

Cloud Computing Facility, Hong Kong

Hi-Tech Composite Covers for High-Tech Cloud Computing Facility in Hong Kong



Fibrelite trench covers protect fibre optic cabling at emergency vehicle access point (image used for illustration purposes as actual data centre cannot be shown)



Fibrelite covers are designed to withstand heavy loads and harsh weather conditions for many years (Image of a similar installation used for illustration purposes as actual data centre cannot be shown)

Project Overview

One of the largest data centre developers and operators in Hong Kong S.A.R of China, came to Fibrelite looking for a retrofit replacement for their failing concrete trench access covers. The covers protected and allowed access to fibre optic cables and were located at the entrance of an emergency vehicle access point. A safe reliable replacement was required that would be capable of withstanding heavy vehicle loads and harsh weather conditions including flooding which the area is prone to.

Problem

The rapid growth of content-heavy mobile applications and cloud computing means that the demand for efficient and secure computer hardware to store data is growing exponentially every year. This facility has many miles of fibre optic cabling along with environment and supply cables in precast concrete cable trenches, which must be protected yet easily accessible and identifiable. Originally, heavy concrete trench covers had been fitted over precast concrete cable trenches.

Due to the weight of the previously installed concrete covers, they had to be small in order for them to be removed and replaced. Despite the size, they were still heavy and challenging to move making the process time consuming, requiring specialised lifting equipment and creating potential health and safety risks. The concrete covers had become damaged over time due to frequent heavy loads and environmental factors, making removal even more difficult while increasing the health and safety risks whilst compromising the protection of the cables.

The client was looking for a simple, long-term custom solution which would enable fast, safe manual removal. The replacement covers needed to be able to withstand a maximum traffic load of 40 tonnes (D400) and harsh weather conditions like flooding, whilst preventing unauthorised access. Minimal replacement time was essential to minimise disruption to the emergency route.

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Solution

Fibrelite designed and manufactured bespoke trench covers to fit directly into the existing frames, making installation quick and easy, minimising disruption to the emergency vehicle access point.

All Fibrelite covers can be safely removed and replaced by two people using the FL7 lifting handles due to their high strength-to-weight ratio. This also enabled less covers to be used in the replacement whilst covering the same aperture. The corrosion-resistant covers can now be removed and replaced safely, minimising disruption and providing a safe walking and driving surface in all weather conditions.

The specified Fibrelite heavy-duty trench covers have a 40-tonne load rating (D400), enabling them to withstand heavy vehicle traffic whilst still being able to outperform concrete on a long-term basis. Designed as a fit and forget product all Fibrelite GRP composite covers are maintenance free corrosion-resistant and ultra-durable.

The covers were fitted with restraining paddles and a unique securing mechanism to prevent unauthorised access and any movement when the area is flooded.

Results

The client now has a long-term access solution that requires minimal maintenance and will continue to perform year after year, withstanding harsh weather conditions and heavy traffic from emergency vehicles while enabling quick safe access for monitoring and maintenance.

The customer is now considering replacing all the trench covers over the next two to three years.