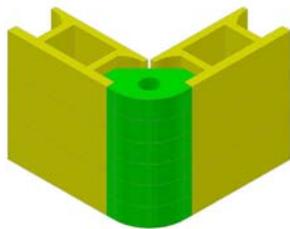


## StoneStrong Curved Rock Face Block Project

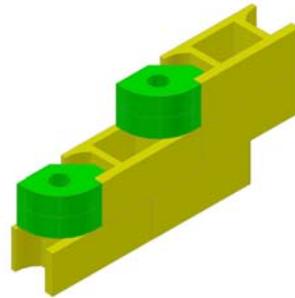
Local Auckland company StoneStrong NZ recently approached Jackson to investigate the possibility of producing a flexible urethane formliner system to create a curved version of their existing flat retaining wall blocks. The StoneStrong system is a precast retaining wall solution targeted at roadway, commercial and residential markets. The bold 'Chiselled Granite' pattern was originally hand chiselled from solid granite by stonework artisans in the USA to provide a number of flat rock face look configurations. However a recent project called for the use of curved blocks to provide a more visually appealing way of turning corners and capping ends of StoneStrong walls. With costs to have granite chiselled in the US and shipped to NZ prohibitive and no access to this particular granite variety locally StoneStrong turned to Jackson to come up with a solution.



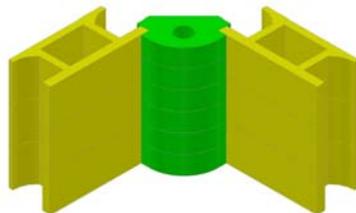
### Original flat-face 'Chiseled Granite' block



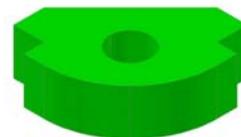
90° Corner Block  
External Corner



90° Row End Option



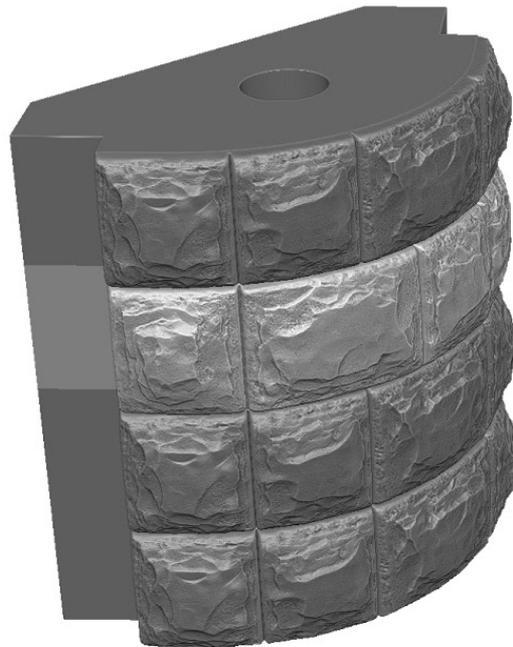
90° Corner Block  
Internal Corner



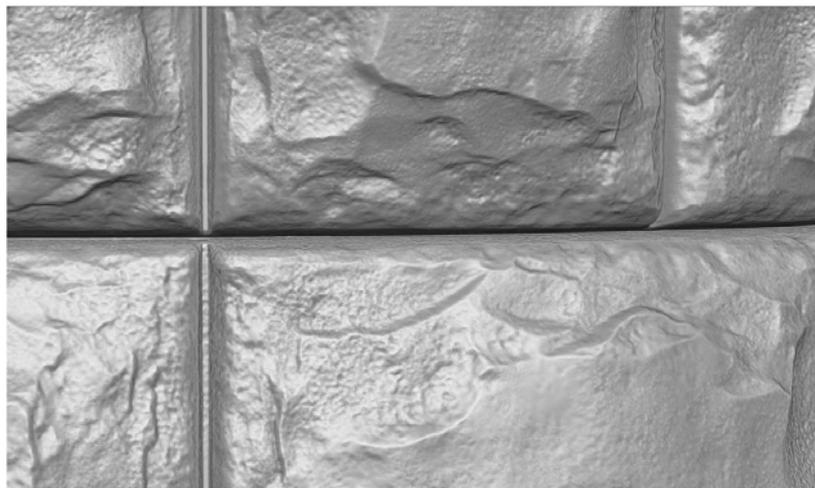
90° Block Perspective View

### Desired Block Layout

An ingenious plan was hatched to take a high-tech approach to solve this problem. An existing flat-face block was digitally captured in 3D using a high end laser scanner. All of the intricate textures of the chiselled granite were captured with this process. The computer model of the flat-face block was then manipulated using 3D CAD (computer aided design) software to be projected onto a curved path. Any distortion from this process was touched up manually, once again in the virtual realm. The result is a virtual 3D model of a curved block with a unique shape that possesses all of the natural texture and intricacies of the original flat-face block.



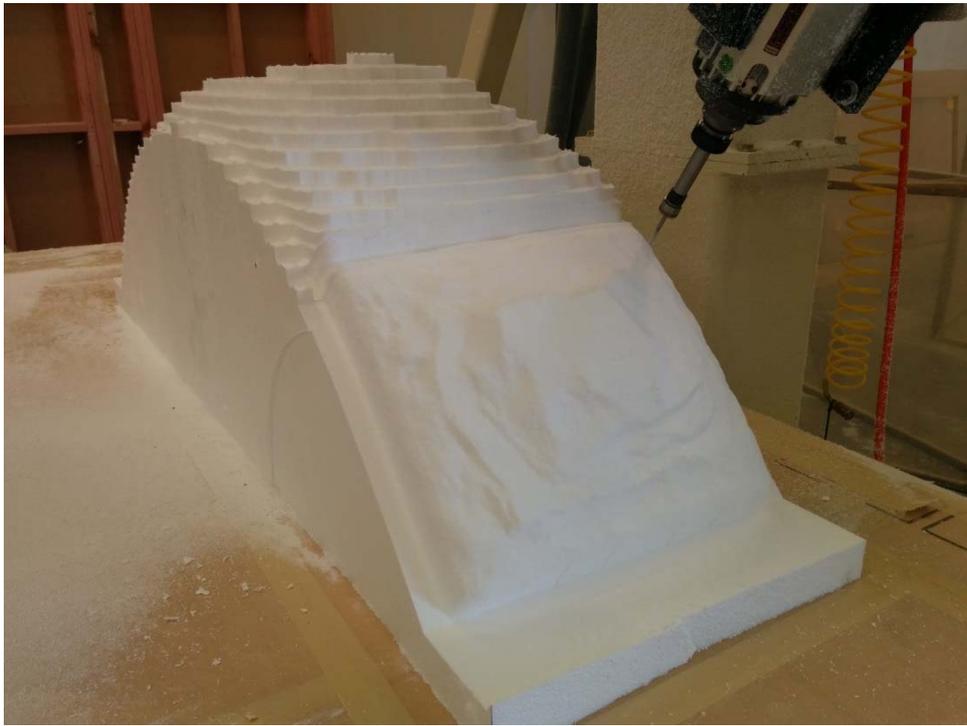
**3D CAD model of the new curved block**



**Close up showing fine detail**

The next step in the process was to translate the virtual 3D CAD model into the real world. This was carried out using Jacksons extensive 5-axis CNC capability. First a prototype was machined from polystyrene to check the overall shape and appearance of the block. After this was proven the

polystyrene was swapped for a porosity free tooling board material called CaroC. Created by Jackson this material is designed to machine beautifully and take on all of the intricate detail of the 3D model.



**Polystyrene prototype**



**CaroC part way through being machined**

With the CaroC pattern/master tool off the machine it was time to pour the flexible urethane material. The CaroC pattern was boxed up using purpose built curved formwork and finally the urethane was poured.



**CaroC pattern boxed up and ready for urethane**



**Completed urethane formliner ready for delivery**

The completed urethane form liners were shipped to site and installed in specially constructed steel moulds. The resulting blocks look completely at home when installed on site next to the original flat-face blocks!



**Curved blocks installed**