

Address: Hong Kong Polytechnic University, Phase 8, Hung Hom, Kowloon, Hong Kong.
Telephone: (852) 3400 8451 Email: cnerc.steel@polyu.edu.hk Website: <https://www.polyu.edu.hk/cnerc-steel/>

Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch) Newsletter – Special Issue (February 2023)

On 10 February 2023, a project entitled “Basic Theory, Key Technology and International Application of Chinese High Strength 690MPa Steel Structures”, led by Prof. K. F. Chung, Director of Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch) [CNERC] at The Hong Kong Polytechnic University (PolyU) received a Grand Award of the China Steel Construction Society (CSCS) Science and Technology Awards 2022 (Cert. No. 0163 of National Office for Science and Technology Awards (www.nosta.gov.cn)). The prize presentation was held at the Opening Ceremony of the Annual Conference of the CSCS in Guangzhou. It is the highest honour of the Awards, and PolyU is the only Hong Kong institution honored.



Prof. Chung (2nd on the right) received the Grand Award of the CSCS Science and Technology Awards at the Opening Ceremony of the CSCS Annual Conference

The award-winning project led by CNERC was successfully completed with academics from Tsinghua University and Imperial College London, and experts from famous consulting and construction companies in Hong Kong as well as leading steel fabricators and suppliers in China.

The project provided a comprehensive solution to innovative applications of high quality Chinese 690MPa steel in construction. Through a comprehensive research and development collaboration, advanced predictions on mechanical properties and structural behaviour of S690 welded sections were achieved through integrated experimental and numerical investigations. This allowed minimal or even no penalty in both strength and ductility in these welded sections after welding. Effective design rules became available through rigorous design development and codification.



R&D achievement: Effective use of Chinese high strength S690 steel in construction

The research results have been applied in a number of construction projects in Hong Kong, such as the completed Double Arch Steel Bridge of the Cross Bay Link in Tseung Kwan O, and the long span roof structures of the Kowloon Tsai Swimming Pool as well as the steel roofs of both the East and the West Stands of the Yuen Long Stadium (both under construction).

A total of 84 winning projects were honored by the CSCS Science and Technology Awards 2022, including 5 grand prizes, 31 first-class prizes and 48 second-class prizes. There are also 40 prizes on technological innovation.