recognised for its commitment to innovation, safety and sustainable development. We care for the wellbeing of our people, communities and the environments in which we operate.

Today, GHD is ranked as one of the world's leading engineering, architecture and consultancy firms. A member of the World Business Council for Sustainable Development, GHD operates under a Practice Quality Management System that is certified by Lloyds Register Quality Assurance to international standard ISO 9001:2008 and our Environmental Management System is certified to international standard ISO 14001:2004 by Lloyds Register Quality Assurance (LRQA).

About United Corrosion Technologies (UCT)
United Corrosion Technologies (UCT) provides corrosion solutions that maximize the value of structures and equipments. In the pursuit of delivering its promise to maximize value, UCT relies heavily on its team of highly qualified and experienced engineers that are capable of assessing corrosion risks and executing the most effective protection strategies.

UCT's team reclines upon a wide portfolio of technologies that includes Chemicals and Corrosion Inhibitors, Protective Coatings and Linings, Cathodic Protection Systems, and Non-Metallics/Composites. UCT also offers several corrosion-engineering services such as Value Engineering Protective Systems, Corrosion Audits, and Failure Analysis.

For more information, please visit www.unitedcorrosion.com

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