The Nanjing Youth Olympic Center, designed by Zaha Hadid, the first woman to win the prestigious Pritzker Prize for architecture, is a flagship facility for the 2014 Youth Olympic Games, containing a spaceship-shaped conference center and two skyscrapers, with multiple functions including media center, VIP accommodation and the Olympic committee office.

Very stringent requirements have been set for design and materials to ensure the Center will become an iconic landmark in Nanjing and fully comply with Olympic sustainability goals. High-performing, environmental friendly and energy-efficient materials thus become a natural choice. As a result, GRC (Glass Fiber Reinforced Concrete), a green decorative material replacing masonry, stone or aluminum panel, with greater flexibility in cutting and shaping, was adopted as the exterior decorative façade for the Nanjing Youth Olympic Center.

A high performance acrylic polymer, designed specifically for cement based applications, with a proven track record was introduced to our customer Beilida in developing the GRC façade panels that are used in the Nanjing Youth Olympics Center. This acrylic polymer, PRIMAL™ APR968LO (from our renowned cement modifiers product family) provides the cement based GRC panels the toughness and the flexural strength that are considered as the key performance requirements and also greatly reduces the chances of cracking. Overall the acrylic polymer modifications of the GRC façade panels help extend the durability and also retain the aesthetic appeal for a longer duration. Besides, this acrylic polymer is also designed to release no unpleasant odor during the panel fabrication and installation.
Dow also helped Beilida formulate a clear protective sealer based on PRIMAL™ CS-4000 that provides a number of distinct benefits including: outstanding water resistance and dirt resistance, and provide protection to the GRC façade panels from deterioration, and colour retention.

The clear sealer is also formulated to provide the desired, natural stone-like, matt appearance. PRIMAL™ CS-4000 is also a pure acrylic co-polymer with a proven history in clear sealing application. It is very resistant to UV light and will not undergo photocatalytic breakdown that is common in other polymers. Besides that, PRIMAL™ CS-4000 has demonstrated superior carbonation resistance that will help further enhance the durability of the GRC façade panels.

Game-changing Solutions

PRIMAL™ APR-968LO acrylic polymer provides multiple benefits when added to cement based systems:
- Increased flexural strength
- Increased toughness & impact resistance
- Better adhesion
- Enhanced durability

PRIMAL™ CS-4000 acrylic polymer when formulated as a clear sealer provides distinct benefits:
- Excellent water resistance
- Excellent UV resistance
- Proven anti-carbonation performance
- Excellent water whitening & efflorescence resistance
- Outstanding durability

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