FIRE SAFETY ISSUES
A Case Study of JTC Factories

by

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ABSTRACT

Singapore’s economy depends largely on the manufacturing sector. According to statistic (see fig. 8), Manufacturing Sector accounted for 21.9% of Singapore GDP in 1998 which was the second highest after Financial and Business Service Sector of 29.2%. Apparently, industrial development in Singapore played an important role in the national economy. JTC and its wholly owned subsidiary Tech Parks accounted for almost 80% of Singapore Island’s industrial space. JTC being the “key” architect in industrial development had designed a wide range of factories for the local and oversea industries since 1968. Its success was attributed to the quality of factory designs, and industrial fire safety strategy was one of the crucial considerations in their factories. Due to the limited industrial land in Singapore, JTC’s factories began to expand upwards, building higher and higher with more floor areas. Innovative factory designs might resolve the problem of scarcity of land in Singapore; however, it also gave rise to more complex issues of fire safety in industrial building when factories became “high rise”.

This dissertation attempts to investigate and analyze the various types of JTC’s factories, the differences between the past and present designs and the design strategies in relations to fire safety issues. The scope of study will focus on five basic types of JTC factories, namely standard factory, semi-detached factory, terrace factory, flatted factory and stacked-up factory. The first part of the dissertation will present a short history of Jurong Town Corporation, its beginning and its factory design development. The second part will deal with the importance of fire safety of industrial buildings in Singapore and how JTC responded to industrial fire safety issues. Part three are case studies of JTC five types of factories, the studies will include review of previous works, identified the problems and description of the hypothesis. Part four gives an overall appraisal of JTC factory designs.

The research will be carried out through interviews, site visits, case studies comparing the new and the old, analyze the differences in space planning patterns in relationship to the local fire safety rules and regulations at different period of time. In addition, the dissertation will discuss and analyze how the designers integrated fire safety issues with design concepts in their architecture. World Wide Web Internet surfing, newspaper cutting, JTC and URA annual reports study and the analysis of Singapore Code of Practice For Fire Precautions will be part of the research strategy.

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