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# The Shard London, UK

7000 Series - Job Sheet  
01/13 Edition

As the tallest skyscraper in Western Europe, The Shard takes its name from the four shards of the double-glazed glass façade 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.

## Facts & Figures

Commencement	2010
Completion	2012
Building height	310m
Floor count	87
No. of BMUs	14
Outreach	Up to 23.25m
Building type	Multi function



## Technical Data - The Shard, London, UK

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



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**EW Cox Holdings Pty Ltd**  
 182 Normanby Road, Southbank, Vic 3006, Australia  
 Phone +61 3 9673 4444 Fax +61 3 9673 4400  
 Email headoffice@coxgomyl.com Web www.coxgomyl.com

**International Offices**  
 Abu Dhabi • Dubai • Hong Kong • London • Madrid  
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