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Work Theme A: Sustainable Infrastructure Development

A1: Atmospheric Corrosivity of Exposed Structural Steelwork

Project Title:

a) Atmospheric Corrosivity on Infrastructures in Hong Kong

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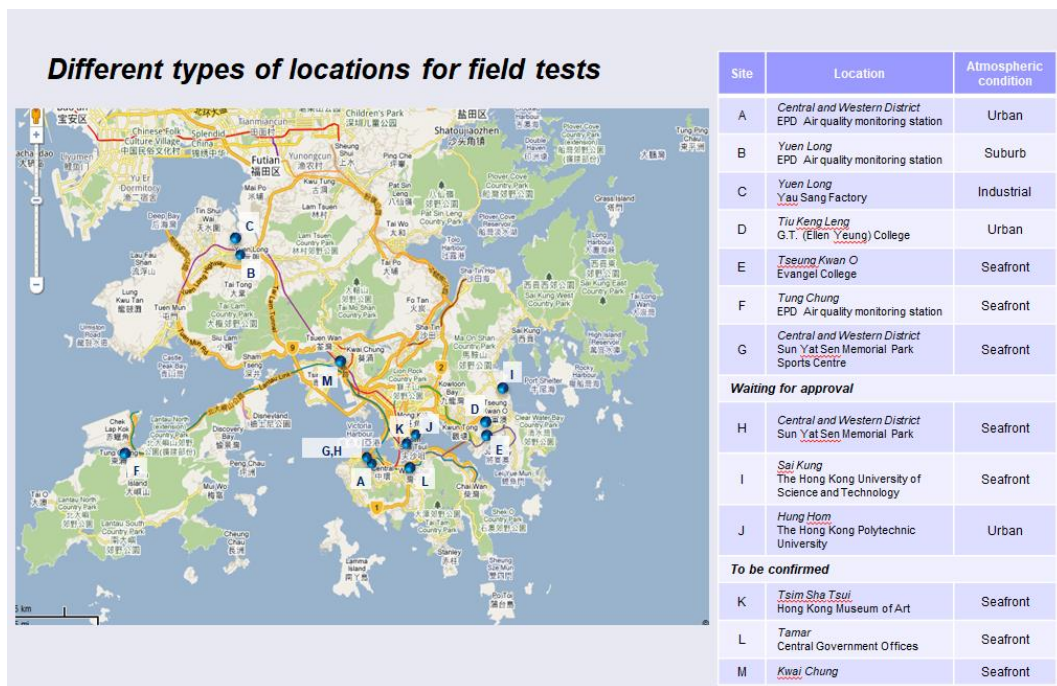
Progress / Achievement:

To confront potential durability problems of the infrastructures in Hong Kong, it is essential to investigate and understand various controlling mechanisms in corrosion in exposed structural steelwork. Therefore, atmospheric corrosivity of exposed structural steelwork under local environments in Hong Kong are to be examined.

According to the expect degrees of corrosion and the importance of infrastructures, a comprehensive field test programme should be conducted at selected locations in Hong Kong according to anticipated severity of corrosion as well as the importance of infrastructures. Seven field test sites (Central and Western District EPD Air quality monitoring station, Yuen Long EPD Air quality monitoring station, Yuen Long Yau Sang Factory, Tiu Keng Leng G.T. (Ellen Yeung) College, Tseung Kwan O Evangel College, Tung Chung EPD Air quality monitoring station and Sun Yat Sen Memorial Park Sports Centre) have been settled in different kind of locations (rural, urban, industrial and costal areas etc.) in Hong Kong in 2017 and six field test sites are waiting for approval and to be confirmed in 2018. Zinc plates, steel plates and conventional galvanized steel plates and 5%Al galvanized steel plates will be examined in outdoor conditions.

Two of the field test sites located in secondary schools (G.T. (Ellen Yeung) College and Evangel College) in Hong Kong for atmospheric corrosivity field test. Secondary school students will participate in this project and conduct some simple academic activities and trainings. Student education in Science, Technology, Engineering and Mathematics will be highly developed in the project.

CNERC will collaborate with French Corrosion Institute to conduct the atmospheric corrosivity field test in Hong Kong in 2018. Specimens from France will be exposed in the site in Hong Kong and the results will be assessed and compared with other corrosion rates in Dubai and France.



Different types of locations for field tests



Tung Chung EPD air quality monitoring station



Sun Yat Sen Memorial Park sports centre



G.T. (Ellen Yeung) College participated in CNERC research project