Scissors Paper Stone

Blog 12:

The Stones of St John's
A geological assessment

The geologist Scott Engering gave a fascinating talk as part of the Scissors Paper Stone project setting out what we know about the geology of the stones used to make St John's. Here is a summary of it.

The City of Sheffield is not best known for its historic architecture but, when exploring the Porter Valley, I have seen St. John's church from many viewpoints and I think that it is one Sheffield's most distinctive landmarks, particularly with its very tall spire.

As a geologist with expertise in building stones, looking at it closely for the first time, I was very surprised to discover that the dressings to the exterior and the stone for the interior are made of Ancaster limestone from Lincolnshire – which has a very good reputation as a building stone – but the walling of the exterior is built with an inferior quality sandstone.

When the original church was built in 1879 by E. M. Gibbs and then rebuilt in 1888, high quality medium grained sandstones from Derbyshire and West Yorkshire had been widely used in very many of Sheffield's prestigious buildings.

Unlike West Yorkshire, which still produces top quality sandstone that is widely exported to the rest of the UK, Sheffield has only quarried sandstone for local use; however, the fabric of the many buildings that are contemporaneous with St. John's church are generally still in very good condition.

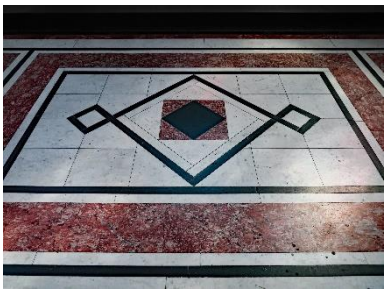
According to newspaper cuttings, the sandstone is from Oughtibridge, where most of the quarries have been sited on the Loxley Edge Rock, a sandstone formation that tends to be very coarse grained in this part of Sheffield. At the time when the church was first built, the Haggs Stones quarry was by far the largest quarry working this formation and samples previously collected from the quarry are a reasonable match, but this is far from conclusive.

The mixture of limestone and sandstone has been considered to be the cause of the advanced state of decay of the sandstone masonry in the spire, which is usually associated with very high levels of atmospheric pollution. In industrial areas, acid rain reacts with limestone to form calcium sulphate, a highly soluble salt that dissolves, runs down the masonry and recrystallises within the pores of the sandstone.

For the interior of the church, which is in the Early English Gothic style and has the dimensions and features of a small cathedral, Ancaster limestone has been used throughout and, looking closely, a pink tinge to the stone is often seen. The exquisite carved stonework is by the eminent architectural sculptor Frank Tory, who

had already demonstrated that he was very capable of producing very intricate carving in gritstone, as seen at the old gates to Sheffield Cathedral and the adjoining Parade Chambers.





Various decorative stones have been used for flooring in the chancel, choir and south chapel. The white marble is from Carrara in Italy, used together with what looks like Cork Red Marble, an iron stained Carboniferous limestone from Co. Cork in the Republic of Ireland. During the reordering of 1991, the chancel was extended and a different red marble was used for this and for restoration of the south chapel floor.

In many later Victorian churches, polished black Carboniferous limestone was widely used, along with Carrara marble, for chequerboard pattern flooring, with Co. Galway and Co. Kilkenny in the Republic of Ireland and Belgium being major suppliers. These are not easy to distinguish, but one of these has been used as edging and inlays in the chancel floor.

The reredos was also carved by Frank Tory and is made with English alabaster and Caen stone from Normandy in France, which is rarely used in the north of England and was first used after the Norman Conquest in 1066 – with Canterbury Cathedral and the White Tower at the Tower of London being notable examples of its use.

For the columns to the reredos, red marble has also been used along with a green to grey marble, possibly a variety of Connemara Marble from Co. Galway, which was often used in conjunction with Cork Red Marble and Kilkenny limestone by Victorian architects.

The pulpit is made of Caen stone and Ancaster limestone, with columns of red marble similar to that used for the chancel and a polished black limestone, which contain fossils like those found in the Kilkenny limestone, has been used for the moulded band, plinth and steps.

Finally, the font in the baptistery is also made of Caen stone, with columns made from green and reddened varieties of the metamorphic rock serpentinite, which look like those that have long been quarried in the area around Genoa in Italy.

It is fascinating to see how many different areas of the country, and indeed of Europe, have contributed to the beauty of St John's.

Scott Engering
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