

Everlasting Flint: Quintessence of Norfolk

by

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Norfolk is the fourth largest English county and while it lacks local building stone is nevertheless generously provided with flint laid down within underlying beds of chalk. The use of flint in the ecclesiastical context has been well studied and this essay attempts to examine its use in different building periods. Due to the amount of material this essay is necessarily selective and incomplete, and for comparison occasionally strays away from periods, places and building materials that are strictly within its subject. The building types and time span during which flint was a truly vernacular material were comparatively short, and modern revivals which exploit its decorative possibilities hover between Arts and Crafts for the Edwardian wealthy, token applications to lesser buildings between the two World Wars and more extravagant artistic display in recent years.¹

‘Here comes the lady. O so light a foot will ne’er wear out the everlasting flint’. So spoke Friar Lawrence at the approach of Juliet to his cell.² It is by no means the only literary reference to the hardness and durability of flint. Charles Dickens described Ebenezer Scrooge as ‘hard and sharp as flint, from which no steel had ever struck out generous fire’,³ while references to the hardness of flint occur in two Sherlock Holmes short stories⁴ and in a number of Biblical references, though the latter are possibly the work of translators rather than the original writers.⁵

In much of Norfolk one is never far from or unconscious of the presence of flint and in the last year of his life the artist John Sell Cotman, returning to Norfolk following an absence, wrote to Dawson Turner, his patron, ‘judge for yourself my happiness on finding your Norfolk flints capable of once more creating a blaze in my heart’.⁶ Cotman (1782-1842) was perhaps the greatest of the artists of the Norwich School founded by John Crome (1768-1821) whose interest in flint may also be seen in his painting (c. 1811-13) of two flints in a coastal setting, thought to have been a teaching tool for pupils (Fig. 1).

GEOLOGY⁷

Geologically flint, which is almost pure silica, was laid down in seams within chalk beds which stretch from either side of the Humber, then through Norfolk and in a diagonal line from west Suffolk to the Cotswolds, with narrower seams extending out to the northern shore of Kent and either side of the Isle of Wight (Fig. 2). The flint and chalk beds extend

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Fig. 1

John Crome, *Study of Flints*, c. 1811-13.

Norwich Castle Museum; courtesy of Norfolk Museums Service



Fig. 2

Geological sketch map of England and Wales, drawn by the author, based on A.E. Trueman, *Geology and Scenery in England and Wales* (1952), fig. 11.

The shaded areas are chalk, much of them flint bearing, especially the south coast and mid-Norfolk. Dotted areas have younger layers overlaying the chalk. The darkened area shows the approximate location of Norfolk.

through Norfolk to its eastern seaboard but are inclined and became deeper and therefore less accessible towards the east, besides which in the eastern parts of the county they are overlaid with later, generally glacial, deposits.

Flint for building may be extracted from pits excavated for the purpose (including chalk for lime burning) or wells, or found lying on or near ground surfaces, or in the north-east of the county exposed on cliff faces or lying on beaches around the high water line. All flints have a black core but those extracted from the chalk beds have a relatively thin white encrustation and may be of considerable size (Fig. 3), while those on beaches tend to be grey in colour with a rounded profile weathered by the sea. Thus in differing areas of the county differing effects are produced, and additional effects result when flints are cut or 'knapped' to expose the black core. Knapped flints may also be squared off to produce finer jointing, an effect further enhanced by 'galetting' whereby small flakes of flint are pressed in to disguise joints further.

In the north-west of the county the chalk beds are sufficiently hardened to be used for building (as 'clunch') in conjunction with flint and in a still more limited area is found an iron-stained sandstone, known as 'carstone'. Both clunch and carstone are visible in the striped cliffs of Hunstanton. Flint of course is by no means confined to Norfolk; it is similarly used in Suffolk and in the coastal areas of Kent, Sussex and Hampshire but it is in Norfolk that it seems such an essential and all pervading part of the character of the county.

EARLY HISTORY

The earliest mining of flint, at Grimes Graves in the south-west corner of Norfolk, was probably about four thousand years ago but this was for the manufacture of and trade in flint tools and weapons, and it was not until the Roman occupation that flint was used for building, with the essential aid of lime mortar to act as bedding, adhesive and gap filler, the latter role being more necessary when attempting to build with an irregularly shaped material. The Romans left impressive remains of their Saxon shore forts, notably at Burgh Castle (formerly in Suffolk) where the massive flint walling is laced for additional stability with bands of narrow Roman brick.

From early medieval times until the reformation, a period of several centuries, over much of the county flint was the building material most favoured for the construction of churches, abbeys, military and civic buildings, which despite their ubiquity and locally sourced building material cannot really be classed as vernacular. With minor exceptions, churches, especially in the later middle ages, were built, or wholly or partly rebuilt, by wealthy patrons, while military buildings such as castles were constructed by feudal families and civic buildings such as the Guildhalls at Norwich and King's Lynn by wealthy burgesses (Fig. 4). Included with civic buildings may be the hardly vernacular town walls at Norwich and Great Yarmouth. The former, of which somewhat scanty remains survive, were built with flints extracted from chalk workings (also a source of lime) just beyond the boundaries of the medieval city while the latter, with their imposing surviving towers were probably built with flint brought from further afield and carried to site by water since, as noted, the flint bearing strata were inclined and became deeper and less accessible towards the eastern seaboard.



Fig. 3

A large flint with white encrustation, taken from the basement of a house in central Norwich during repair. Flints of similar size were found *c.*1970 during alterations to an early 19th century brick terrace on the hillside east of the medieval city.

Photograph, A. Thorpe

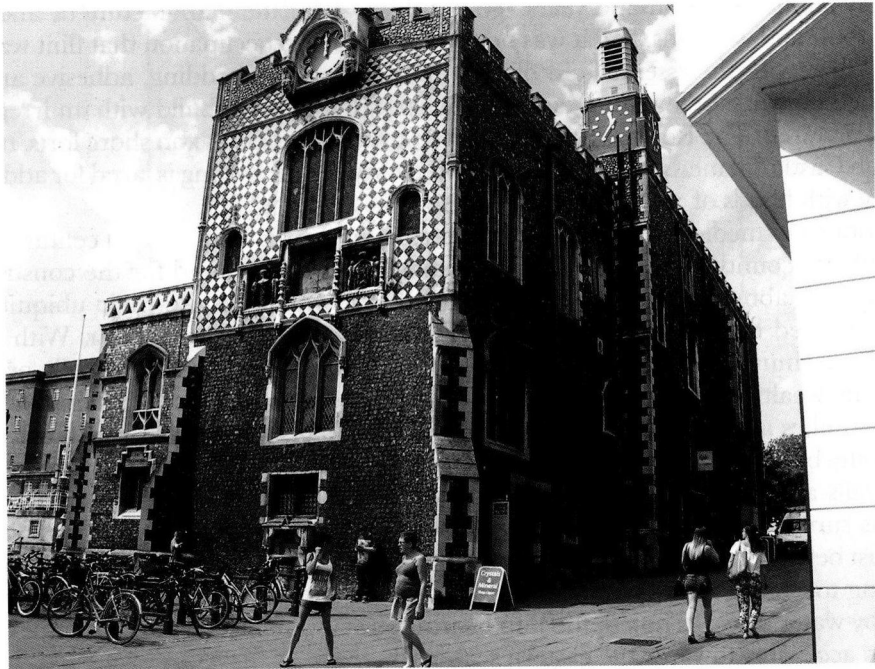


Fig. 4

Norwich Guildhall, a high status medieval secular building, exploiting the nature of high quality flintwork, well above the vernacular threshold.

Photograph, J. Thorpe, 2016

It should be remembered that the sourcing and transportation of materials in early periods represented a considerable proportion of total building costs. In the central strip of the county, running from the coast at the north end to the Suffolk boundary and beyond, flints were easily accessible, in some cases being simply picked up in fields or on beaches, or in others mined from comparatively shallow pits or digging of wells. At both east and west ends of the county however the seams of flint were considerably less accessible, while in the middle ages land transport was difficult and slow.⁸

CHANGING TIMES

It can be assumed that for most of the population in medieval times a dwelling built of flint was out of reach and that the norm was a simple timber and daub structure, probably thatched. With the coming of the reformation church building virtually ceased and following the dissolution of the monasteries by Henry VIII surplus buildings abounded and could be either adapted to new, largely domestic, uses or treated as quarries. Meanwhile monastic property was distributed to royal favourites, a rising middle class and in due course a new aristocracy who were also interested in and influenced by ideas flowing from the Renaissance in continental Europe.

The newly enriched or favoured built their houses (in Norfolk, where there was no native freestone) of brick (with exceptions) so that a local flint vernacular was derived from the relegation of flint to its use for outbuildings and boundary walls, pending a revival of interest firstly as an available local material for modest cottages, providing better accommodation for agricultural workers and fishermen, and later due to a growing appreciation of its decorative qualities which tended to come from beyond the boundaries of Norfolk.

The new houses for the wealthy included Oxburgh, 1482, brick; Blickling, 1618, of estate bricks with stone dressings using magnesian limestone from Yorkshire; Raynham, 1619, brick; Houghton, 1721, completely of sandstone brought at great expense, and with a fine detached brick stable block faced with carstone from west Norfolk; Holkham, 1721, faced with estate-produced buff brick laid to simulate Bath stone whose transport was considered too costly.

Felbrigg, of 1621, is brick faced but betrays its true colours with a gable of flint and has a wing added in 1675 entirely of red brick. The principle estate buildings at Holkham are brick but lesser buildings in the adjoining estate village are of flint with buff brick dressings and a true vernacular feel, especially as the flints are pebbles from the nearby beaches.

At Raynham, on the main road, is a most interesting group comprising twin lodges with screen walls and gates (Fig. 5), a double pile Georgian house with red brick front (Fig. 6), and a substantial barn set end-on to the road. The lodges and screen walls, seemingly early 19th century, are of white flints with pale brick dressings. The house, on first impression Georgian, has a fossilised flint gable, evidently part of an earlier smaller house, built into one end and apparently a vernacular survival. The barn is flint with brick dressings, clearly vernacular though with a degree of architectural pretension, with a roof covered with Welsh slates. Not only must this post-date the arrival of the railway in the 19th century but the slates which face the house are fish scale in profile while those facing the farmyard are cut square. On the other side of the main road are some flint-faced cottages, including one or two of earlier date. The whole composition,



Fig 5

The gate lodges of Raynham Hall, classical, of white flint with rusticated dressings of light brick.

Photograph, J. Thorpe, 2016



Fig 6

Raynham: a Georgian house of some distinction which nevertheless incorporates a fossilised flint gable betraying more modest origins.

Photograph, J. Thorpe, 2016

at the gates of Raynham Hall, is a picture of Norfolk vernacular, with the gate lodges verging on the polite.

The Raynham lodges are a rare delight for a period when flint was out of fashion: even modest cottages tended to have façades of local brick, with flint relegated to less visible elevations or outbuildings. In the Georgian market towns some fine façades of local red brick mask gables, rear elevations and outbuildings of flint (Fig. 7). In a number of such towns rebuilding was a consequence of fires and in others of fashion, and it is not easy to tell which buildings are new and which simply refronted. Flint is however used decoratively on the façades of a few buildings of the period in question (Fig. 8).

In the mid- to late-19th century, model agricultural workers' cottages arranged in pairs began to be built in some estate-owned villages and farmsteads. One such pair in the hamlet of Wellingham displays the date 1863 and similar pairs, presumably of similar date, appear in other nearby villages. However a pair next to the dated example, known as 'new cottages' is early 20th century and is faced with common brick from the Peterborough area, though still with flint on less visible elevations, an obvious example of the perceived relative status of even a low grade brick, and of the influence of mass production and rail transport (Fig. 9).

The 19th century produced a number of new building types, including small village chapels, village schools and railway stations, and of these a number were faced with flint or a combination of brick and flint. At Holt a large former Methodist chapel of 1838 has an imposing brick façade (Fig. 10) and a simpler flint rear wall (disfigured by an added brick chimney), while at the west end of the town centre in the early 1860's the Norwich architect Thomas Jekyll designed another Methodist chapel which incorporates flint into a restless medley of materials, mainly polychrome brick. Many smaller village chapels are brick but that at Litcham displays an interesting combination of flint with vertical and horizontal bands of brick (Fig. 11) and the former Methodist chapel at Great Walsingham (now Greek Orthodox) has a façade of knapped and squared flints and a roof covered in slates laid in a diagonal pattern.

The adjacent (larger) village of Little Walsingham acquired in 1842 a National School with an interesting Jacobean revival front with patterned slates, decorative chimneys and smaller elements of decorative freestone, but a totally traditional rear façade of flint with brick dressings (Fig. 12). The accompanying drawing shows a group in the Friday Market which well illustrates the progression of development in Little Walsingham, with the school on the right (Fig. 13). On the left is a late medieval dwelling with a masonry ground floor and a jettied timber-framed first floor, typical of others in the village and probably dating from the last days of the medieval shrine; in the centre is an elegant Georgian house, again typical of rebuilding or re-fronting in other parts of the village. Walsingham is the only settlement in north Norfolk where timber framing is found in any quantity, although it is common in south Norfolk, and also found in Norwich although numbers there have been reduced by redevelopment. The above school predated the railway but a number of Norfolk stations used flint in interesting ways, notably Thetford and a closed suburban station building in Norwich.



Fig. 7

Oakleigh House, Swaffham, showing its red brick front and gault brick rusticated quoins concealing flint behind its façade.

Photograph, J. Thorpe, 2016



Fig. 8

Montpelier House, Swaffham, with gault brick trim throughout and flint walling between.

Photograph, J. Thorpe, 2016-



Fig. 9

Semi-detached agricultural workers' cottages in Wellingham dated 1863 and all of flint. They adjoin a pair which are similar but designated 'new cottages' and have a brick front with flint behind; the bricks are mass produced from the Peterborough area and suggest a post-railway date. Similar pairs of flint cottages are to be found in adjoining villages.

Photograph, J. Thorpe, 2016

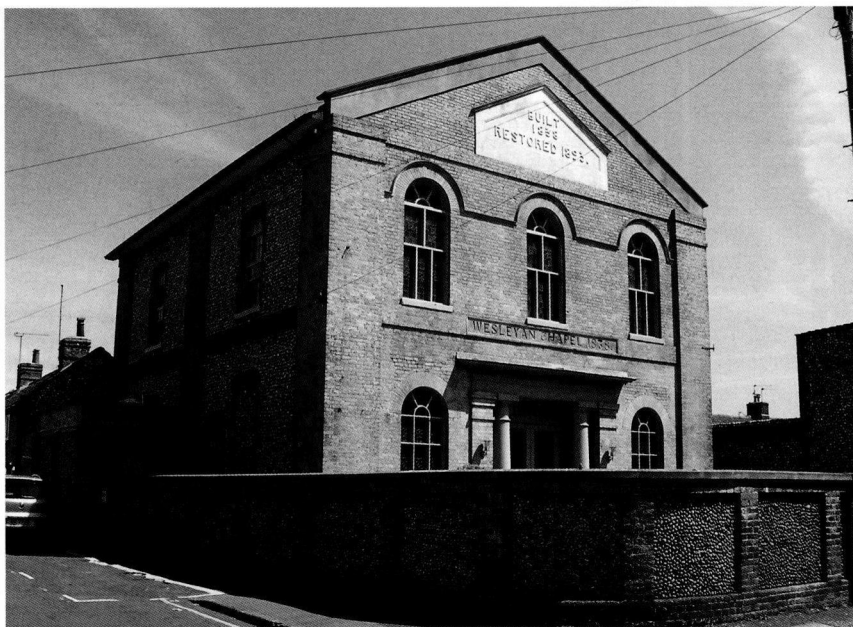


Fig. 10

Wesleyan chapel, Holt, 1838, with a brick façade flanked by flint returns framed with brick, and brick and flint boundary walls.

Photograph, J. Thorpe, 2016

FLINT AND ...

It is not possible to discuss flint buildings without reference to their association with other materials, for the simple reason that flints do not like turning corners or spanning or trimming openings. Very occasionally an early medieval quoin may be encountered⁹ and one of the theories relating to the number of early circular church towers in Norfolk is that circles avoid corners. This author has discovered one arch of raw flints on a cricket pavilion in Hampshire and late medieval churches in Norfolk have beautiful combinations of gauged brick and knapped flint, but these are not vernacular, and nor are the freestone trimmings of significant buildings. The really significant buildings, such as Norwich Cathedral, are clad entirely in stone, brought at first from Normandy by sea and later from the East Midlands by river, but even at this level the cores of walls and piers are of flint, and at Norwich the lesser buildings of the former monastery, converted to housing after the reformation, are of flint.

In the vernacular context, and at later periods, the material used in conjunction with flint is almost certain to be brick, probably from a local brickyard (of which there were many) and likely to be red, although there are significant examples where the available clay resulted in buff bricks being produced. There are also significant and interesting variations in quoins which are by no means always the perceived pattern of alternating header and stretcher courses set in threes. Arches and lintels are still more varied both in profile and in detail, the more interesting having tapered voussoirs of rubbed brick with fine joints, while better classes of building have shaped gables with cornices and decorative chimney stacks (Fig. 14).



Fig. 11

United Methodist Church, Litcham, 1909: flint with brick embellishment.

Photograph, J. Thorpe, 2016



Fig. 12

National School, Little Walsingham, 1842. Its façade is fanciful early Victorian Jacobean revival (see below), its rear aspect restrained standard brick and flint.

Photograph, J. Thorpe, 2016



Fig. 13

Little Walsingham, Friday Market, part of the west elevation showing a progression of buildings: left, late medieval with a jettied timber-framed first floor; centre, a Georgian rebuilding; right, the National School.

Drawing, author



Fig. 14

Church Street, Little Walsingham, showing interesting variations in brick dressings, including particularly fine door surrounds with chamfered jambs and beautifully rubbed brick arches.

Photograph, J. Thorpe, 2016



Fig. 15

A farm building in Little Walsingham with a wide brick quoin and the owner's initials in bottle ends within the flint walling.

Photograph, J. Thorpe, 2016

The availability of clunch and carstone in the north-west of the county has been mentioned and these are found in combination with flint in the Downham Market area and along the north coast as far as Wells-next-the-Sea (carstone) and around the Burnhams (clunch). The latter is usually in combination with a flint plinth, with the clunch joints frequently galleted, both measures to minimise damp. There are villages east of Kings Lynn where flint, carstone and clunch seem to become inextricably mixed, even occasionally with a freestone example included.

On a smaller scale, but nevertheless significant, is the incorporation of decorative features into areas of otherwise flint masonry. Examples include brick inserts to spell out initials and dates or even random patterns, and bottle ends may be used for the same purpose (Fig. 15). The architect of the Roman Catholic shrine church built in the 1980s in the village of Houghton St Giles relieved areas of plain flintwork with the incorporation of decorative small ceramic plaques.

RECYCLING

In places where religious establishments were dissolved by Henry VIII and in many cases sold to local landowners they proved a useful source of recycled materials. At Waxham the great barn, built about 1570 and extensively repaired in the 1990s, proved to have significant amounts of reused previously worked freestone embedded in its flint walls, particularly in its wall tops, while its original buttresses, of flint with freestone quoins and offset cappings, give the impression of having been bodily relocated.¹⁰ Reused material is also to be found in Sir William Paston's great barn at Paston, dated 1581 and repaired a few years after Waxham.

In the village of Little Walsingham two religious establishments were dissolved and fragments of reused stone are to be found built into post-medieval buildings of lower status. Recycling of materials is also in evidence in outbuildings and boundary walls using something of a hotch potch of materials. These include a farm building with a gable-end quoin constructed for its full height in previously worked freestone (Fig. 16) and reused stone and flint in smaller quantities are incorporated in dwellings and boundary walls.

In an area where freestone was scarce and expensive nothing was wasted and repairs to church towers which were rebuilt in late medieval times have also yielded reused previously worked freestone embedded into later walling.

BOUNDARY WALLS

Flint boundary walls may be considered a subsidiary study in the vernacular and they display interesting variations (Fig. 17). At their simplest they have flush-brick piers at regular intervals and clay copings, probably with a course of brick-set flush beneath the coping. Where the walls are high, piers may be wider and there may be horizontal brick bands at intervals, and the vertical piers may project to provide a buttressing effect, while the copings (which are usually weathered to shed water) may be replaced by standard bricks set on edge. Another variation is to omit clay copings altogether and cap walls with selected flints, set to shed water.

The former maltings at Letheringset, c. 1800, have recessed panels of knapped flint set within borders of buff brick and this was evidently something of a fashion as an impressive



Fig 16
A farm building in
Little Walsingham
with a quoin
built entirely of
recycled medieval
freestone.
*Photograph,
J. Thorpe, 2016*

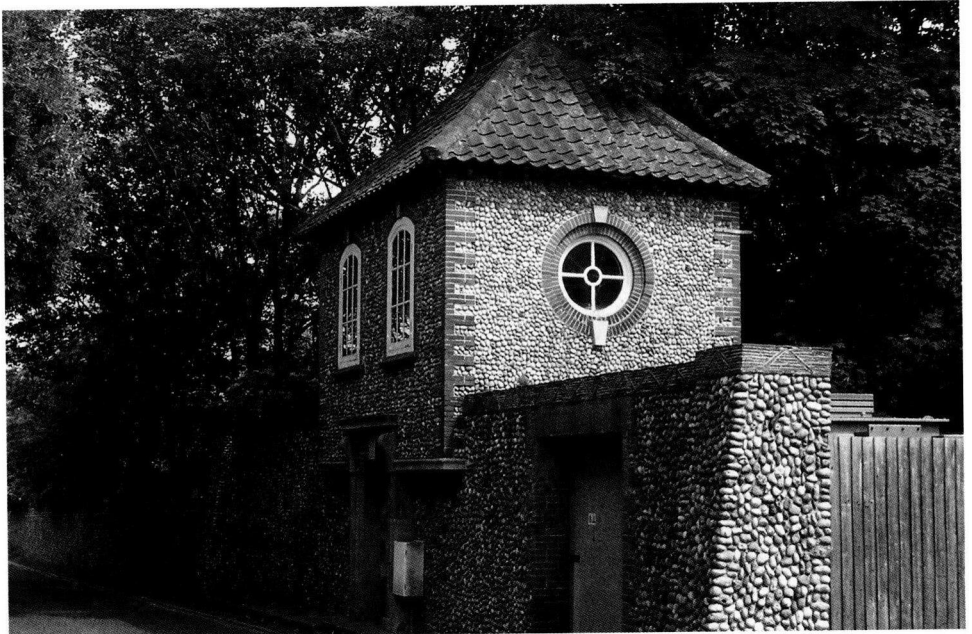


Fig 17

An early 20th century gazebo at Overstrand bestriding a boundary wall which is terminated by a battered pier whose quoins are formed with flint; note also the two course alternating brick quoins on the angle of the gazebo and the radiating brick surround to the circular opening (possibly showing the hand of Sir Edwin Lutyens).

Photograph, J. Thorpe, 2016

length of boundary wall of similar design may be seen at Ashill. At Little Walsingham a similar design for bridge parapets introduces gothic arches and in a pair of gate piers the design is similar but the borders are of freestone (doubtless reused).

MODERN DEVELOPMENTS

The flowering of the Arts and Crafts movement at the end of the 19th century led to a revival in the use of flint and a renewed appreciation of its decorative potential. Three distinguished houses were built in north Norfolk: Happisburgh Manor, 1892, a butterfly house by Detmar Blow; Voewood, on the edge of Holt, 1903-5, by E. S. Prior; and Kelling Hall, 1912-13, by Edward Maufe. These houses and others less grand were built for wealthy clients and are not true vernacular but they grew from the vernacular tradition and exploited the decorative potential of flint combined with other materials which may also be seen in model villages such as Glandford and seaside towns such as Sheringham and Cromer.

Jekyll's chapel at Holt, already mentioned, is an example of a Victorian extravaganza pre-dating the Arts and Crafts movement. Two other examples, in Norwich, are a house in the Cathedral Close (Fig. 18)¹¹ and an Edwardian knapped flint and terra cotta public urinal (Fig. 19).

The resort of Sheringham, which hardly existed until the late 19th century, displays interesting combinations of brick and flint, and of beach pebbles with knapped flint, including an end wall of knapped flint on a recently built supermarket and token flint panels on the Methodist church. Earlier flint cottages survive in small numbers near the seafront, including one with a cantilevered flint oriel, but until the development of the resort the earlier settlement of Upper Sheringham a mile inland was the more important and remains the perfect example of a vernacular coastal village of which a number survive further along the coast, though some are suffering pressures of over development.

At the lower level, cheap housing between the two world wars was embellished in the modest manner shown in the knapped flint chequerboard designs (Fig. 20) at Wells-next-the-Sea, some of which are now painted over. Also at Wells, an attractive, largely flint, Victorian school has recently been converted to housing for local people.

Post second world war developments have included the use of pre-cast panels faced with knapped flint, seen among other places on council housing in Norwich, and elsewhere Flemish bond brickwork with the headers replaced by flints. The latter can be seen on several blocks of public toilets in north Norfolk and on the gable of a post-war house in the Cathedral Close at Norwich built by a local architect for his own occupation (Fig. 21).¹² Somewhat more extravagant is a recent development in the village of Billingford where the façades of individual detached houses are entirely faced with knapped flints (Fig. 22).

A Roman Catholic church in Little Walsingham built ten years ago has reverted to ancient Norfolk tradition with a circular tower faced in pebbles which incorporates lettering and numerals of brick built into the flintwork, and irregular quoins. Two other façades, not seen from the road, are of coursed flint framed in brick. Also in Walsingham, a pair of newly built cottages is faced entirely with flint and in the market town of Fakenham a few miles away a furniture store has been given a new shop entrance flanked by panels of beach flints.



Fig. 18

Victorian extravaganza in Norwich: a fanciful house in the Cathedral Close, recommended for 'elimination' in 1945, now listed.

Photograph, J. Thorpe, 2016



Fig. 19

A former public urinal, St Andrew's Hall Plain, Norwich, by A.E. Collins, City Architect and Engineer, 1902, with a curved profile of knapped flint and terra cotta dressings.

Photograph, J. Thorpe, 2016



Fig 20
House at Wells-next-the-Sea, mid-20th century.
Photograph, J. Thorpe, 2016



Fig 21
House in Norwich Cathedral Close, post second world war, using Flemish bond with the
headers replaced by individual flints.
Photograph, J. Thorpe, 2016

CONCLUSION

Probably the best example of precast panels of knapped flint was the Norwich Central Library of 1960-62, designed by James Vanston of the Norwich City Architect's Department headed by David Percival. The building was faced with storey-height panels alternating with narrow windows. It was tragically destroyed by fire in 1994 (Fig. 23).

The library was an interesting foil for Saint Peter Mancroft, the finest medieval church in the city, but it has been replaced by the 'Forum' which houses the library amongst other functions and is a somewhat dominating structure paying little respect to its setting. It does however provide an interesting vantage point from which to view the church, which is faced mostly in stone, including a little flushwork, and also embraces Robert Potter's quietly unassuming extensions at the east end, added in the early 1980s and faced with flint framed in stone.

The vernacular tradition is not dead but it is somewhat artificially kept alive and with exceptions such as the newly converted school at Wells is not really for vernacular people. Two attractive though slightly fussy housing developments at Blakeney, of flint and red brick, are more likely to be occupied as expensive second homes, which is apparently the fate of 60% of the dwellings in the coastal strip of north Norfolk (against a national average of less than 5%).

Alec Clifton-Taylor was dismissive of low grade flintwork: 'it is in truth not easy to become enthusiastic about the colouring of a wall of unfractured flints, which all too often reminds us of school pudding, with black currants, brown sultanas, and plenty of dun-coloured suet where the mortar is'.¹³ Perhaps it is as well that Alec Clifton-Taylor and John Sell Cotman never came face to face.

Clifton-Taylor's opinion was possibly not shared either by those two knights in armour who in the 14th century chose to have their effigies laid on beds of pebbles at Ingham and Reepham respectively, though one cannot discern with certainty whether this indicates a centuries-old love of Norfolk flint or a suspicion that it might be prudent to be uncomfortable in death in order to ensure a safe passage to the after life.

ACKNOWLEDGEMENTS

A number of studies of flint were published during the second half of the 20th century. The most comprehensive is probably *Flint Architecture in East Anglia* by the late Stephen Hart, published by GLM of London (2000), but it covers East Anglia as a whole and has a bias towards the ecclesiastical rather than the vernacular. In 2003 Stephen Hart published a second book under the heading *The Round Church Towers of England* and there are smaller works of relevance, while the Norfolk volumes of *The Buildings of England* have been relied upon totally for dates.

The author gratefully acknowledges the consent of the Norfolk Museums Service to the publication of John Crome's *Study of Flints*, and permission from Eastern Counties Newspapers for the reproduction of their dramatic photograph of the Norwich Central Library ablaze on 1st August 1994. The author has also benefitted hugely from the editorial assistance of his daughter Dr Gabrielle Thorpe, and from two conscripted grandchildren, Joseph and Sophia Thorpe, without whose knowledge of digital photography and computer technology this modest essay would never have been completed. Nor would it have appeared without the agreement of a willing wife to act as chauffeuse.



Fig 22

A group of modern houses at Billingford, of brick with façades of knapped flint.

Photograph, J. Thorpe, 2016

NOTES

1. But see 'Conclusion: The Vernacular Revival' in R. W. Brunskill, *Illustrated Handbook of Vernacular Architecture*, (Faber 1971), 190-1.
2. W. Shakespeare, *Romeo and Juliet*, II, vi.
3. C. Dickens, *A Christmas Carol*, Stave 1 (1843).
4. A. Conan Doyle, *The Adventure of the Devil's Foot* (1910), collected in *His Last Bow* (1917) and *The Adventure of the Three Garridebs* (1924), collected in *The Casebook of Sherlock Holmes* (1927).
5. See for example, *Isaiah*, 50,7, 'I set my face like a flint' from the Palm Sunday liturgy, and *Ezekiel*, 3,9, 'an adamant harder than flint'.
6. Cotman's words are frequently quoted, for example by John Piper, 'John Sell Cotman, 1782-1842', (*The Architectural Review*, 92, July 1942), 12. Piper wrote again on 'Flint' in November 1944: 'Today the material is often regarded as antiquarian. This is quite wrong; and it would be worth seeing what a modern architect could make of it' (*The Architectural Review*, 96, 149).
7. The note on Norfolk geology, including the map, is largely derived from the Pelican edition of A. E. Trueman, *Geology and Scenery in England and Wales* (1952), chapter IV.
8. The considerable cost of carriage, except for the simplest type of building constructed of absolutely local materials, is discussed in L. F. Saltzman, *Building in England Down to 1540*, (Oxford 1952), 349-51.
9. Unusually in the author's experience the north-west angle of the nave of the small church at Wellingham is entirely of flint.
10. To counter the instability of the walls many additional buttresses had been added over time, but these were all of brick. Reused timbers were also found in the roof.
11. The house was designed as a canonry in 1862-4 by local architect John Brown and is now an Abbeyfield residence. It was said of this house in the *City of Norwich Plan* (1945) that it should be 'eliminated as soon as possible', indicating how fashions change.
12. The house was built by the late Sir Bernard Feilden with an office on the ground floor and a two-story maisonette above, which his burgeoning practice rapidly outgrew. Earlier in his career Sir Bernard designed a United Reform church which mixed knapped flint with other materials and was recently listed.
13. A. Clifton-Taylor, *The Pattern of English Building*, (London 1972), 199.



Fig 23

Norwich Central Library, by David Percival, City Architect (job architect, James Vanston), 1960-2, destroyed by fire, 1 August 1994; probably the best example of pre-cast, flint-faced panels, storey height. A number of more modern examples of this technique exist.

Eastern Counties Newspapers' photograph of Library fire, 1 August 1994; copyright of Eastern Counties Newspapers.