

THE ROSE GARDEN

The memorial to the American Airforce and John Appleby is in “red” Swedish granite, an igneous rock containing the minerals quartz (clear), feldspar (pink), and mica (dark). The large size of the crystals demonstrates that the rock cooled very slowly.

The granite memorial in the Rose Garden.



It is easy to spot the different minerals in the granite – and even easier if it is wet!

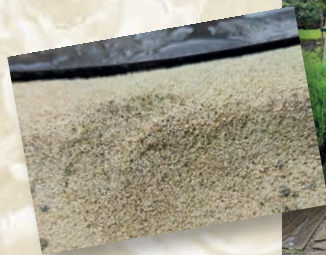


The sundial in classical style is in yellow Ketton Limestone (note the ooids!).

The sundial in the Rose Garden.



Look for the sand-sized spherical grains (ooids) in the sundial limestone pillar.



ST MARY'S CHURCH

Built by the Abbey in the early fifteenth century using Barnack and, later, Clipsham. Mid-fifteenth century repairs to the north aisle parapet and the Notyngnam Porch used magnesian limestone from Huddleston near Tadcaster in Yorkshire. It is rich in the mineral dolomite, a form of calcium magnesium carbonate.

The Notyngnam Porch



Inside, the arcades are of Clipsham limestone. Many of the memorials in the church are of white “marble”, a term used for both metamorphosed limestone and hard sedimentary limestones which will take a polish, with Belgian black slate surrounds. The Suffolk Regiment memorial just outside the Regimental chapel has a base of Devonshire marble, showing coral fragments and algal masses, of Devonian age, with Derbyshire alabaster above. In the regimental chapel, a memorial to Frank Pretty (of Sutton Hoo) is in Purbeck marble from Dorset, rich in fossilised gastropods of late Jurassic-early Cretaceous age.

The flooring is a mixture of Purbeck, Yorkstone, and massive Belgian black slate ledger slabs. The floor was re-laid in 1742.



The Suffolk Regiment Memorial



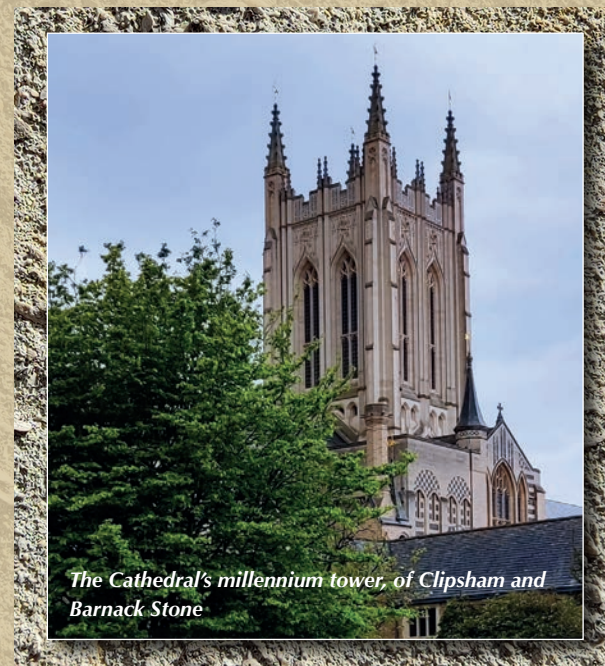
Fossil corals and algal masses in the limestone base of the memorial.

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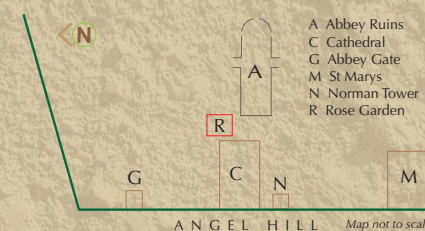
GOD'S SQUARE ROCKS

BURY ST EDMUNDS



The Cathedral's millennium tower, of Clipsham and Barnack Stone

Sir John Betjeman used the title “God’s Square” to describe the area between St Mary’s church, the former Abbey west front and the Cathedral church of St James, and Angel Hill. Most of the ecclesiastical buildings are made of limestone, a sedimentary rock deposited under warm seas and commonly in the form of ooids, tiny spherical grains of concentric calcium carbonate. They are a pale yellowish colour due to saturation by water containing ferric oxide (rust). They weather to a pale grey colour over time. Most of them are Jurassic in age, laid down about 150 million years ago.



THE ABBEY GATE

Built in limestone from Barnack near Stamford, where the Abbey owned the right to a quarry. This is a shelly, coarse grained durable stone. The townspeople often vented their anger on the Abbot by damaging the gateway, and natural erosion has also made its mark. The carved capitals are in a fine-grained limestone thought to be from Ancaster or Weldon.



*Top: The Abbey gate.
Below: Broken fossil shells give the rough texture of Barnack limestone in the Abbey gate.*



THE ABBEY RUINS

The walls of the Abbey had a core of flint and brick rubble, with a mortar containing tile and brick fragments, and a facing of Barnack Stone. Most of the facings were sold after the dissolution of the Abbey in 1539 and were used in other buildings including the present Cathedral.



Rubble walls of the Abbey ruins.

THE PRECINCT WALL

The earliest parts of the wall date from the 12th century, discernible by the coursed cobble flintwork. Flint is a pure silica formed from the skeletons of marine sponges found in Chalk strata. It comes from several sources. Thin slabs of dark black flint with a white skin or "cortex", often discarded as a by-product of mining chalk for lime production. Brown flint cobbles were dug out of the fields and came from ancient river gravels.



Looking north at the precinct wall from outside the Cathedral cloisters.



The Precinct Wall – flint, some quartzite and more.

THE CATHEDRAL

Built between 1503 and 1560. Begun by John Wastell who also completed the vaulted roof of Kings College Cambridge. Mainly constructed with oolitic "Lincolnshire" Limestones. Wastell used Clipsham for the west front and side aisles, a fine-grained limestone with distinctive fossil remains of shells. It displays distinctive bands when it weathers, like tiger skin. Another limestone, Ancaster from Rutland, was used in the side aisles to repair the scars left behind when adjacent houses were demolished in the nineteenth century.

Bedding well seen in carved Clipsham Stone with fragments of fossil shells. Two views at right-angles of the same block, south-west end of the Cathedral..



Clunch is a type of hard grey Chalk, very soft when quarried and thus easy to carve, subsequently hardening sufficiently to make it durable. Used for window masonry in the churches in God's Square. The local source was at Burwell, about 15 miles north-west of Bury, and transported via the River Lark. Stonemasons were fond of treating it with linseed oil to improve its weathering ability, turning it a dull brown colour.

Externally, the Cathedral architect in the 1950s, Stephen Dykes-Bower, used stone from Doultling in Somerset for the limestone dressings to the chancel, with knapped black flint from Brandon. The millennium tower was built in Clipsham and Barnack, the only modern use of the stone since the main quarry closed in the late fifteenth century.



The north transept of the Cathedral, of creamy-brown Doultling Stone. A good view of it may be seen from the window at the top of the treasury stairs (inside the Cathedral). Also shown are knapped dark flints set flush into paler limestone panels.

In the cloister, Clipsham is used for the walling, with Barnack and Purbeck pilaster shafts reused from the former Abbey on the inner walls and Ancaster "weatherbed" used for paving. The ramps leading down from the entrance are in Horton Yorkstone to give grip and contrast. Weldon Limestone, another Lincolnshire series limestone from near Corby, was used for dressings in the Cathedral centre at the east end. Monuments on the cloister walls are a mixture of black Belgian slate with Carrara Marble, and Nabresina, a pale brown fine grained Italian limestone. Suffolk County Council plaque dated 2009 is in Ancaster "weatherbed".

In the Cathedral itself, Clipsham arcades are limewashed.



The Cathedral south wall limestones – Clipsham, clunch and more.