



Transforming
Glass
to enhance
Architectural
Environments

Setting new limits for Architectural Glass

Bent and Curved Glass Pty Ltd are often presented with challenges requiring a re-assessment of what can be achieved in architectural glass. The “Outdoor Room” structure at the newly completed Green Square Community Creative Precinct in Sydney was a good example of this.

Stutchbury Architects conceived of what might be described as an audacious proposal to create linear skylights which double as the gutter system servicing a roof area of 550 sq.m. This is no ordinary roof. It is created by 7 undulating curved copper clad barrel vaults which are joined by 6 curved gutters forming a reverse curve, sitting neatly between each barrel to a total of 91 linear metres. The question was asked... can this curved gutter be glass?

Glass was the preferred material to achieve the functionality and aesthetics the architects were looking for.

The challenge for Bent and Curved Glass was to achieve a 180 degrees bend with flat tangent legs extending up to the roof flashing line. The glass was to be manufactured within tight dimensional tolerances to ensure the watertightness was maintained while achieving maximum light penetration to the area below. The gutter was required to be trafficable for cleaning purposes and the end to end joints needed to remain flush to achieve the required water flow.

There were many points of technical difficulty to be accommodated in the manufacturing process. Each panel was hand cut along its length to a raking profile to accommodate the fall required for the rainwater to make its way to the



outlet formed by a 150mm diameter hole in the end panel. The end panel was also hand cut around the curve to the 45 degree spout profile which mirrored the played end profile of the roof barrels.

A prototype stage was undertaken to test if the required dimensional accuracy and aesthetic characteristics could be achieved.

The success of the prototype led forward to the completion of what is a unique glass project of the type that may never be repeated.

The success of the project has been recognised by being awarded “Best Use of Glass in a Commercial Project valued at over \$50,000”, at the State and National Glass and Glazing Association Awards 2018. Also receiving 3 major awards at the recent Institute of Architects 2018, NSW Awards including the prestigious “NSW Architecture Medallion”.

The experienced BCG staff work closely with architects, designers, builders & glazing contractors, at all stages of the building process, to create viable, cost effective and beautiful curved glass solutions.

BCG can contribute at the design, specification, tender and construction stages to ensure the successful integration of curved glass into any sized project.

Let the unique qualities of curved glass contribute to the success of your next project.





Structural Laminated Glass

One of the more recent developments in glass manufacture is the use of Toughened Structural Laminated Glass to facilitate fully frameless balustrade systems without the need for a top rail or handrail.

This engineered glass solution incorporating a structural interlayer allows a seamless, virtually invisible balustrade without compromising safety, function or performance. Views are uninterrupted and the sense of space is enhanced.



balustrade:

15.04mm clear toughened structural laminated curved glass



Stair balustrade:

15.04mm low iron toughened structural laminated curved glass

Antislip Glass Flooring

Bent and Curved Glass Pty Ltd manufacture toughened structural laminated glass stair treads and landings. Function is enhanced with the inclusion of an anti-slip frosted frit pattern applied to the top surface of the glass.

Glass stair tread thickness is dependant on the application and the engineering requirements. Common glass thickness is 37.52mm to 52.52mm, comprising of 3 layers of toughened flat glass with clear PVB interlayers.



Stair treads:

39.04mm clear toughened structural laminated flat glass with SGP structural interlayer antislip frost frit pattern to top surface



Stair treads:

39.04mm clear toughened structural laminated flat glass with SGP interlayer antislip frit pattern to top surface



Front entry porch:

37.52mm flat toughened glass with clear PVB interlayers. Antislip frost seraphic frit to top surface.

guidelines

	Toughened & Toughened Laminated	Annealed & Annealed Laminated
Max. Glass Height	< 1000 radius 2500 > 1000 radius 3300	3800 (2400)
Max. Glass Girth	< 1000 radius 1500 > 1000 radius 2500	2400 (3800)
Max. Angle of bending	< 1000 radius 90° > 1000 any angle up to max. 680mm depth of curve	
Min. Radius	Glass Height	
	400 to 2500mm h	2500 to 3300 h
5-6mm	420	1000
8mm	500	1200
10mm	620	1200
12mm	890	1500
15mm	1650	1500 *
	*Minimum radius will depend upon glass dimensions	
Tangent bending & composite radius bending	to max. 2500mm height to max. 1500mm girth	No specific restrictions other than above



Australian Manufactured

Fully Certified and compliant to relevant Australian Standards

tolerances

Overall measurement	+/-2mm over 1m
Twisting	+/-3mm over 1m
Edge flatness	+/-2mm over 1m
Deviation of curve	+/-2mm
Glass thickness	+/-0.7mm
Edge alignment	+/-2mm



As always we would remind you that there are many variables which will influence potential outcomes for individual projects. Sometimes this allows achieving better than indicated on certain parameters. We recommend consulting the experienced staff at BCG to discuss the specific requirements of each project in order to determine the best glass options available.

curved glass

toughened | toughened laminated
annealed | annealed laminated
double glazed

applications

windows | doors | balustrades
pool fences | facade systems
floor panels | roof panels
shower screens | splashbacks
stair treads | pool windows
display cabinets | shopfronts
partitions

specialty glass

PVB & EVA interlayers | graphic interlayers
structural interlayers | thermal interlayers
acoustic interlayers | coloured interlayers



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