

Malton and Ryedale Stones

The earliest surviving buildings in Malton and its immediate vicinity were constructed of either Hildenley or Malton oolitic limestone. It is unknown to what extent the Romans used Hildenley for building, since no close identification of the limestones of which the gates and domestic houses excavated in the fort or adjoining vicus areas in the 1960s was made. There are numerous remnants of Roman sculpture of Hildenley limestone in Malton Museum as well as in York. All 11th and 12th century churches in Old and New Malton incorporate Hildenley limestone. St Mary's Priory church and St Michael's church were built almost exclusively of Hildenley; St Leonards church today retains only remnant aisle walls of Hildenley and odd ashlar blocks to the lower levels of the 15th century tower, which are otherwise of calcareous sandstone. This latter church was substantially rebuilt in 1907. The upper level of the tower is entirely of carboniferous West Yorkshire grit-stone, in common with other parts of the church rebuilt or refaced in 1907. The interior columns and capitals of St Leonards are of Hildenley. Typically, those medieval buildings in the town that are of Hildenley limestone were built by the church and, specifically, after 1150, by the Gilbertine Priory in Old Malton.

Hildenley limestone is to be found in cottages and houses locally, constructed after the Dissolution of the priory in 1539, using material robbed out from the priory complex or, in several nearby villages, from the buildings associated with priory granges.

Many of the churches of villages around Malton were constructed of or contain significant

elements in Hildenley limestone. Many were considerably rebuilt during the C19, most commonly in Birdsall calcareous sandstone, but either left unmolested or reused considerable quantities of Hildenley limestone from the earlier buildings – churches in Bossall, Amotherby, Barton-le-Street, Appleton-le Street, Hovingham, Crambe, Slingsby, for example.

After the Dissolution, the Hildenley quarries fell into the ownership of the Strickland family and were used extensively upon properties they built or owned. Boynton Hall, the family seat near Bridlington, incorporates windows and a portico of Hildenley limestone designed by Lord Burlington around 1730, as well as Palladian chimney pieces designed by William Kent. York House underwent significant alteration in the early years of the C18 using ashlar and dimensional stone from Hildenley. York House already held walls of Hildenley robbed from the priory; the hunting lodge is built entirely of Hildenley and was built probably during the 16th century, perhaps using stone also robbed from the priory site. It has a complex sequence of undercrofts, some with columns and pilasters, built of Hildenley limestone. The dimensions and tooling patterns of some of the stone of the undercrofts has been interpreted by some as being recycled Roman material, although this possibility, as well as the origin of the earlier building currently encased in 18th century additions, has yet to be fully explored. Stone robbed from Old Malton Priory may itself have been Roman material reused after 1150. Howsham Hall, another former Strickland property, is built of Hildenley limestone also – quarried from both the ground and from Kirkham Abbey nearby. Hildenley Hall was demolished in 1908, but the elaborate portico of this building was relocated to the south side of

the Lodge in Old Maltongate, and is of Hildenley limestone.

All but one of the numerous stone-vaulted spaces investigated so far within the medieval boundary of the town were formed of either Malton oolite or Hildenley limestone. The only vault constructed of calcareous sandstone has been provisionally dated to the 15th century by Building Archaeologists from York University, and this is consistent with the conclusion of my own survey of the buildings in the town that calcareous sandstone seems to have been little used within the town during the earlier medieval period.

The earliest significant use in Malton (Birdsall calcareous sandstone seeming to have been used extensively for church construction further from the town, and from the Malton oolite or Hildenley formations), seems to have been by Ralph, Lord Eure, for the construction of a significant 'Prodigy House', completed by 1608.

Contemporary sources compared the house to Audley End and Theobolds, but no images of its apparent magnificence survive. The house was meticulously dismantled, its stones sold, in 1674, after a celebrated ruling by the High Sheriff of Yorkshire, and this demolition may date significant repairs to St Leonard's church, as well as the first extended use (re-use) of calcareous sandstone throughout the town. The calcareous sandstone window surrounds and quoins to the north elevation of York House may also have been fashioned from stone recycled from the Prodigy House, relocated after Sir William Strickland's acquisition of the property in 1682. The subsequently extended gatehouse of the Eure mansion survives, although only its front elevation escaped a complete (if apparently faithful) refacing in 1878 by the Wentworth

family, using a very different sandstone from West Yorkshire. The stone of the earlier extensions will have been sourced, almost certainly, from the dismantled House to the immediate south. The quarry from which the stone for the original house was sourced survives across the road from the gatehouse.

The Eure's consolidated their ownership of New and Old Malton in 1617. Some of the manor passed to William Strickland upon his marriage to Mary Eure in 1682; the rest was sold to the Wentworth-Watson estate in 1713. The Wentworths in their turn consolidated their ownership of the whole in 1739, purchasing the remaining Strickland holdings locally (Strickland had sold property piecemeal to the Wentworth's from after around 1718). The Fitzwilliam family, which combined with the Wentworths by marriage after 1742, and directly inherited the Estates in 1782, continue to own the majority of the property within the medieval boundary of the Borough of New Malton.

Shortly after acquiring the Strickland properties, which included York House and the Hunting Lodge (acquired in 1713), they converted the latter property into a well-acquainted hotel serving the interest of the local gentry in horse-breeding and racing. The building was raised a storey and the courtyard of the U-shaped earlier building finally fully enclosed by the early C19. The raising was executed in brick and in oolitic limestone - in contrast to the Hildenley limestone of the core structure.

The Wentworth-Fitzwilliam ownership witnessed significant volumes of new building in the town, which peaked by the middle of the C19. Almost exclusively, this new construction was executed in either brick or calcareous sandstone ashlar.

Calcareous sandstone was exported by way of the improved Derwent navigation – for the construction of Stamford Bridge, for example – from the Wentworth's Brows Quarry. By this time, of course, Castle Howard had been constructed of calcareous sandstone, demonstrating not only the beauty of this honey-coloured stone, but also its ready acceptance of detail and carved ornament. The stone was quarried locally to the house and may seem to have proved somewhat more durable than the Malton equivalent. The vulnerability of calcareous sandstone to carbon-based pollutants, however, and the presence of such pollution historically, through coal fires and currently, from vehicle exhausts, may distort this judgement. Castle Howard had clearly established the high status of calcareous sandstone locally, however, and the Wentworth's used it in preference to either Hildenley or Malton oolite. Indeed, remnant limewash to the limestone of York House, as well as to most oolitic limestone buildings owned by the Wentworths suggests that the attempt was made to render all stone buildings in the town of calcareous sandstone appearance. The pigment in the limewashes observed around Malton was copperas, giving an orange hue not dissimilar to the calcareous sandstone. No traces of such limewash (or of any limewash at all, except internally) are to be found upon the sandstone buildings in Malton, although this may reflect the pattern of decay of this stone, which powders slowly away over time as its matrix is degraded by the action of salts and pollutants.

Calcareous sandstone seems to have been the preferred material for repairs during this period also. Randomly distributed calcareous sandstone blocks in the otherwise Hildenley limestone tower of St Michaels church, for example, are

likely to denote Wentworth era repairs, their being patrons of this as well as of St Leonards and St Marys churches.

The geology of the buildings of Malton, therefore, seem to be a fair indicator of specific periods of ownership and construction. Malton was blessed with an abundance of good quality building stones, as well as ready access, to the south bank of the River Derwent, of excellent brick earths. This abundance is reflected in its architecture from all periods and is at the core of its architectural character and significance.

The last stone to be found extensively in Malton during the historic period is North York Moors sandstone. This is a deltaic sandstone from the Jurassic period quarried extensively since at least the Roman period above Whitby. It ranges in colour from pale brown and pink (with purple bands) to dark orange and dark brown. It is a very durable material (although vulnerable to salt and vehicle exhaust pollution) and was especially prized for marine defences and harbour walls. It is likely to have been brought into Malton for paving, copings and stone ridges. No local stones beyond Hildenley could so effectively serve these purposes. This stone would have been carried by sea and river from Whitby, particularly after the improvement of the Derwent navigation after 1702.

In 1847, 27,000 tonnes of sandstone left Whitby harbour. Between 1825 and 1840, 3,860 tonnes of 'flags, stone, etc' were carried up the River Derwent, as recorded by the Stamford Bridge lock keeper (Copperthwaite p65, 1841).

No complete buildings of Aislaby (Whitby) sandstone exist in Malton, but many flags and copings do survive and ashlar blocks crop up across the town, used for repair – in the south

aisle of St Michaels, for example, or as plinth stones – to the otherwise Hildenley limestone ‘Vanbrugh Arch’. Door surrounds and architectural detail in Saville Street, the only thoroughgoing Victorian street in Malton, are also of base-bed Aislaby sandstone.

Another sandstone imported into Malton from the early period was Brandsby Slate – a calcareous sandstone that occurs around the village of the same name, which was particularly suitable for roof slates. York House and the Hunting Lodge were both roofed with stone slates by 1728, and such slates have been found during excavation of the hearths in York House. The stone slates currently seen on York House are more siliceous and are likely from West Yorkshire. A similar stone slate to the Brandsby slate used to be quarried in the Tetbury area of the Cotswolds, from outcrops adjacent to the oolite. Such slates in this area are now imported from India, representing a fair match.

Since the middle of the C19, at least, this essential vernacular has been under assault for two main reasons: the accelerating introduction of stones for repair of quite alien geology, and air-borne pollution.

The arrival of the railway in 1848 saw a trickle of West Yorkshire sandstone of quite different geology and character into the town. Where used for new doorways or buildings, this was not inappropriate, perhaps, but when used for repair, alongside the local calcareous sandstone, its longer term consequences have been less fortunate. Neither the calcareous nor the Jurassic sandstones tend to develop black skins in contact with airborne pollution, retaining a weathered ‘natural’ patina. The Carboniferous, highly siliceous sandstones from the Pennines do

attract such a patina and may be readily identified locally by such blackness.

Increasingly expedient repair methods adopted by the Fitzwilliam Estate during the 20th century led to the frequent and piecemeal use of alien and inappropriate materials (as well as ordinary Portland cement mortars) for repair – Brow’s quarry having closed by the end of the First World War, and the Malton Oolite quarries by the start of the second. The routine limewashing of stone buildings in the town ceased; some buildings, at least, were painted with impermeable modern paints, or rendered with opc mortars.

From the point of view of building conservation today, the unceasing problem of vehicle exhaust pollution in the town and the extensive use of opc mortars after the war and until very recently, has meant that high levels of decay are evident to many of the stone structures in the town.

Whilst largely unrecognised in the past, the exceptional significance of the town as a whole and of many buildings within it is being reflected in the repair policy and philosophy of the Fitzwilliam Estate. The errors of the past are being carefully undone, particularly in regard to mortars and the essential breathability of buildings in their care.

An application to reopen Brow’s Quarry is in process, which would deliver access once more to both calcareous sandstone and a finer-grained oolitic limestone. The only local source of oolitic limestone at present is from Whitewall quarry, where road-stone is produced by blasting and from which building stone has to be hand-picked and is not commercially available.

There is no known currently active source of similar calcareous sandstone in the UK or Europe, and the calcareous sandstone locally has proved especially vulnerable to decay as a direct consequence of vehicle exhaust pollution. Its availability for use in the repair of historic buildings locally is essential to the preservation of the authentic character of Malton, as well as of important monuments and towns locally.

Calcareous sandstones from the cretaceous period are still quarried and sawn in West Sussex. These are inherently softer than the local calcareous sandstones, although their use may be preferable to any sandstones available regionally should current opposition to the re-opening of Brow's Quarry prevail. Their colour and texture is a fair match for the local stone.

There are numerous buildings of calcareous sandstone in Pickering and in countless villages within and on the edges of the Vale of Pickering, as well as numerous churches from the mid- to late medieval period. Extensive replacement works to some of these latter buildings have been carried out in recent years using siliceous sandstone from Dunhouse, Darlington, sullyng irrevocably their historic character. The lack of availability of a suitable calcareous sandstone will lead inevitably to the repetition of such mistakes – themselves understandable so long as no source of calcareous sandstone exists.

The Hildenley quarries being long since closed and the closure and infilling of oolitic limestone quarries locally has led to the confused and often inappropriate introduction of limestones from elsewhere with which to repair Hildenley and oolite buildings locally, none of them as white or as fine and often of quite distinct geology – such as Magnesian limestone used to

replace Hildenley. Ancaster 'hard white' seems to have been the favourite of many architects, but this is more appropriately used for the replacement of the tan orange of the calcareous sandstone, not as it has tended to be, for the white to buff-white of the local limestones.

Other Lincolnshire limestones are being increasingly imported, from Creeton, for example. Whilst these are Jurassic and certainly oolitic, they also tend to yellow. This may be appropriate, according to the particular building, built with stone from a particular local quarry. Some of the Malton Oolite around Settrington, for example, bears similarity to the Creeton oolite. Generally, however, Malton oolite tends to pale cream and white.

For small-scale repairs to oolitic limestone buildings in Malton, hand-picked stone from Whitewall quarry may be appropriate, but this will usually require hand-dressing as well as locating in random piles of material awaiting crushing for aggregates. For larger-scale works, the most appropriate sources are likely to be quarries in the Cotswolds, a significant distance, involving significant embodied energy. Limestone from Brow's Quarry would mitigate this need to seek so far. In the meantime, and perhaps where large volumes are required, Hard White Tetbury limestone from the Cotswolds is by far the best oolitic limestone available. It is quarried on the same geological horizon as the Malton oolite.

Initial steps to facilitate the reopening of one, at least, of the Hildenley quarries are underway, but the extent of viable reserves has not yet been established; nor the willingness of the owners to allow a reopening at all. In the meantime, it is my opinion that the most appropriate substitute

material – where replacement of authentic Hildenley limestone is essential – is Portland Basebed – particularly Jordan’s Basebed as supplied by Albion Stone. The appearance of Portland and Hildenley is very similar under magnification and to the naked eye; their colour and character is very like when new and when weathered. They are geologically and chemically similar, although Portland lacks the clay content of Hildenley. Hildenley is not generally oolitic, but the oolids in Portland stone are so small as to make the difference insignificant (Wright, perscomm). Whilst used frequently as ashlar, Hildenley limestone was used especially for carved detail and performed significant structural function – for window and doorheads and cornices, for example. It is essential, therefore, that any replacement should be similarly carvable and strong.

Marnhull limestone from around the village of the same name, just north of Sturminster Newton, Dorset, has been suggested after petrographical analysis of Hildenley limestone. However, this is a strong cream colour when quarried and weathers to brown upon exposure to the atmosphere. It would not be a good match at all. It is also strongly oolitic.

For mass walling and squared rubble work in Hildenley, Tetbury Hard White would be a least worst option, short of Portland Base-bed. The latter is very expensive; Tetbury less than half as expensive. Whilst the Tetbury stone – as the Portland – is oolitic, the oolites are small and tight, as they are in Portland basebed.

It must be stressed that replacement of original material should always be a last resort and that the preservation of authenticity may often be better served by the deployment of honest repair

and lime mortar repair, at least until the ability of original material to perform its structural function has been lost. New stone, however well-matched, cannot restore authenticity, contributing only to the protection and preservation of the greater authenticity of the whole. All buildings should be allowed to look their age.

Villages.

Most vernacular buildings in the villages around Malton and across Ryedale, were built with immediately local stone, from quarries in their immediate vicinity. Churches and grander houses may have stones from further afield. In the earlier period, even this may have been prohibitively expensive unless there was navigable water close by. Calcareous sandstone travelled on the Derwent; Whitby sandstones similarly. Alne church, for example, is built almost entirely of North York Moors sandstone, brought via the nearby River Ouse from Whitby. Hildenley limestone travelled significant distances over land due to its being by far the best and the finest dimensional and carving stone available.

Magnesian limestone was rarely used in Ryedale until the most recent of times – this use reflecting the penchant of York masons and architects for its almost exclusive use. Its geology is quite alien to Ryedale, and it blends very poorly with local materials.

The villages at the foot of the Wolds are built of either Malton oolite or Birdsall calcareous sandstone, or a mixture of the two, for the most part. In these areas, the calcareous sandstone is seen in generally vernacular use as coursed

rubble. In Malton, this form of use is rare, the stone appearing mainly as ashlar, however much eroded it is now. On the high Wolds, brick or local chalk are most common. The chalk was shaped into rough blocks and coursed generally.

A porcellanous creamy-white limestone very similar to Hildenley limestone in appearance and structure was quarried historically in North Grimston. This is considered very little frost resistant, but was clearly used in the immediate locality, if only for coursed rubble walling. Several buildings in nearby Norton would seem to have been built with this material and are in a generally sound condition.

Around Howsham, Barton-le Willows and Harton, the local oolite, a strong cream colour, is dominant, with intrusions – and occasionally whole elevations – of an orange-brown sandstone, probably a carstone, that occurs in shallow beds hereabouts. Calcareous sandstone, carried on the Derwent, also appears, as well as Hildenley limestone robbed from Kirkham Priory or imported for use by the Stricklands.

Travelling towards Helmsley from Malton, one passes through villages of mainly oolitic limestone – the sort that was quarried extensively at Whitwell, dubbed ‘Whitwell’ or ‘Cave’ oolite by Howe. This displays a lot of blue – such stone still being quarried for roadstone at Wath quarry in Hovingham. The operator blasts the face, however, compromising the integrity of any rubble stone that may be diverted for building or repair.

In Hovingham, buildings are of this cave oolite, or better oolite, as well as calcareous sandstone. Hovingham Hall is of high bed calcareous sandstone very similar to that quarried in Malton

and quite possibly transported from Brow’s Quarry.

Between Hovingham and Helmsley, the walls and many of the buildings are built with the hard shelly, sandy and fragmentary limestone of the ‘Dogger’. This is a Cornbrash. Some particularly suitable beds of this were used to make roof slates of good durability, and these appear on buildings in Coxwold, for example.

Around Helmsley, the stone is predominantly calcareous sandstone and oolitic limestone, with North York Moors sandstone also. The immediately local stones in this area may be characterised as lime rich sandstones and sandy limestones in varying proportions, of similar general hue to the Birdsall calcareous sandstones.

On the North York Moors, the stone is almost universally of immediately local provenance. The deltaic sandstone varies in hue, from dark orange to brown, to purple to grey, but buildings are rarely found of one colour, or bed alone, being a mixture of several or indeed all of the different shades of the local sandstone. All contain some calcium carbonate. This thoroughgoing use of local material gives the Moors a very strong and unified local character. It is fortunate, therefore, that this stone is still quarried, although care must still be taken in the selection of stone for repair and conservation from the most appropriate beds, as the colour and character of these can vary significantly.

It has been common to substitute the North York Moors sandstone for the Birdsall calcareous for work on many important and listed buildings in Ryedale, and this has been sanctioned by English Heritage, in the absence of a source of the local calcareous sandstone. Whilst this is frequently

the least worst option, particular care over stone selection must be taken when this substitution is made. The browner, more tan beds are okay – the purple beds are clearly not. These latter were used recently for the repair of Kirby Grindalythe church. It is not enough to order stone from the ‘right’ or approved quarry; the bed and colour must also be specified, especially when the host building is of a different geology.

Whenever stone of very similar geology is not available, the strategy for repair should be even more acutely focussed upon minimising the replacement of original material.

Recommended alternatives for unavailable local stones:

For dimensional and carved Hildenley limestone, especially lintels, cornices, quoins etc: Portland Basebed.

For coursed rubble walling of Hildenley limestone: Tetbury Hard White limestone, available from Stone Supplies (Cotswolds); or Portland Stone, either Whitbed or Basebed.

Portland stone available from either

Stone Firms Ltd, 99 Easton Street, Portland, Dorset DT5 1BP , email: andrew.jackson@stone-firms.co.uk or from

Albion Stone plc, Independent Offices, Easton Street, Portland, Dorset, DT5 1BW
Email: sales@albionstone.com

For Malton Oolite: Tetbury Hard White limestone, random rubble, or ashlar, according to building under repair.

Tetbury Hard White limestone is available from Stone Supplies (Cotswolds), Veizey’s Quarry, Avening Road, Tetbury, Gloucestershire, GL8 8JT.
www.stonesupplies.co.uk

For calcareous sandstone: preferably local calcareous sandstone, currently unavailable or: calcareous sandstone from West Sussex. Top or Building Grade available from Lambs, Philpots Quarry, Philpots Lane, off Hook Lane, West Hoathly, West Sussex, RH19 4PT email: philpotsquarry@lambstone.com