

Case study:

Alimak construction hoists speed construction on record-breaking Hong Kong tower



International Commerce Center, Hong Kong, 484 m



Examples of tall buildings and structures where Alimak construction hoists or permanent lifts have been installed:

- *Konstantynow Radio Mast, Poland (destroyed), 646 m*
- *Abraj Al Bait Towers, Mecca, Saudi Arabia, 595 m*
- *CN Tower, Toronto, Canada, 550 m*
- *Taipei 101, Taipei, Taiwan, 508 m*
- *International Commerce Centre, Hong Kong, China, 484 m*
- *Troll A oil production platform, North Sea, 472 m*
- *Petronas Towers, Kuala Lumpur, Malaysia, 452 m*
- *Jin Mao Tower, Shanghai, China, 421 m*
- *Two International Finance Centre, Hong Kong, China, 415 m*
- *CITIC Plaza, Guangzhou, China 391 m*
- *Shun Hing Square, Shenzhen, China, 384 m*
- *Gullfaks C, North Sea, 380 m*
- *Central Placa, Hong Kong, China, 374 m*
- *Bank of China Tower, Hong Kong, China, 367 m*
- *Emirates Tower I, Dubai, UAE, 355 m*
- *Tuntex Sky Tower, Kaohsiung, Taiwan, 348 m*
- *Electricity transmission towers, China, 346.5 m*
- *Viaduc de Millau, France, 343 m*
- *Burj Al Arab, Dubai, UAE, 321 m*

International Commerce Center, Hong Kong

Hong Kong's tallest tower being completed with Alimak hoists featuring specially designed cars

Six Alimak construction hoists being used on Hong Kong's tallest tower and the fourth tallest building in the world, the 118-storey International Commerce Centre, to alleviate tower crane lifting duties.

Six Alimak construction hoists are being used to reduce tower crane lifting duties on Hong Kong's tallest tower, the 118-story International Commerce Center.

Three Alimak dual construction hoists with a total of six cars are being used for the transportation of personnel and materials during the construction of what will become Hong Kong's tallest building and the fourth highest building in the world.

The International Commerce Center (ICC) is being built in West Kowloon, Hong Kong. At its full height it will have 118 stories and stand at 484 m (1,588 ft). Completion is scheduled for 2010.

Record Number of Alimak Hoists

Alimak Hek has supplied a three-unit hoist configuration with each unit having two cars, for a total of six cars. The installation includes two of the largest cars the company has ever installed on a single mast, both measuring 2 m x 5 m.

The hoists have been installed on a common tower secured to the front of the ICC building, which is part of the Union Square multi-tower complex. Each of the three units operates on its own mast attached to the common tower.

The Alimak hoists were ordered through the company's Hong Kong distributor, C. Crossfield and Co. Ltd, which also installed the equipment in association with Alimak Hek engineers. Crossfield service engineers maintain a permanent presence on the site.

ICC is being built above the MTR Kowloon Station and a station for the Airport Express railway link. The development is owned and being jointly developed by MTR Corporation Ltd, Hong Kong's metro operator, and Sun Hung Kai Properties (SHKP), the largest property developer in Hong Kong.

The tower was designed by the American architectural firm Kohn Pedersen Fox Associates (KPF) in association with Wong and Ouyang (HK) Ltd, and is being built by Sanfield Building Contractors Ltd, a member of SHKP.

High-rise veteran

Sanfield's project director, Ricky F. W. Lam, is a veteran of Hong Kong's high-rise construction scene. His first major project was the Sun Hung Kai Centre in 1980, which at the time was one of the highest buildings in Hong Kong.

"We used Alimak hoists on that project, and they have been installed on many other projects I have worked on in the years since," says Mr. Lam.

"When we were planning the International Commerce Center tower, I specified the use of Alimak hoists. I wanted to minimize the use of cranes, because with a project of this size and configuration, the large-scale use of hoists in conjunction with climbing cranes can be very effective.

"We worked very closely with Alimak Hek and Crossfield in drawing up the specifications for the hoists. An important factor was that I wanted to use a hoist for lifting the glass cladding panels up the building as we progressed, thereby reducing our hook time with the cranes. These panels are almost 5 m in height, and so we had to have two of the cars built to a dimension of 2 m x 5 m.

Volume materials

"But the hoists are also being used for smaller items and for volume materials such as cement and tiling. The flexibility and speed the system gives us is very important when working on a tight schedule."

In addition to the building materials, the hoists are also used to transport large numbers of the 2,000-plus working personnel to the various levels of the building. The two largest cars are part of an Alimak Scando Super FC 33/50C TD dual-car hoist. Two Alimak Scando Super FC 28/27 C TD dual-car hoists provide another four cars in total, each of them measuring 1.5 m x 3.7 m in car size.

All the hoists have a maximum lifting height of 393 m and can travel at speeds of up to 100 m/min.

ICC stories have a floor-to-ceiling height of 2.85 m in the two lower zones, and 3.15 m for the three upper zones. Cladding is with a low E-coating curtain wall.

Transporting both men and materials, the three Alimak construction hoists feature a total of six cars. Together, they are helping to speed construction of what will soon become Hong Kong's tallest building.

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Worlds highest hotel

Under the terms of the agreement with the developers, Sanfield is releasing the lower levels of the building to tenants as the tower climbs skyward. The Airport Express and the MTR are already operational, and other tenants of the multi-use building are moving in as work progresses. The last tenant to open for business will almost certainly be Ritz-Carlton, which will open a five-star hotel on the top 15 floors, making it the highest hotel in the world.

ICC, which is being built on reclaimed land, is three minutes by MTR from Hong Kong Central, 20 minutes by train from Hong Kong International Airport, and 30 minutes by rail from Shenzhen. The project will comprise 2.5 million square feet of Grade A offices, a 1 million square feet shopping mall, luxury residences and serviced apartments, and the five-star Ritz-Carlton hotel with a convention center.

On the opposite side of the harbor, and designed to form a 'gateway', SHKP, together with another major Hong Kong developer, Henderson Land, also developed the current record holder for Hong Kong's tallest building, Two International Finance Center, just 60 m shorter than that of the ICC. That project also used Alimak construction hoists.



DETAILS

Location	International Commerce Centre, Hong Kong
Hoist type	Alimak Scando Super FC 33/50 C TD II
Number of cars	2
Capacity	3,300 kg/car
Speed	0–100 m/min
Lifting height	393 m

Hoist type	Alimak Scando Super FC 28/37 C TD II
Number of cars	4
Capacity	2,800 kg/car
Speed	0–100 m/min
Lifting height	393 m

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