

UTRACON STRUCTURAL SYSTEMS PTE LTD

HONGKONG AND SHANGHAI BANKING CORPORATION (HSBC) BUILDING

THE BUILDING

This building was having a major make over when 3 columns were discovered to be structurally inadequate to support its intended design load. Some portions of the column links were found to have been cut to accommodate the erection of external façade previously. The 3 columns were all concealed by the facade until the day the facade was removed for A&A works.



STRENGTHENING METHOD

Carbon fiber wrap is used to act as the missing links and also strengthened the axial capacity of the columns. To ensure easier wrapping and optimize the strengthening capacity of the carbon fibers, treatment has to be done on the column face. Surface preparation works involved:

- Making good the column sections by casting them back to their original size;
- Patching up localized concrete areas that had already spalled off and
- Grinding the rough surfaces of the column to make it smooth so as the carbon fiber will obtain full surface contact with the column.



Owner : HongKong & Shanghai Banking Corporation Limited

Contractor : Woh Hup Pte Ltd

Construction Period : June – July 2004

FIBRE-WRAPPING METHOD

The “dry” method of carbon fiber application is adopted. As the works are going to take place in open areas at the city center, the “dry” method will ensure a cleaner and tidier work place and epoxy will not be accidentally blown to the surroundings i.e. passer-by.

UTRACON'S INVOLVEMENT

Our scope of works involved the following :

- Casting the columns back to their original size
- Surface preparation for fiber-wrapping
- Design, supply and installation of carbon fiber reinforced polymer

