



28 Development & Application of Lightweight Decorative Concrete Cladding Panels

Baogui Zhang

Beijing Baogui Stone, China

Abstract

The paper introduces new findings in the development of Lightweight Decorative Concrete (LWDC) cladding panels at the Beijing Baogui Stone Art Science and Technology Co. Ltd.

LWDC panel combines the advantages of the expressiveness of decorative concrete and the high strength and lightweight properties of GRC. It uses expanded polystyrene (EPS) as mould to reduce the production cost and the stone effect is achieved by the combination of cement and rock ballast. After chiseling on the hardened surface, rock ballast is exposed to imitate a natural stone texture. The finish looks natural, simple and aesthetic, hence avoids the use of paint to get the similar effect. It is also robust and durable.

GRC products can also be copper-plated, which meets the demands of the fast growth in modern architecture. This has been successfully used at the China History Museum, the Diaoyutai State Grand Hotel and the new terminal in Capital Airport.

The success of various key projects in China, such as the National Grand Theatre, the Lhasa Railway Station, the Ordos Grand Theatre, the Datang Xishi Museum and the Red Phoenix Gate of Daming Palace etc. shows the interdisciplinary collaboration between culture and architecture. Specifically, the artistic expression of GRC makes it easy for architects to reach a consensus, its environment-friendly properties attract the awareness of the governing bodies, and its good security and cost-effectiveness enables investors to justify their decision.

Should GRC be involved in the early stage of design, it can help advance the whole construction process. The development and application of LWDC cladding panels gives architecture more vigour and vitality. It is strongly believed that GRC has an even brighter future.