COX GOMYL
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Case Study
The Shard, London

The tallest building in the United Kingdom

Facts & Figures

Commencement	2010
Completion	2012
Building Height	310m
Floor Count	87
No. of Access systems	14
BMU Type	7000 Series
Outreach	Up to 23.25m
Building Type	Mixed-Use

As the tallest skyscraper in Western Europe, The Shard takes its name from the four shards of the double-glazed glass facade set at various angles, towering more than 20m above roof level. Architect Renzo Piano designed an irregular pyramidal-shaped building from the base to the top, laying down the challenge to CoxGomyl's engineers and global resources.

Due to its unique shape and sloping facade, the iconic Shard of Glass project required a custom-made solution utilising the best of CoxGomyl's extensive global resources.

The access scheme consists of three distinct areas, the first being eight multiple knuckle machines housed in garages at level 29 behind mechanically retracting panels. Machines with reaches of up to 15m are automatically extended and parked to these pre-set positions as small as 3.5 x 4.5m. A similar system is used at level 75 where another four multiple knuckle machines are parked.

The system is completed by the level 87 BMU, which sits among the cantilevered shard tips. Complex sequences of movements were required to move the BMU into working position without coming into contact with the building. The CoxGomyl solution was to design a BMU that operates in a similar fashion to a backhoe. Three sections of the jib luff independently to give a full range of motion. This allows the jib to reach up almost vertically to access the top panels while also enabling the jib to fold down out of sight for parking.

In addition to the three major areas, there is a smaller BMU at level 19 as well as a unique rope diverter system at level 20, which was developed especially for The Shard to overcome planning restrictions that made a traditional BMU system impossible. Recessed monorails with power winch cradles inside the station concourse soffit complete the access scheme.

For more information:
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Technical Data
The Shard, London

No. of BMU	1	4	8	1
Jib type	Multi luffing	Multi knuckle telescopic	2 stage telescopic, multi knuckle	Luffing
Outreach	13 m	Up to 12.5 m	Up to 23.25 m	6.75 m
Jib luff angle	90 deg	/	/	/
Cross bar slew angle	180 deg	240 deg	240 deg	240 deg
BMU slew angle	350 deg	/	/	/
Actual hoist height	310 m	270 m	110 m	70 m
Cradle SWL	340 kg	340 kg	340 kg	340 kg
Cradle length	3.5 m	3.5 m	2.7 m	2.5 m
Cradle capacity	2 operators	2 operators	2 operators	2 operators
Cradle restraint system	Interlocked lanyards with special guiding system			
Track system	Fixed	Fixed	Fixed	Twin
Communication	Radio	Radio	Radio	Radio
Emergency retrieval	Manual	Manual	Manual	Manual

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For more information:
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