

**CITY UNIVERSITY OF HONG KONG**

香港城市大學

**Scaffolding Systems in Hong Kong –  
Current Practice and Development  
Of MBMSS**

香港棚架系統 – 竹通混合棚的現況及發展

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## **Abstract**

Scaffolding is widely used in the construction industry. Traditional bamboo scaffolding has a long history and metal scaffolding has been in use for nearly 100 years. To meet safety requirements, address the problems involved in high rise building construction and take advantage of modern building technology, a new design scaffolding system has been invented. The Metal Bamboo Matrix Scaffolding System (MBMSS) takes advantage of the merits of both bamboo and metal scaffolding. Drawing support from academic research, and in conjunction with a standardised operational process and management protocol, MBMSS has been developed into a flexible scaffolding system that fulfils the requirements of various scenarios in the construction industry. The system has been patented in Europe, Hong Kong and China, and has been used in construction projects since 1998. The live load of MBMSS is less than metal scaffolding, and the new system has better safety features than bamboo scaffolding in terms of structural calculation and a standardised working environment. A new calculation approach, NAF-Nida, has been adopted, and safety has been further improved by considering the imperfection of alignment and deformation of the scaffold members; taking the nylon safety net vibration induced by wind into consideration, anchoring intervals and safety precautions during typhoons have also been reviewed. A modern operation and management scheme has also been developed to ensure the system's safety standards and address quality assurance and cost control. MBMSS is an integrated system and its performance has been proven by hundreds of projects implemented in actual environments and various working scenarios.

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