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BRIDGES IN ASIA

Recent vigorous economic growth in South East Asia has redistributed population and expanded industry and infrastructure building.

Development of rural and remote regions required innovative engineering solutions to gain right of way to new land for extractive purposes, industry, urban development and the critical arteries of commerce – roads.

Chung Cheng Overpass, Taiwan

Chung Cheng Overpass

In countries where, historically, seaports and rivers were the main outlets, roads and bridges emerged to provide heavy load capability and more reliable and productive transport.

In this respect steel bridges were found well suited to the pace of development and challenging terrain. Offsite completion, orthodox freight to site and relatively simple erection were invaluable aids to the rapid expansion of the time.

The use of steel in bridge construction is not new, and knowledge of the manufacture and behaviour of this material is well understood where advancing design use of steel has resulted in economical and aesthetically pleasing bridge structures. Steel offers particular advantages in that it can be shop fabricated, under controlled conditions, to almost any desired cross sectional geometry to meet the specific strength requirement at each site, often at completely undeveloped locations.

However corrosion prevention is one essential factor in the economic utilisation of steel where provision of the appropriate protective coating can influence initial and whole of life cost, eliminate maintenance and lost service time, and defer the replacement date of structures.

A wide variety of products have been used for this purpose, however, many bridges require permanent maintenance teams to sustain adequate steel protection.

In most environments, after-fabrication galvanizing provides very suitable corrosion protection for steel and has a range of coating characteristics which make it unique. These include an alloy hardness greater than mild steel, a self-inspecting process discipline and predictable life directly proportional to its heavy coating thickness. These result in a surface alloy with competitive cost, resistance to severe impact, extended service life and in turn reliability for use in engineering calculations.

This issue of *'galvanize!'* features the widespread use of hot dip galvanized steel bridges in the development of a number of South East Asian countries. Twenty-five years on, these are a tribute to many people and to the value of galvanized steel.

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