



Construction Access Systems Ltd

Offering Innovative Common Tower
and Access Solutions to High Rise
Construction Challenges



Construction Access System's managers have the experience of providing access solutions on some of the most prestigious high rise buildings in the United Kingdom. We are a Company which is constantly learning and understanding the needs and requirements of our clients. It is with this in mind that a new Common Tower System was developed to meet the needs and demands of a modern day construction site.

What is a Common Tower?

A Common Tower is a temporary structure that is tied to the main building and is used in conjunction with rack & pinion construction hoists to provide access into the building under construction.

Why use a Common Tower?

A construction team working on a high rise tower will need to ensure that they have the most efficient access system available for getting personnel and materials to the work face whilst keeping the minimum opening, for access into the building. This concentration of hoisting in one area allows cladding to be installed around the open faces of the building, except the small access point to the building from the Common Tower, and then allows for the fit out of the lower floors as the main building is being constructed and grows in height. What can I tie to the Common Tower? A Construction Access Systems (CAS) Common Tower can accommodate conventional twin car single mast hoists, large single car twin mast hoists or a temporary staircase structure on any of its faces. The Common Tower is of a modular design and is capable of adaption to different sizes and shapes to suit various site conditions and to accommodate twin hoists with up to two metres width.



How is the Common Tower installed?

The CAS Common Tower is designed for erection and dismantling either by manual handling of the components or by crane handling of large sub-assemblies of one, two or three floor Common Tower modules.

What height can the Common Tower be erected to?

Construction Access Systems Limited's Common Tower can be used on buildings with up to 70 storeys and heights up to 300 metres in a standard configuration and can go much higher with additional engineering and components.

Who will design the Common Tower layout for my project?

CAS will provide project specific design calculations and drawings for each project specifying the exact bracing layouts, leg configurations, tie quantities and spacing for the Common Tower System. CAS will work with the Temporary Works Coordinator and design teams for the project and will liaise with other trades on site such as cladding providers and hoist providers.

Engineering

The Tower is designed as a temporary structure using the principles of BS5975:2008 "Code of Practice for Temporary Works Procedures and the Permissible Stress Design of Falsework". To achieve the low component weights required for manual handling extensive use is to be made of aluminium components and these are designed in accordance with BS 8118:Part 1:1991 "Structural Use of Aluminium". Project specific design calculations and drawings will be prepared for every use of the Common Tower System specifying the exact bracing layouts, leg configurations, tie quantities and spacing.

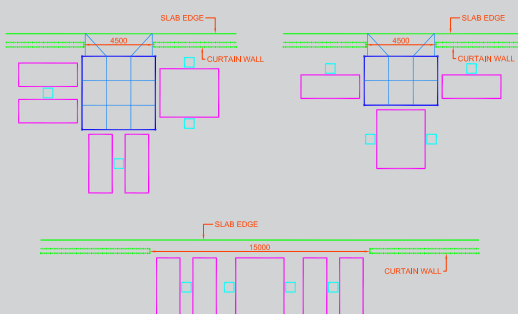


Component Testing

To back up design calculations CAS has been working with the University of Southampton Research institute for Industry. A number of tests were performed to determine the buckling load of the leg stanchions of the Common Tower System. The tests were conducted using the University's column testing machine in the Heavy Structures Laboratory.

Common Tower Footprint

The standard size Common Tower is 5mtrs x 5mtrs in plan, which is divided up into 9 square modules. Around the 3 open faces of the Common Tower 3 twin hoists or a different combination of hoists can be installed. The size of the Common Tower can be adjusted by adding or removing the square modules. The Common Tower and hoist arrangement results in a small footprint and concentrates the access in one place thus improving the site logistics.



Most of the Common Tower components are made of lightweight aluminium and have been designed to a low weight so they can be easily carried and installed. This speeds up installation times as none of the components are crane dependent.



One or two floor Common Tower modules can be built in an area on the ground if there is sufficient room on site. The building of a Common Tower module on the ground reduces the risks from hazards of 'working at height' than manually building on the main Common Tower structure and can speed up the installation process. Once built the module is lifted straight onto the main Common Tower structure and the ties connected and adjusted. This is a very easy and quick process and usually takes no more than 20 minutes to complete.



Due to the innovative design of the CAS Common Tower System, cladding can be installed to the lower floors of the building once the main construction work has been finished, to assist with the fit-out. The ties usually go through the shadow box of the cladding panel

Common Tower & Integrated Staircase Assembly

The CAS staircase utilises most of the Common Tower standard components with adjustable stair tread and landing assemblies. It is fitted with adjustable handrails to both sides of the stair tread. The staircase landing levels are within 100mm of Common Tower platforms.



Staircase can be used with the CAS Building Wrap, which is made of a heavy duty flame retardant material, which encloses the staircase assembly. The building wrap can have advertising printed on it and can be used as a powerful & effective marketing tool to promote the building under construction.

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