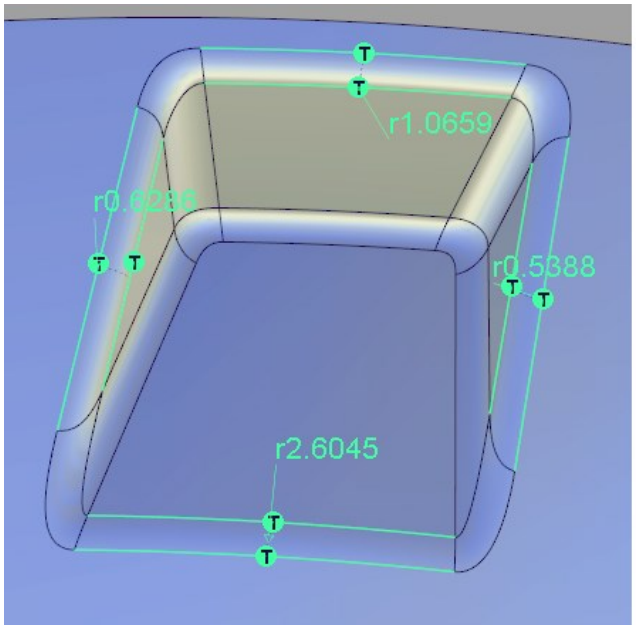
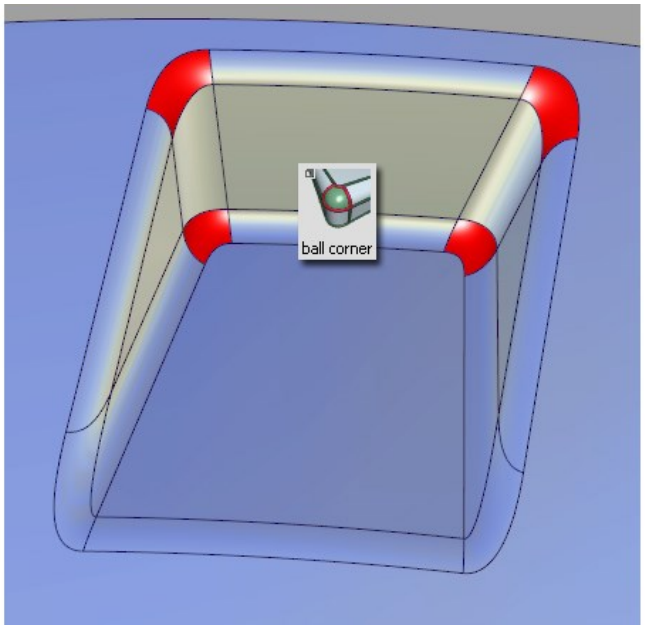
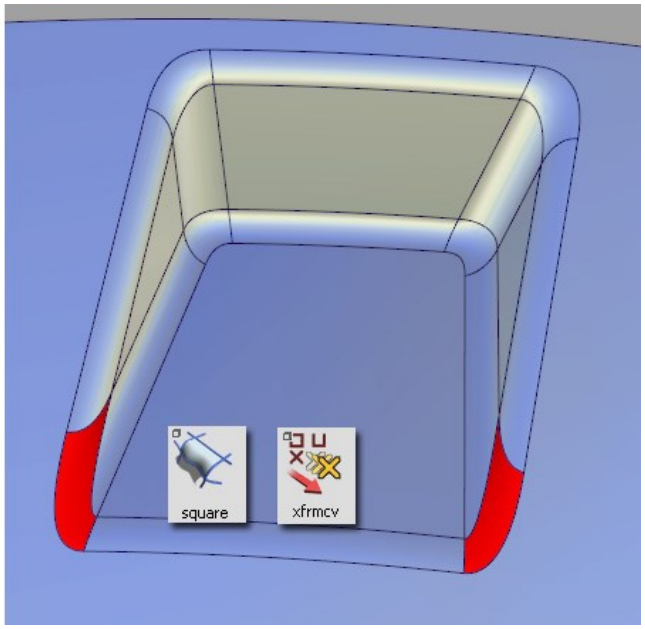
A4.16 : Ball Corner Tool & Acute Angles

This tutorial looks at a small feature with fillet radii of 0.5mm – 2.6mm. Barry discusses how different studios deal with these small fillets, and in this case he builds to G1 Tangent continuity. The Round tool does a quick job, but isn't accurate enough for production work, so the main fillets are rebuilt using the Surface Fillet tool, and then the first 4 corner blends are built using the Ball Corner tool, and the remaining 'acute angle' corners are built with Square and manual CV adjustment.

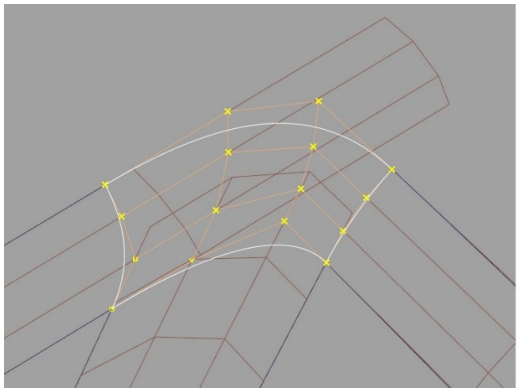


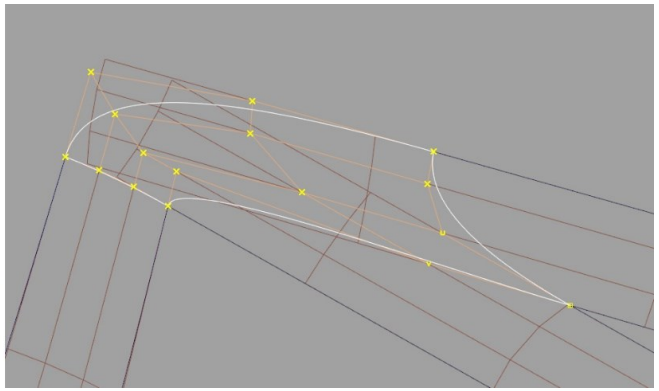




The key to success on all the corners is to align the CVs of the blend surface with the Hulls of the main fillet surfaces.

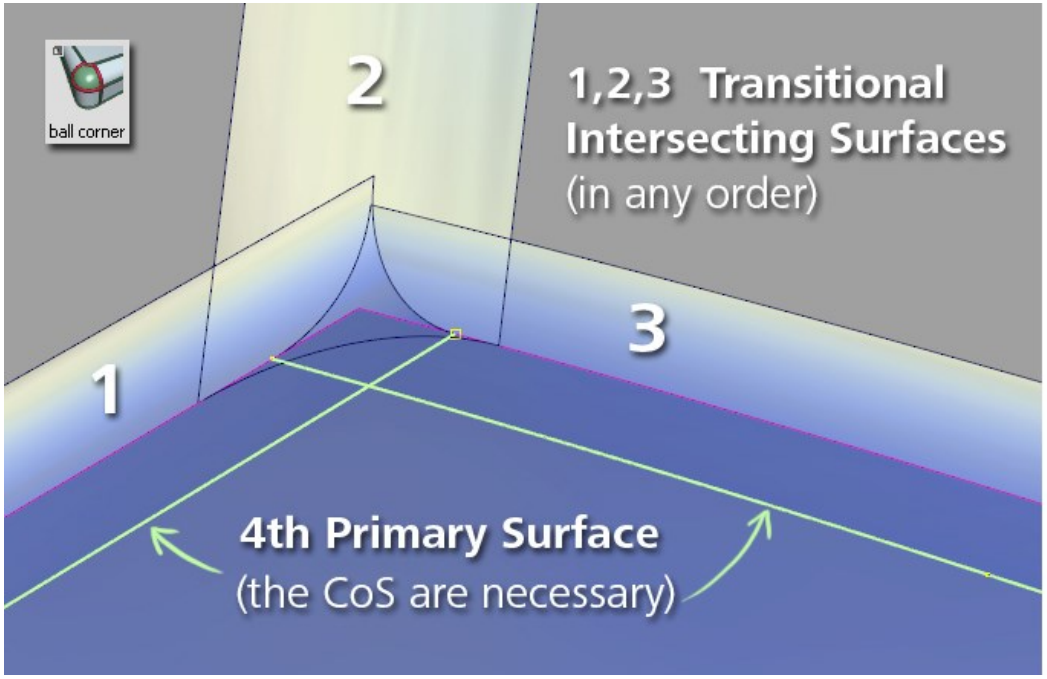
In this case, because we are creating only G1 tangent continuity, then the first two CVs on the blend surface are aligned with the fillet hulls.

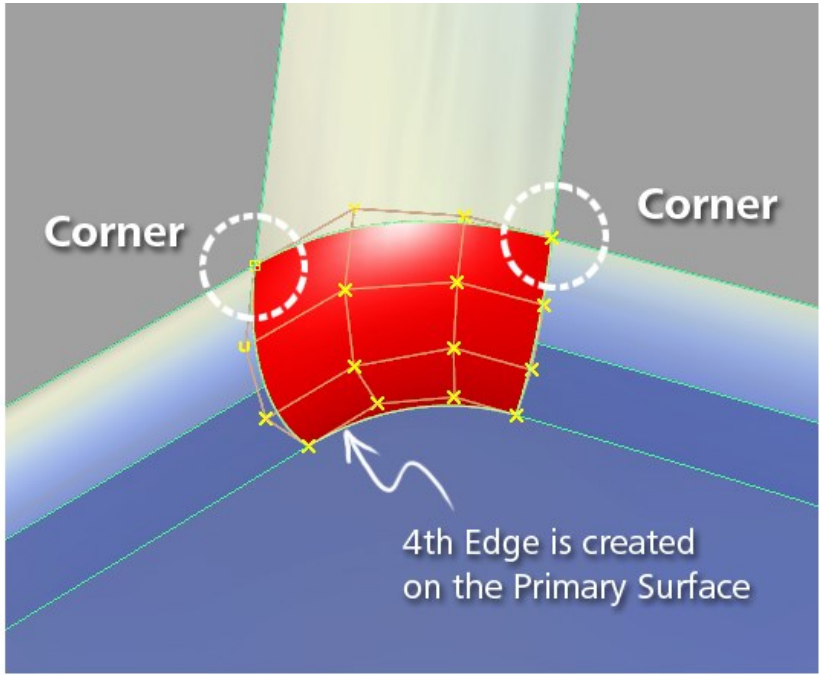




METHOD : Ball Corner Surface Tool

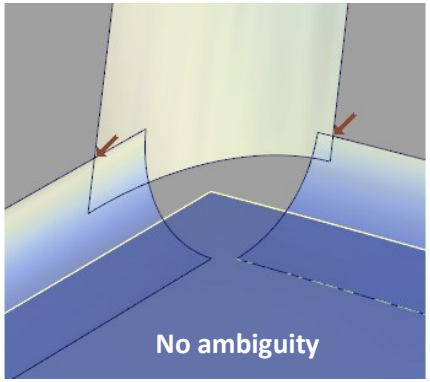
The first part of this tutorial uses the Ball Corner surface tool. If you have not used it before, it is useful to understand the terminology used and what the tool is expecting as inputs. Firstly the three fillets coming into the corner are selected, and then the surface where the fourth edge needs to be created:

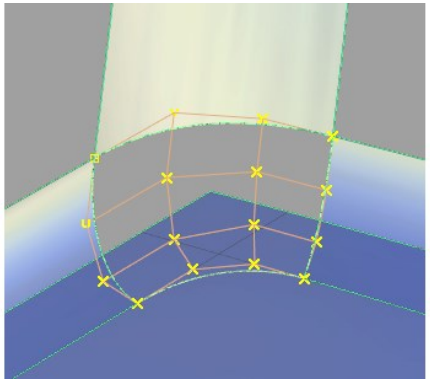


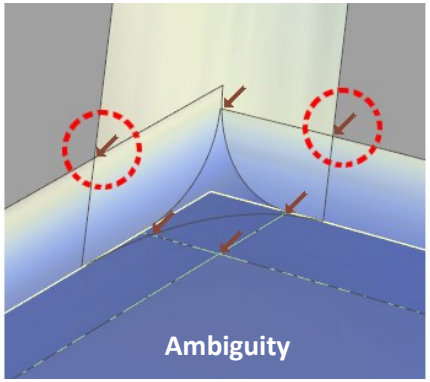


The resulting corners will be found automatically if there is no ambiguity:

If the three fillets don't overlap, so that the tool can identify the 'corners' without ambiguity, the ball corner surface is built automatically



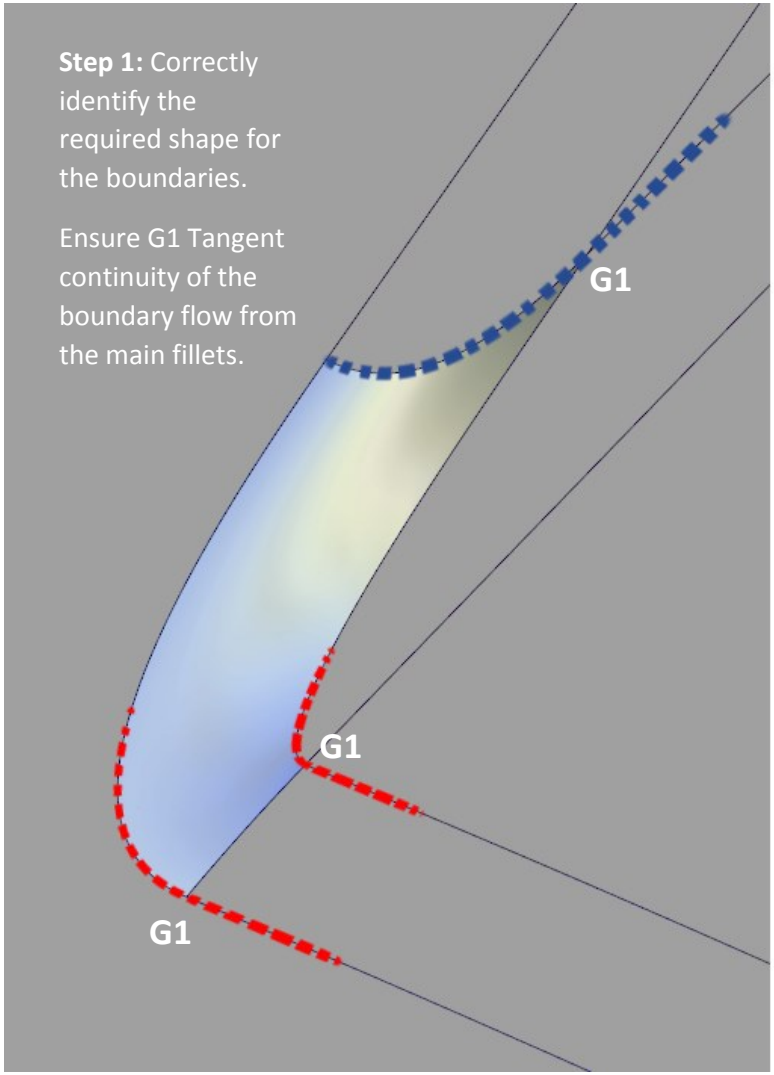


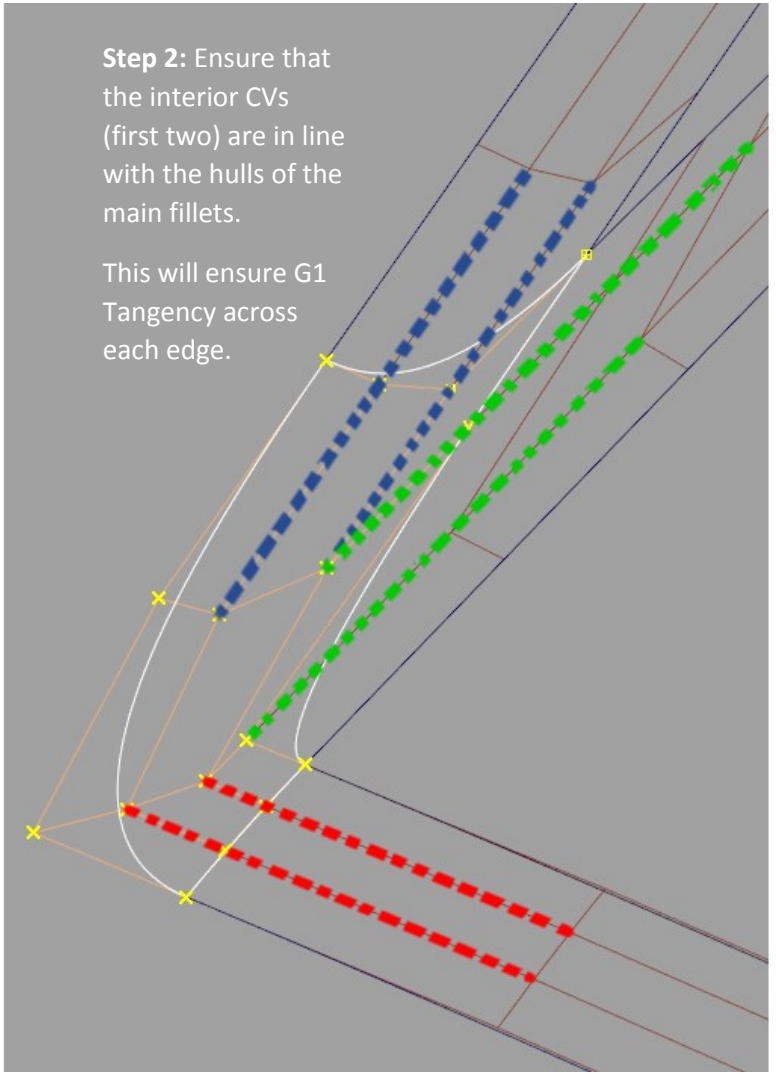


If there is overlap, then you will be asked to click onto the two red arrows that should become the corners.

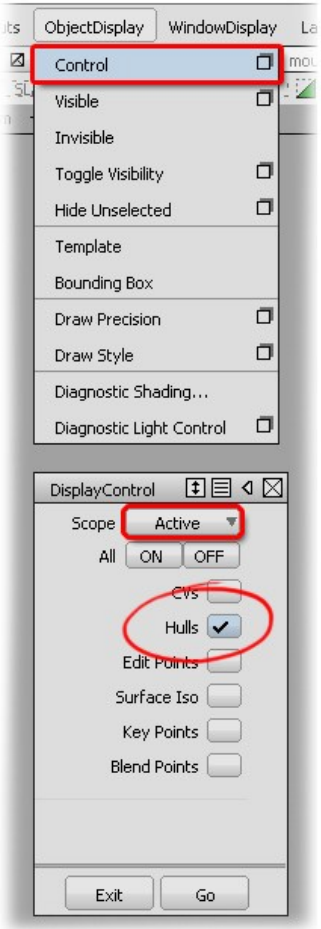
METHOD : Acute Angles

The fifth corner to be created has very acute angles, and the ball Corner tool fails to build a successful surface. In this case, the Square tool is used, combined with manual adjustments of CV positions to achieve continuity.





To display hulls only, without CVs, use Object Display > Control:



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