

THE ART OF THE STONEMASON
Talk by Hugh Varah November 1993

Mr Varah based his talk on the types of stone available for use by stonemasons, relating these wherever possible to Southwell, and passing from these to describe the art of the stonemason in using these types of stone at different periods.

A Building Stone

Mostly sedimentary, i.e. laid down by water or wind in layers (strata).

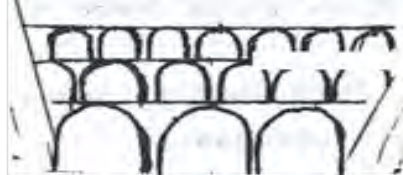
- 1 Limestones - the most picturesque.
 - a) oolitic : 140m. years old, found in a belt from the Humber to Dorset.
 - b) magnesian
 - c) carboniferous
(there is also Devonian , but it is too hard to use for building).
- 2 Sandstone - largely used in the Minster; many kinds are suitable.
 - a) Sarsen stones the youngest - laid down by wind erosion and gradually solidified by gravity and pressure. Name means "strangers" - slabs are found in Wiltshire on different type of soil and were used for Stonehenge.
 - b) Greensand - cretaceous period.
 - c) New Red Sandstone : used for parts of the Minster and other Southwell buildings (also Liverpool Cathedral), but doesn't wear well.
 - d) Permian - used a great deal in the Minster; wears better, but doesn't photograph well – doesn't reflect much light .
 - e) Carboniferous
 - f) Old Red Sandstone - Devonian. Too hard for building.
- 3 Granite - an igneous rock, i.e. molten rock cooled under pressure.
Contains felspar, quartz and mica; an inert substance. Used by the Romans, e.g. viaduct at Akantara in East Portugal, completed 105 A .D. and still perfect though built without mortar. But the art of working granite was lost for centuries. Roman pavement in the South Transept - held together by a limestone matrix.
- 4 Slate - a metamorphic rock, i.e .changed and reformed by heat and moisture.
The term 'slate' is often used inaccurately for other fissile material if used for roofing.
- 5 Marble - also metamorphic, formed from limestone and almost non-existent in England.
Pure marble is calcite and is white - veining caused by impurities, mainly ferrous, therefore red. Medieval Minster font (now lost) was made of Tournai marble, which is blackish, with blue and sepia bits. As with slate, the term is used incorrectly of some limestones which can be polished -e.g. shafts in Chapter House passage, dark with fossils visible - quarried in Isle of Purbeck, Dorset and also in Derbyshire.
- 6 Alabaster - not really a building stone, but solid lumps found in gypsum.
Can be used for carvings, e.g. Sandys memorial in the North Transept.
- 7 Flint – lumps of pure silica found in chalk.
Used in East Anglia, where no other building stone is available
- 8 Chert – also silica, found in limestone
- 9 Mudstone - like slate, but not fully metamorphosed, so no lamination.
- 10 Conglomerates - "Nature's concrete", held together by a matrix, usually iron oxide.

The coloration of stone often comes from iron carried by “quarry sap”, i.e. moisture rising through the strata from underlying iron ores.

B Methods used

Roman: Uniform style of building throughout Roman Empire. Brilliant civil engineers built stone roads, viaducts and aqueducts. As road material is laid with largest and heaviest bits in the bottom layer, so with via and aqueducts.

Romanesque masons tried to copy this : e.g. nave arcading in the Minster, second to none in Mr Varah’s opinion, not even Durham.



Domestic - included the fireplace over the arch, e.g. Thornton Curtis in North Lincs, where church originally belonged to Templars, and the master’s house is now incorporated into the chancel

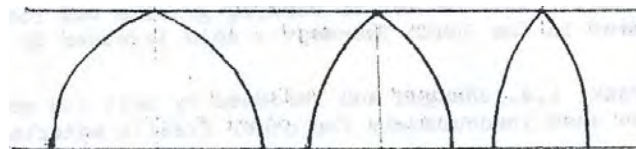


The West door of the Minster was originally gabled – the gable destroyed when the great 15th century West window was put in.

Problems, other Norman builders could not surmount, were overcome at Southwell, e.g. vaulting with intersecting webs – see the nave aisles. This was because round arch could be dragged (depressed) only slightly – difficult or impossible to vault a rectangle not a square.



Gothic - on 15th April 1185 an earthquake largely destroyed Lincoln Cathedral. Bishop Hugh of Avalon introduced the Gothic arch in his rebuilding. All the arch tops could be level whatever the span.



They also used new raising techniques, e.g. the LEWIS, a wedge shaped block and tackle, inserted into a stone - but weight was still a problem, 14 cuft. Of sandstone weighs 1 ton.