



MODULAR BUILDINGS HAVE STOOD TEST OF TIME

Modular Integrated Construction is worth noting as it is probably our future in building construction.

The industry claims it is a new technology, but I beg to differ: even as kids, we played with building blocks and so if we ignore the term, it is no more than using building blocks to construct buildings.

By building individual modules in a factory and assembling them at the building site, we can vastly shorten the process and achieve high quality.

First, we can multiply the fabrication of the modules in a large factory offsite.

Second, by using manufacturing technology, we can impose far stricter quality control on the process to ensure high quality in the final product.

Third and most importantly, as most MiC buildings are predominantly made of metal, we can eliminate wet trades – bricklaying, concreting and plastering.

As the name implies, they are wet, messy and take time.

They are also heavily dependent on skill levels, and will undoubtedly lead to varying levels of quality in the final product, as most of us have seen, when unskilled plastering results not only in unsightly wall surfaces but also makes them susceptible to water leakages.

But metal buildings are not perfect.

Compared to concrete, metal structures, walls and floors are less efficient at sound and thermal insulation.

As steel is often used, rust can occur and shortens these buildings' lifespans.

The most common application for MiC is when speed is vital.

Witness the almost magical construction of temporary hospitals in Wuhan this year. The world watched with dropped jaws as these hospitals were built in a matter of seven days.

Hong Kong followed with urgent construction of isolation wards, but we needed more than a month.

We do not have the space for large-scale offsite construction of



modules, and our building regulations are stringent and require an approval process that cannot be done in days.

But our efforts are equally exemplary, and we now have four sites in various stages of completion, ready to receive patients and suspected cases.

However, if we believe MiC is novel, let me point out an iconic building, right here in the center of our financial district, that employed this method: HSBC headquarters on 1 Queen's Road Central.

It is standing up to some 40 years of use, and remains a most prestigious building, with none of the shortcomings of a steel building.

Its occupants do not note any issues with thermal or sound insulation, helped by the judicious application of insulation materials lining the walls and floors.

Superb engineering also ensured the steel structure, wall and floor partitions and cladding are all corrosion protected.

Unlike the notorious incident involving the World Trade Centre, which burnt down quickly, the intumescent paint applied to the steel structure will protect the structure from fire damage for at least two hours.

When exposed to fire, the special paint will automatically expand and cover the structural steel surface with an insulation layer to protect it from the heat of the blaze, allowing adequate time for firefighters to douse the flames before they can cause permanent damage, and allow ample time for occupants to escape safely.

Ever improving technology and the painstaking efforts of engineers not only protects human life, they facilitate a safe and comfortable living for all.

Veteran engineer Edmund Leung Kwong-ho casts an expert eye over Hong Kong's iconic infrastructure