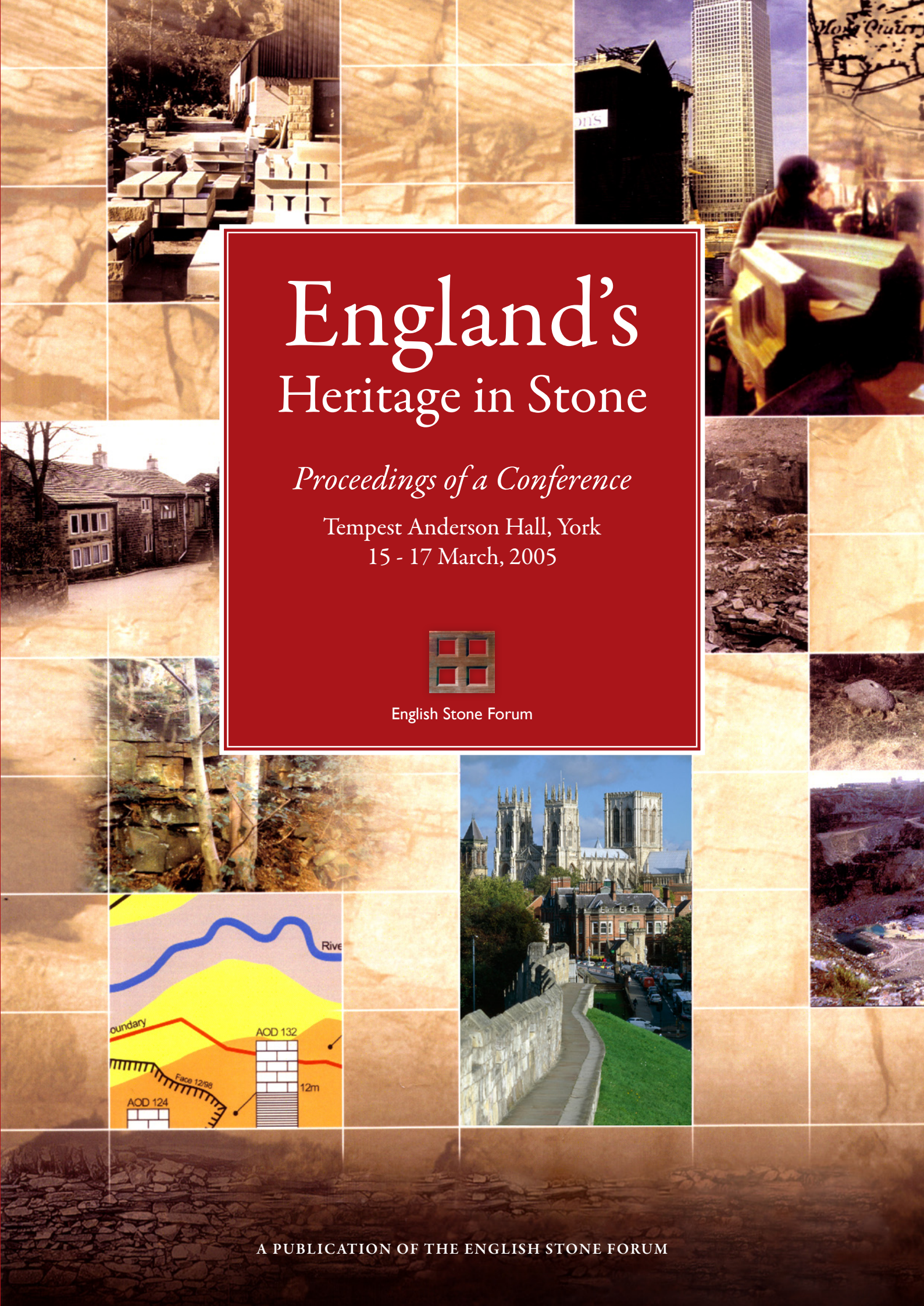

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Vernacular stone buildings in Northamptonshire

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Across the county of Northamptonshire villages and market towns display a rich variety of local building materials, closely reflecting the range of Lower and Middle Jurassic rocks. Most villages had a stone-pit, providing roughly dressed rubblestone masonry. There were also quarries of better freestone for quoins, fine ashlar, or carved mouldings; and locally (notably around Collyweston), fissile slatestone suitable for roofing. Some 12 different types of building stone are recognised, including ironstones, sandstones, and many limestones. The gentle south-easterly dip accounts for the distribution of successive outcrops of the main building stones, from the Marlstone Rock Formation in the west to the Blisworth Limestone Formation in the east, the intervening Northampton Sand Formation running through the centre of the county; the Lincolnshire Limestone occurs only in the north and dies out south of Kettering. The paucity of existing quarries creates a dilemma for the restoration of existing buildings. It is important to match rock-types for colour, general composition, and properties such as cementation and porosity.

Northamptonshire is a county of market towns and 'unforgettable villages' (Pevsner 1973). Although most are surrounded by twentieth century development in brick imported from outside the county, fortunately they retain their central clusters of older buildings – parish churches, manor houses, farmhouses and cottages, which are almost all built of local stone. Far from being uniform within the county, the type of stone varies conspicuously, often from one village to the next, depending on the local outcrops of Jurassic rocks (Sutherland 2003).

Rubblestone walling typical of cottages and old church masonry generally matches the immediate geology and came from a local stone-pit. Dressed stone on the other hand was obtained from the nearest quarry working beds of suitable freestone. This more uniform material, able to be cut freely in any direction, was chosen for quoins, door and window cases, smooth ashlar masonry and carved mouldings (Fig.1). Fine stonework is not necessarily as local as rubblestone, but there were many quarries of freestone in the county (Morton 1712), and until the late 19th century little stone came from elsewhere. Even then, stone from traditional sources such as Duston near Northampton was preferred for Victorian buildings (Sharp 1870; Thompson 1928).

A geological map of the county shows a landscape partly covered by glacial boulder clay which is gradually being eroded by rivers (such as the Nene and its tributaries), revealing a varied succession of Middle and Lower Jurassic rocks, from the Oxford Clay down to the Lias. They include sedimentary rocks of many kinds: ironstones, sandstones and limestones (nearly all providing building stone) interbedded with clays (which were sources of brick). The distribution of the different building stones is determined principally by the south-easterly dip of the strata, the oldest, Marlstone Rock, occurring in the west from Kings Sutton to Daventry and Watford (it thins away northwards). It is followed to the east by outcrops of the younger Northampton Sand Formation in the centre of the county (also occurring as outliers capping hills such as Eydon, in the west). The next building stone stratigraphically is the Lincolnshire Limestone Formation, yielding local stone and some of the best freestones (Weldon Stone for instance), but it is found

Fig. 1. *The Talbot Inn, Oundle (1626): ashlar and mouldings of Weldon Stone, from the Upper Lincolnshire Limestone near Corby.*

only in the north, reaching just as far south as Maidwell and almost to Kettering. The Rutland Formation contains a very local white sandstone (at Kingsthorpe), and a thin limestone which thickens southwards and was quarried as Helmdon Stone. The Blisworth Limestone is the chief local building stone of the eastern side of the county (and partly hidden by boulder clay) from Brackley in the south to beyond Oundle in the north; it was a source of freestone at Cosgrove, Stanwick and Oundle. The Table lists many of the types of stone obtained in Northamptonshire from these geological formations.

The villages are standing examples of their local stone. The Marlstone Rock is seen as both rubblestone and dressed freestone; though no longer quarried in the county it is still obtained around Hornton in Oxfordshire. It is a very iron-rich limestone, or ironstone (for example at Byfield), originally greyish green but weathering to rich brown, and often containing fossils. The Northampton Sand is a younger formation yielding brown building stones, but which vary greatly across the county. A dark, limonitic (oxidised) ironstone was quarried at Finedon for example. True ironstone is usually oolitic, the small spherical grains being visible with a handlens. Further north near Rothwell a less pure ironstone, from below the oolitic rock, was used for building. Some of this rock is soft-weathering, but repairs (for example to the church tower) using hard, less porous limestone probably exacerbate the problem by deflecting rain onto the softer stone below.

West of Wellingborough the Northampton Sand is more variable, and sandstone - still rich in the brown iron oxide, limonite – was the chief building stone of Northampton; the Norman round church and its fourteenth century tower were built of it, but modern repairs carried out in Cotswold limestone unfortunately will never match the dark sandstone. Historic quarries at New Duston and Harlestone supplied several types of ferruginous sandstone freestone; Harlestone is the last sandstone quarry still working.
On the north side of Northampton the variable Northampton Sand also contains paler, golden limestone once known as 'Pendle'. A sandy limestone, often containing remains of crinoids ('sea lilies'), it was one of the rocks quarried at Kingsthorpe, and is seen in villages around Pitsford; at Duston it was sufficiently fissile to be mined at one time for 'slate', and at Mears Ashby it yielded a good freestone. It is still obtainable as rubblestone from a quarry at Pitsford; for dressed stone this variety of Northampton Sand is reasonably well matched by yellow Guiting Stone.

Fine-grained, often sandy Lower Lincolnshire Limestone is the main local building stone in the north of the county. It is also the source of Collyweston 'Slate', a fissile sandy limestone mined from the base of the deposit in a limited area close to the Welland escarpment. The Collyweston Stone Slaters' Trust is looking at ways to revive the supply of this material for roofing. The Upper Lincolnshire Limestone has furnished excellent freestones from certain localities in Northamptonshire: Weldon Stone (from Weldon near Corby) is the best known, for fine stonework from medieval to twentieth century in the county (Fig. 1), and also in Cambridge, but it is now no longer quarried. The limestone is pale cream or grey, and composed of spherical ooliths with a little shell (and almost no visible cement), easily identified with the aid of a hand lens. It weathers remarkably well, its porous character apparently coping with rain and frost. It has also been used alongside the soft

Fig. 2. *Stoneacres, a cottage in Blisworth, built of Blisworth Limestone and Northampton Sand ironstone (both local), with mullioned windows of Duston-type sandstone.*

GEOLOGICAL FORMATION	BUILDING STONES	ROCK TYPE
Blisworth Limestone	Blisworth, Cosgrove, Oundle, Pury End, Raunds, Stanwick	Limestone, shelly, sparry, or micritic
Rutland: Wellingboro/Taynton Stamford Member	Helmdon, Culworth Kingsthorpe White Sandst	Shelly limestone Sandstone
Lincolnshire Limestone: Upper Lower	King's Cliffe, Stanion, Weldon Collyweston Stone Slate	Oolitic limestone Sandy limestone
Grantham		Sands and clays
Northampton Sand: Duston Member 'Pendle' Ironstone Member	 Duston, Eydon, Harlestone, Northampton, Stowe Boughton, Duston, Kingsthorpe, Mears Ashby,Pitsford Brixworth, Finedon, Wellingborough Desborough, Glen Hill	 Ferruginous sandstone Sandy crinoidal limestone Ironstone, oolitic Calcareous ironstone
Whitby Mudstone	(bricks)	
Marlstone Rock	Badby, Byfield, Staverton	Calcareous ironstone

Table 1. Geology and building stones of Northamptonshire.

Kingsthorpe White Sandstone: for repairs to 18th century Little Houghton House, and for window-cases in Overstone Church (but recent repairs here in hard cemented yellow limestone are wrong in all respects).

The Blisworth Limestone varies in character. Seldom really oolitic, it often includes soft-weathering micritic limestone. Oyster shell is also abundant, and some stone is well cemented by calcite; good ashlar was produced locally around Oundle, some more prestigious buildings embellished with Weldon Stone. Many parts of Northamptonshire have local sources of both Blisworth Limestone and Northampton Sand ironstone, resulting in decorative polychrome building (Fig. 2).

No longer are there quarrymen who knew each bed by name. From dozens of quarries that provided the cherished buildings of past centuries there are now only four; and their business is largely crushed stone!

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