

= Norton Priory =

Norton Priory is a historic site in Norton , Runcorn , Cheshire , England , comprising the remains of an abbey complex dating from the 12th to 16th centuries , and an 18th @-@ century country house ; it is now a museum . The remains are a scheduled ancient monument and are recorded in the National Heritage List for England as a designated Grade I listed building . They are considered to be the most important monastic remains in Cheshire .

The priory was established as an Augustinian foundation in the 12th century , and was raised to the status of an abbey in 1391 . The abbey was closed in 1536 , as part of the dissolution of the monasteries . Nine years later the surviving structures , together with the manor of Norton , were purchased by Sir Richard Brooke , who built a Tudor house on the site , incorporating part of the abbey . This was replaced in the 18th century by a Georgian house . The Brooke family left the house in 1921 , and it was partially demolished in 1928 . In 1966 the site was given in trust for the use of the general public .

Excavation of the site began in 1971 , and became the largest to be carried out by modern methods on any European monastic site . It revealed the foundations and lower parts of the walls of the monastery buildings and the abbey church . Important finds included : a Norman doorway ; a finely carved arcade ; a floor of mosaic tiles , the largest floor area of this type to be found in any modern excavation ; the remains of the kiln where the tiles were fired ; a bell casting pit used for casting the bell ; and a large medieval statue of Saint Christopher .

The site was opened to the public in the 1970s . It includes a museum , the excavated ruins , and the surrounding garden and woodland . In 1984 the separate walled garden was redesigned and opened to the public . Norton Priory is now a visitor attraction , and the museum trust organises a programme of events , exhibitions , educational courses , and outreach projects .

= = History = =

= = = Priory = = =

In 1115 a community of Augustinian canons was founded in the burh of Runcorn by William fitz Nigel , the second Baron of Halton and Constable of Chester , on the south bank of the River Mersey where it narrows to form the Runcorn Gap . This was the only practical site where the Mersey could be crossed between Warrington and Birkenhead , and the archaeologists Fraser Brown and Christine Howard @-@ Davis consider it likely that the canons cared for travellers and pilgrims crossing the river . They also speculate that William may have sought to profit from the tolls paid by these travellers . The priory was the second religious house to be founded in the Earldom of Chester ; the first was the Benedictine St Werburgh 's Abbey at Chester , founded in 1093 by Hugh Lupus , the first Earl of Chester . The priory at Runcorn had a double dedication , to Saint Bertelin and to Saint Mary . The authors of the Victoria County History suggest that the dedication to St Bertelin was taken from a Saxon church already existing on the site . In 1134 William fitz William , the third Baron of Halton , moved the priory to a site in Norton , a village 3 miles (5 km) to the east of Runcorn . The reasons for the move are uncertain . It may have been that fitz William wanted greater control of the strategic crossing of the Mersey at Runcorn Gap , or it may have been because the canons wanted a more secluded site . Nothing remains of the site of the original priory in Runcorn .

The site for the new priory was in damp , scrubby woodland . There is no evidence that it was agricultural land , or that it contained any earlier buildings . The first priority was to clear and drain the land . There were freshwater springs near the site , and these would have provided fresh running water for latrines and domestic purposes . They would also have been used to create watercourses and moated enclosures , some of which might have been used for orchards and herb gardens . Sandstone for building the priory was available at an outcrop nearby , sand for mortar could be obtained from the shores of the River Mersey , and boulder clay on the site provided

material for floor and roof tiles . Excavation has revealed remnants of oak , some of it from trees hundreds of years old . It is likely that this came from various sources ; some from nearby , and some donated from the forests at Delamere and Macclesfield . The church and monastic buildings were constructed in Romanesque style .

The priory was endowed by William fitz Nigel with properties in Cheshire , Lancashire , Nottinghamshire , Lincolnshire and Oxfordshire , including the churches of St Mary , Great Budworth and St Michael , Chester . By 1195 the priory owned eight churches , five houses , the tithe of at least eight mills , the rights of common in four townships , and one @-@ tenth of the profits from the Runcorn ferry . The prior supplied the chaplain to the hereditary Constables of Chester and to the Barons of Halton .

During the 12th century , the main benefactors of the priory were the Barons of Halton , but after 1200 their gifts reduced , mainly because they transferred their interests to the Cistercian abbey at Stanlow , which had been founded in 1178 by John fitz Richard , the sixth baron . Archaeologist J. Patrick Greene states that it is unlikely that any of the Barons of Halton were buried in Norton Priory . The only members of the family known to be buried there are Richard , brother of Roger de Lacy , the seventh baron , and a female named Alice . The identity of Alice has not been confirmed , but Greene considers that she was the niece of William , Earl Warenne , the 5th Earl of Surrey and therefore a relative of the Delacy family , who were at that time the Barons of Halton . The earl made a grant to the priory of 30 shillings a year in order to " maintain a pittance for her soul " . As the role played by the Barons of Halton declined , so the importance of members of the Dutton family increased . The Duttons had been benefactors since the priory 's foundation , and from the 13th century they became the principal benefactors . There were two main branches of the family , one in Dutton and the other in Sutton Weaver . The Dutton family had their own burial chapel in the priory , and burial in the chapel is specified in three wills made by members of the family . The Aston family of Aston were also important benefactors .

The priory buildings , including the church , were extended during the late 12th and early 13th centuries . It has been estimated that the original community would have consisted of 12 canons and the prior ; this increased to around 26 members in the later part of the 12th century , making it one of the largest houses in the Augustinian order . By the end of the century the church had been lengthened , a new and larger chapter house had been built (I * on the plan) , and a large chapel had been added to the east end of the church (N) . In about 1200 the west front of the church was enlarged (M) , a bell tower was built and guest quarters were constructed . It is possible that the chapel at the east end was built to accommodate the holy cross of Norton , a relic which was reputed to have miraculous healing powers . A fire in 1236 destroyed the timber @-@ built kitchen (Q) and damaged the west range of the monastic buildings and the roof of the church . The kitchen was rebuilt and the other damage was rapidly repaired .

= = = Abbey = = =

During the first half of the 14th century , the priory suffered from financial mismanagement and disputes with the Dutton family , exacerbated by a severe flood in 1331 that reduced the income from the priory 's lands . The direct effects of the Black Death are not known , but during the 1350s financial problems continued . These were partly mitigated with the selling of the advowson of the church at Ratcliffe @-@ on @-@ Soar . Matters further improved from 1366 with the appointment of Richard Wyche as prior . He was active in the governance of the wider Augustinian order and in political affairs , and in 1391 was involved in raising the priory 's status to that of a mitred abbey . A mitred abbey was one in which the abbot was given permission to use pontifical insignia , including the mitre , ring and pontifical staff , and to give the solemn benediction provided a bishop was not present . It was rare for an Augustinian house to be elevated to this status . Out of about 200 Augustinian houses in England and Wales , 28 were abbeys and only seven of these became mitred . The only other mitred abbey in Cheshire was that of St Werburgh in Chester . In 1379 and in 1381 there were 15 canons at Norton and in 1401 there were 16 , making it the largest Augustinian community in the northwest of England . By this time the barony of Halton had passed by a series of

marriages to the duchy of Lancaster . John of Gaunt , the 1st Duke of Lancaster and 14th Baron of Halton , agreed to be the patron of the newly formed abbey . At this date the church was 287 feet (87 m) long ; it was the second longest Augustinian church in northwest England , exceeded only by the 328 feet (100 m) long church at Carlisle . Towards the end of the 14th century , the abbey acquired a " giant " statue of Saint Christopher . Three wills from members of the Dutton family from this period survive ; they are dated 1392 , 1442 and 1527 , and in each will money was bequeathed to the foundation .

The abbey 's fortunes went into decline after the death of Richard Wyche in 1400 . Wyche was succeeded by his prior , John Shrewsbury , who " does not seem to have done more than keep the house in order " . Frequent floods had reduced its income , and in 1429 the church and other abbey buildings were described as being " ruinous " . Problems continued through the rest of the 15th century , resulting in the sale of more advowsons . By 1496 the number of canons had been reduced to nine , and to seven in 1524 . In 1522 there were reports of disputes between the abbot and the prior . The abbot was accused of " wasting the house 's resources , nepotism , relations with women " and other matters , while the prior admitted to " fornication and lapses in the observation of the Rule " . The prior threatened the abbot with a knife , but then left the abbey . The physical state of the buildings continued to deteriorate .

The records of the priory and abbey have not survived , but the excavations and the study of other documents have produced evidence of how the monastic lands were managed . The principal source of income came from farming . This income was required not only for the building and upkeep of the property , but also for feeding the canons , their guests , and visiting pilgrims . The priory also had an obligation from its foundation to house travellers fording the Mersey . It has been estimated that nearly half of the demesne lands were used for arable farming . The grain grown on priory lands was ground by a local windmill and by a watermill outside the priory lands . Excavations revealed part of a stone handmill in the area used in the monastic kitchen . In addition to orchards and herb gardens in the moated enclosures , it is likely that beehives were maintained for the production of honey . There is evidence from bone fragments that cattle , sheep , pigs , geese and chickens were reared and consumed , but few bone fragments from deer , rabbits or hares have been discovered . Horseflesh was not eaten . Although few fish bones have been discovered , it is known from documentary evidence that the canons owned a number of local fisheries . The fuel used consisted of wood and charcoal , and turf from marshes over which the priory had rights of turbary (to cut turf) .

The events in 1536 surrounding the fate of the abbey at the dissolution of the monasteries are complicated , and included a dispute between Sir Piers Dutton , who was in a powerful position as the Sheriff of Cheshire , and Sir William Brereton , the deputy @-@ chamberlain of Chester . Dutton 's estate was next to that of the abbey , and Dutton plotted to gain some of its land from the Crown after the dissolution ; while Brereton supported the abbot against Dutton and held the lucrative position of steward of the abbey . A campaign of vilification was directed at the canons , asserting that they were guilty of " debauched conduct " . Then , in 1535 , Dutton falsely accused the abbot and Brereton of issuing counterfeit coins . This charge was dismissed mainly because one of Dutton 's witnesses was considered to be " unconvincing " . Playing into Duttons ' hands was the gross undervaluation of the abbey 's assets as reported to the royal commissioners of the Valor Ecclesiasticus of 1535 ; as a result of which the net annual income of the abbey was recorded , falsely , as falling below the £ 200 threshold that would subsequently be chosen for the first round of dissolutions in 1536 , although whether this subterfuge was due to the machinations of Dutton or the abbot (or both) remains unclear . Brereton and the abbot appear to have attempted to have the dissolution cancelled subject to the payment of a fine , as was the case in large numbers of other houses in similar circumstances ; but in the abbot 's absence dissolution commissioners arrived unannounced at the abbey in early October 1536 . There was considerable opposition , the commissioners being menaced by around 300 local people ; for whom the abbot , rushing back , threw an impromptu feast complete with roasted ox . According to Dutton 's account , after barricading themselves in a tower the commissioners managed to send a letter to Dutton , who arrived with a force of men in the middle of the night . Most of the rioters fled , but Dutton arrested

the abbot and four of the canons , who were sent to Halton Castle and then to prison in Chester . Dutton sent a report of the events to Henry VIII ; who demanded that if the abbot and canons had behaved as Dutton reported , they should be immediately executed as traitors . However , because the king's instructions had been conveyed by the Lord Chancellor in the form of letters to both Dutton and Brereton , the two faction leaders would be required to act together to effect them ; with the consequence that Brereton was temporarily able to stall any such action by refusing to meet with Dutton . Events elsewhere in the country further delayed the execution and , following an intercession to Thomas Cromwell (whose own informal contacts had cast doubt on the reliability of Dutton 's reports) , the abbot and canons were discharged and awarded pensions . The abbey was made uninhabitable , the lead from the roof , the bell metal , and other valuable materials were confiscated for the king , and the building lay empty for nine years . The estate came into the ownership of the Crown , and it was managed by Brereton . From the evidence of damage to the tiled floor of the church , Brown and Howard @-@ Davis conclude it is likely that the church was demolished at an early stage , but otherwise the archaeological evidence for this period is sparse and largely negative .

= = = Country house = = =

In 1545 the abbey and the manor of Norton were sold to Sir Richard Brooke for a little over £ 1 @, @ 512 (equivalent to £ 660 @, @ 000 in 2015) . Brooke built a house in Tudor style , which became known as Norton Hall , using as its core the former abbot 's lodgings and the west range of the monastic buildings . It is not certain which other monastic buildings remained when the abbey was bought by the Brookes ; excavations suggest that the cloisters were still present . A 17th @-@ century sketch plan by one of the Randle Holme family shows that the gatehouse remained at that time , although almost all the church had been demolished . An engraving by the Buck brothers dated 1727 shows that little changed by the next century .

During the Civil War the house was attacked by a force of Royalists . The Brookes were the first family in north Cheshire to declare allegiance to the Parliamentary side . Halton Castle was a short distance away , and was held by Earl Rivers for the Royalists . In February 1643 a large force from the castle armed with cannon attacked the house , which was defended by only 80 men . Henry Brooke successfully defended the house , with only one man wounded , while the Royalists lost 16 men including their cannonier (gunner) . They burnt two barns and plundered Brooke 's tenants , but " returned home with shame and the hatred of the country " .

At some time between 1727 and 1757 the Tudor house was demolished and replaced by a new house in Georgian style . The house had an L @-@ plan , the main wing facing west standing on the footprint of the Tudor house , with a south wing at right @-@ angles to it . The ground floor of the west wing retained the former vaulted undercroft of the west range of the medieval abbey , and contained the kitchens and areas for the storage of wines and beers . The first floor was the piano nobile , containing the main reception rooms . The west front was symmetrical , in three storeys , with a double flight of stairs leading up to the main entrance . Clearance of the other surviving remnants of the monastic buildings had started but the moated enclosures were still in existence at that time . A drawing dated 1770 shows that by then all these buildings and the moats had been cleared away , and the former fishponds were being used for pleasure boating . Between 1757 and the early 1770s modifications were made to the house , the main one being the addition of a north wing . According to the authors of the Buildings of England series , the architect responsible for this was James Wyatt . Also between 1757 and 1770 , the Brooke family built a walled garden at a distance from the house to provide fruit , vegetables and flowers . The family also developed the woodland around the house , creating pathways , a stream @-@ glade and a rock garden . Brick @-@ built wine bins were added to the undercroft , developing it into a wine cellar , and barrel vaulting was added to the former entrance hall to the abbey (which was known as the outer parlour) , obscuring its arcade .

During the mid @-@ 18th century , Sir Richard Brooke was involved in a campaign to prevent the Bridgewater Canal from being built through his estate . The Bridgewater Canal Extension Act had

been passed in 1762 , and it made allowances for limited disturbance to the Norton estate . However Sir Richard did not see the necessity for the canal and opposed its passing though his estate . In 1773 the canal was opened from Manchester to Runcorn , except for 1 mile (2 km) across the estate , which meant that goods had to be unloaded and carted around it . Eventually Sir Richard capitulated , and the canal was completed throughout its length by March 1776 .

By 1853 a service range had been added to the south wing of the house . In 1868 the external flight of stairs was removed from the west front and a new porch entrance was added to its ground floor . The entrance featured a Norman doorway that had been moved from elsewhere in the monastery ; Greene believes that it probably formed the entrance from the west cloister walk into the nave of the church . An exact replica of this doorway was built and placed to the north of the Norman doorway , making a double entrance . The whole of the undercroft was radically restored , giving it a Gothic theme , adding stained glass windows and a medieval @-@ style fireplace . The ground to the south of the house was levelled and formal gardens were established .

During the 19th century the estate was again affected by transport projects . In 1804 the Runcorn to Latchford Canal was opened , replacing the Mersey and Irwell Navigation ; this cut off the northern part of the estate , making it only accessible by a bridge . The Grand Junction Railway was built across the estate in 1837 , followed by the Warrington and Chester Railway , which opened in 1850 ; both of these lines affected the southeast part of the estate . In 1894 , the Runcorn to Latchford Canal was replaced by the Manchester Ship Canal , and the northern part of the estate could only be accessed by a swing bridge . The Brooke family left the house in 1921 , and it was almost completely demolished in 1928 . Rubble from the house was used in the foundations of a new chemical works . During the demolition , the undercroft was retained and roofed with a cap of concrete . In 1966 the current Sir Richard Brooke gave Norton Priory in trust for the benefit of the public .

= = = Excavations and museum = = =

In 1971 J. Patrick Greene was given a contract to carry out a six @-@ month excavation for Runcorn Development Corporation as part of a plan to develop a park in the centre of Runcorn New Town . The site consisted of a 500 @-@ acre (202 ha) area of fields and woods to the north of the Bridgewater Canal . Greene 's initial findings led to his being employed for a further 12 years to supervise a major excavation of the site . The buildings found included the Norman doorway with its Victorian addition and three medieval rooms . Specialists were employed and local volunteers were recruited to assist with the excavation , while teams of supervised prisoners were used to perform some of the heavier work . The area excavated exceeded that at any European monastic site that used modern methods . The Development Corporation decided to create a museum on the site , and in 1975 Norton Priory Museum Trust was established .

In 1989 Greene published his book about the excavations entitled Norton Priory : The Archaeology of a Medieval Religious House . Further work has been carried out , recording and analysing the archaeological findings . In 2008 Fraser Brown and Christine Howard @-@ Davis published Norton Priory : Monastery to Museum , in which the findings are described in more detail . Howard @-@ Davis was largely responsible for the post @-@ excavation assessment and for compiling a database for the artefacts and , with Brown , for their analysis .

= = Findings from excavations = =

= = = Priory 1134 ? 1236 = = =

The excavations have revealed information about the original priory buildings and grounds , and how they were subsequently modified . A series of ditches was found that would have provided a supply of fresh water and also a means for drainage of a relatively wet site . Evidence of the earliest temporary timber buildings in which the canons were originally housed was found in the form of 12th

@-@ century post pits . Norton Priory is one of few monastic sites to have produced evidence of temporary quarters . The remains of at least seven temporary buildings have been discovered . It is considered that the largest of these , because it had more substantial foundations than the others , was probably the timber @-@ framed church ; another was most likely the gatehouse , and the other buildings provided accommodation for the canons and the senior secular craftsmen .

The earliest masonry building was the church , which was constructed on shallow foundations of sandstone rubble and pebbles on boulder clay . The walls were built in local red sandstone with ashlar faces and a rubble and mortar core . The ground plan of the original church was cruciform , and consisted of a nave without aisles , a choir at the crossing with a tower above it , a square @-@ ended chancel , and north and south transepts , each with an eastern chapel . The total length of the church was 148 feet (45 @. @ 1 m) and the total length across the transepts was 74 feet (22 @. @ 6 m) , giving a ratio of 2 : 1 . The walls of the church were 5 feet (1 @. @ 5 m) wide at the base , and the crossing tower was supported on four piers .

The other early buildings were built surrounding a cloister to the south of the church . The east range incorporated the chapter house and also contained the sacristy , the canons ' dormitory and the reredorter . The upper storey of the west range provided living accommodation for the prior and an area where secular visitors could be received . In the lower storey was the undercroft where food and fuel were stored . The south range contained the refectory , and at a distance from the south range stood the kitchen . Evidence of a bell foundry dating from this period was found 55 yards (50 m) to the north of the church . It is likely that this was used for casting a tenor bell . A few moulded stones from this early period were found . These included nine blocks that probably formed part of a corbel table . There were also two beak @-@ head voussoirs ; this type of voussoir is rare in Cheshire , and has been found in only one other church in the county .

Considerable expansion occurred during the last two decades of the 12th century and the first two or three decades of the 13th century . The south and west ranges were demolished and rebuilt , enlarging the cloister from about 36 feet (11 m) by 32 feet (10 m) to about 56 feet (17 m) by 52 feet (16 m) . This meant that a door in the south wall of the church had to be blocked off and a new highly decorated doorway was built at the northeast corner of the cloister ; this doorway has survived . The lower storey of the west range , the other standing remains of the priory , also dates from this period ; it comprises the cellarer 's undercroft and a passage to its north , known as the outer parlour . The outer parlour had been the entrance to the priory from the outside world , and was " sumptuously decorated " so that " the power and wealth of the priory could be displayed in tangible fashion to those coming from the secular world " . The undercroft , used for storage , was divided into two chambers , and its decoration was much plainer . The upper floor has been lost ; it is considered that this contained the prior 's living quarters and , possibly , a chapel over the outer parlour . A new and larger reredorter was built at the end of the east range , and it is believed that work might have started on a new chapter house . A system of stone drains was constructed to replace the previous open ditches . The west wall of the church was demolished and replaced by a more massive structure , 10 feet (3 m) thick at the base . The east wall was also demolished and the chancel was extended , forming an additional area measuring approximately 27 feet (8 m) by 23 feet (7 m) .

= = = Priory and abbey 1236 ? 1536 = = =

The excavation revealed evidence of the fire of 1236 , including ash , charcoal , burnt planks and a burnt wooden bowl . It is thought that the fire probably started in the timber @-@ built kitchens at the junction of the west and south ranges , and then spread to the monastic buildings and church . Most of the wood in the buildings , including the furnishings and roofs , would have been destroyed , although the masonry walls remained largely intact . The major repairs required gave an opportunity for the extension of the church by the addition of new chapels to both of the transepts , and its refurbishment in a manner even grander than previously . The cloister had been badly damaged in the fire and its arcade was rebuilt on the previous foundations . The new arcade was of " very high quality and finely wrought construction " . Brown and Howard @-@ Davis state that the kitchens

were rebuilt on the same site and it appears that they were rebuilt in timber yet again . Excavations have found evidence of a second bell foundry in the northwest of the priory grounds . The date of this is uncertain but Greene suggests that it was built to cast a new bell to replace the original one that was damaged in the fire . Later in the 13th century another chapel was added to the north transept . Accommodation for guests was constructed to the southwest of the monastic buildings .

In the later part of the 13th century and during the following century the chapel in the south transept was replaced by a grander two @-@ chambered chapel . This balanced the enlarged chapels in the north transept , restoring the church 's cruciform plan . Around this time the east end of the church was further extended when a reliquary chapel was added measuring about 42 feet (13 m) by 24 feet (7 m) . A guest hall was built to the west of the earlier guest quarters . After the status of the foundation was elevated from a priory to an abbey , a tower house was added to the west range . This is shown on the engraving by the Buck brothers , but it has left little in the way of archaeological remains . The church was extended by the addition of a north aisle . There is little evidence of later major alterations before the dissolution . There is evidence to suggest that the cloister was rebuilt , and that alterations were made to the east range .

= = = Burials = = =

The excavations revealed information about the burials carried out within the church and the monastic buildings , and in the surrounding grounds . They are considered to be " either those of Augustinian canons , privileged members of their lay household , or of important members of the Dutton family " . Most burials were in stone coffins or in wooden coffins with stone lids , and had been carried out from the late 12th century up to the time of the dissolution . The site of the burial depended on the status of the individual , whether they were clerical or lay , and their degree of importance . Priors , abbots , and high @-@ ranking canons were buried within the church , with those towards the east end of the church being the most important . Other canons were buried in a graveyard outside the church , in an area to the south and east of the chancel . Members of the laity were buried either in the church , towards the west end of the nave or in the north aisle , or outside the church around its west end . It is possible that there was a lay cemetery to the north and west of the church . The addition of the chapels to the north transept , and their expansion , was carried out for the Dutton family , making it their burial chapel , or family mausoleum , and the highest concentration of burials was found in this part of the church . It is considered that the north aisle , built after the priory became an abbey , was added to provide a burial place for members of the laity .

The excavations revealed 49 stone coffins , 30 coffin lids , and five headstones . Twelve of the lids were carved in high relief , with designs including flowers or foliage . One lid depicts an oak tree issuing from a human head in the style of a green man , another has a cross , a dragon and a female effigy , while others have shield and sword motifs . Two contain inscriptions in Norman @-@ French , identifying the deceased . The remaining lids have simpler incised patterns , mainly decorated crosses . The headstones contain crosses . Most of the coffins were sunk into the ground , with the lid at the level of the floor , although a few were found within the walls . Only three stone coffins for children were discovered . These lay in a group , together with a coffin containing a male skeleton , in the vestibule leading to the enlarged chapter house . The most prestigious type of coffin was tapered towards the feet , with the head end carved externally to a hemi @-@ hexagonal shape . Another sign of higher status was the provision of an internal " pillow " for the head .

A total of 144 graves was excavated ; they contained 130 articulated skeletons in a suitable condition for examination . Of these , 36 were well @-@ preserved , 48 were in a fair condition and 46 were poorly preserved . Males out @-@ numbered females by a ratio of three to one , an expected ratio in a monastic site . Most of the males had survived into middle age (36 ? 45 years) to old age (46 years or older) , while equal numbers of females died before and after the age of about 45 years . One female death was presumably due to a complication of pregnancy as she had been carrying a 34 @-@ week fetus . The average height of the adult males was 5 feet 8 inches (1 @.@ 73 m) and that of the adult females was 5 feet 2 inches (1 @.@ 57 m) .

The bones show a variety of diseases and degenerative processes . Six skeletons showed evidence of Paget 's disease of bone (osteitis deformans) . The most severe case of Paget 's disease was in a body buried in the nave in a stone coffin . The lid was carved with two shields , indicating that the occupant had been a knight . One skeleton showed signs of leprosy affecting bones in the face , hands and feet . No definite cases of tuberculosis directly affecting bones were found but in two individuals there were changes in the ribs consistent with their having suffered from tuberculosis of the lungs . The only major congenital abnormality found consisted of bony changes resulting from a possible case of Down 's syndrome . Relatively minor congenital abnormalities of the spine were found in 19 skeletons , ten of which were cases of spina bifida occulta . Other spinal abnormalities included fused vertebrae , spondylolysis and transitional vertebrae . Definite evidence of fractured bones was found in ten skeletons , and evidence of possible fractures was found in three other cases . One cranium contained a large circular lesion which may have been the consequence of trepanning . Other diseases specific to bones and joints were osteoarthritis , diffuse idiopathic skeletal hyperostosis (DISH) , and possible cases of spondyloarthropathy . Three skeletons showed possible evidence of rickets , two had changes of osteoporosis , and three crania had features of hyperostosis frontalis interna , a metabolic condition affecting post @-@ menopausal women . Osteomata (benign tumours of bone) were found in three cases .

Examination of the jaws and teeth gave information about the dental health of those buried in the priory . The degree of wear of teeth was greater than it is at present , while the incidence of dental caries was much lower than it is now , as was the incidence of periodontal disease . A consequence of the wear of the teeth was " compensatory eruption " of the teeth in order to keep contact with the opposing teeth . It was concluded that the people buried in the priory had few problems with their teeth or jaws . Loss of teeth was due to wear of the teeth , rather than from caries or periodontal disease .

= = = Country house = = =

Little archaeological evidence relates to the period immediately after the dissolution , or to the Tudor house built on part of the site . A sawpit was found in the outer courtyard . It is considered that this might date from the early period of the Brookes ' house , or it may have been constructed during the later years of the abbey . The kitchens to the south of the Tudor house and their drainage systems appear to have been used by the Brookes , and according to Brown and Howard @-@ Davis , were possibly rebuilt by the family . The areas previously occupied by the cloisters and the guest quarters were probably used as middens . Few archaeological findings remain from the Georgian house , apart from a fragment of a wall from the south front , and the foundations of the north wing . The much @-@ altered medieval undercroft still stands , with its Norman doorway and Victorian replica , barrel vaulting , wine bins , and blind arcading in the former outer parlour .

= = = Artefacts from the buildings = = =

A large number of tiles and tile fragments that had lined the floor of the church and some of the monastic buildings were found in the excavations . The oldest tiles date from the early 14th century . The total area of tiles discovered was about 80 square metres (860 sq ft) , and is " the largest area of a floor of this type to be found in any modern excavation " . The site has " the largest , and most varied , excavated collection of medieval tiles in the North West " and " the greatest variety of individual mosaic shapes found anywhere in Britain " . The tiles found made a pavement forming the floor of the choir of the church and the transepts . The chancel floor was probably also tiled ; these tiles have not survived because the chancel was at a higher level than the rest of the church , and the tiles would have been removed during subsequent gardening . A dump of tiles to the south of the site of the chapter house suggests that this was also tiled . In the 15th century a second tile floor was laid on top of the original floor in the choir where it had become worn . The tiles on the original floor were of various shapes , forming a mosaic . The tiles were all glazed and coloured , the main colours being black , green and yellow . Many of them had been decorated by impressing a wooden

stamp into the moist clay before it was fired ; these are known as line @-@ impressed tiles . The line @-@ impressed designs included masks of lions or other animals , rosettes , and trefoils . Other tiles or tile fragments showed portions of trees , foliage , birds and inscriptions . In the chapels of the north transept , the burial place of the Dutton family , were tiles depicting mail , thought to be part of a military effigy , and tiles bearing fragments of heraldic designs . The tiles from the upper (later) pavement were all square , and again were line @-@ inscribed with patterns forming parts of larger designs . A related discovery at the excavation was the kiln in which most of the tiles on the site were fired .

The excavations also revealed stones or fragments of carved stone dating from the 12th to the 16th centuries . The earliest are in Romanesque style and include two voussoirs decorated with beakheads (grotesque animal heads with long pointed bird @-@ like beaks) . Other stones dating from the 12th century are in Gothic style ; they include a capital decorated with leaves and a portion of the tracery from a rose window . Many of the stones from the 13th century were originally part of the cloister arcade , and had been re @-@ used to form the core of a later cloister arcade . They include stones sculpted with depictions of humans and animals . The best preserved of these are the heads of two canons , each wearing a cowl with the tonsure visible , the head of a woman with shoulder @-@ length hair , parts of a seated figure holding an open book , and a creature that might represent a serpent or an otter . There are numerous fragments dating from the 14th and 15th centuries . These include portions of string courses , tracery , corbels , window jambs , and arch heads . At least three of the corbels were carved in the form of human heads . Over 1 @, @ 500 fragments of painted medieval glass were found , most of it in a poor condition . These show that the glazing scheme used in the priory was mainly in grisaille (monochrome) style . Almost 1 @, @ 300 fragments of glass from later periods , and nearly 1 @, @ 150 sherds of ceramic roof tiles were also found .

= = = Artefacts from daily life = = =

Some 500 fragments of pottery were found dating from the medieval period . Most of these were parts of jars , jugs or pipkins and were found in the area of the kitchen range . Most of it was produced locally , although 13 sherds of Stamford Ware , fragments of two jugs from North France , and two small pieces of Saintonge pottery have been identified . Only a few wooden bowls were recovered . Much more pottery was found dating from the post @-@ medieval period and later . Again most of this had been manufactured in England , especially in Staffordshire . Fragments of pottery from abroad included pieces from a Westerwald mug , a jug from Cologne and items of Chinese porcelain . The excavations produced over 4 @, @ 000 sherds of glass , dating from the 12th to the 20th centuries , but only 16 of these came from the period before the dissolution . A total of 1 @, @ 170 fragments from clay tobacco pipes were found , dating from about 1580 to the early 20th century .

Six medieval coins were recovered , the earliest of which was a silver penny of John from the early 13th century . Coins from later periods were a silver threepence from the reign of Elizabeth I and a silver penny from Charles I. Only low @-@ denomination coins were found from the 18th century and later , including a 10 @-@ pfennig piece from Germany dated 1901 . Two silver spoons were recovered , one of which was dated 1846 from the hallmark . Objects made from copper alloy were found , many of which were associated with personal adornment and dress including brooches , buckles , and buttons . Also found from this period was a small simple chape (scabbard tip) , and part of a skimmer that had been used in the kitchen . Artefacts made from iron , other than nails , were again mainly items of personal adornment and dress . Other identifiable iron items from this period included keys , two possible rowel spurs (spurs with revolving pointed wheels) , and about 12 horseshoes .

Nearly 2 @, @ 000 fragments of lead were found , 940 of which were droplets of melted metal , some of these being a consequence of the fire in 1236 . One of the earliest artefacts was a papal bulla dating from the rule of Pope Clement III (1187 ? 91) . Two other possible seals were discovered . A total of 15 lead discs were recovered , some of which were inscribed with crosses .

Two of these were found in graves , but the purpose of the discs has not been reliably explained . The other lead artefacts from this period were associated with the structure of the buildings and include fragments of kame (the lead used in leaded windows) , ventilator grills , and water pipes . Leather fragments almost all came from shoes , and included an almost complete child 's shoe dating from the late 16th or the 17th century . Another find was a small gemstone , a cabochon (polished) sardonyx .

= = Present day = =

Norton Priory is considered to be " a monastic site of international importance " and is " the most extensively excavated monastic site in Britain , if not Western Europe " . It is open to the public and run by a charitable trust , the Norton Priory Museum Trust . The Trust was founded in 1975 and the museum was opened in 1982 . The Trust owns and maintains many of the artefacts found during the excavations , and has created an electronic database to record all the acquisitions . In addition , it holds records relating to the excavations , including site notebooks and photographs . The area open to the public consists of a museum , the standing archaeological remains , an area of garden and woodland , and the walled garden of the former house .

= = = Museum = = =

The museum contains information relating to the history of the site and some of the artefacts discovered during the excavations . These include a model of the church and the monastic buildings as they are thought to have appeared in their final form , carved coffin lids , mosaic tiles , and domestic items such as buttons . In a coffin lies one of the skeletons showing signs of Paget 's disease of bone . Standing in the museum is a reconstruction of the cloister arcade as it had been built following the fire of 1236 . It consists of moulded pointed arches with springer blocks , voussoirs and apex stones , supported on triple shafts with foliate capitals and moulded bases . Above the capitals , at the bases of the arches , are sculptures that include depictions of human and animal heads . The human heads consist of two canons with hoods and protruding tonsures , other males , and females with shoulder @-@ length hair . In one spandrel is a seated figure with an outstretched arm holding a book . Other carvings depict such subjects as fabulous beasts , and an otter or a snake .

A separate purpose @-@ built gallery contains the medieval sandstone statue of Saint Christopher , which is considered to be " a work of national and even international importance " . Saint Christopher was associated with the abbey because of its proximity to the River Mersey and the dangers associated with crossing the river . The statue shows the saint wading through fish @-@ filled water carrying the Christ @-@ child on his shoulder . It has been dated to about 1390 , it is 3 @.@ 37 metres (11 @.@ 1 ft) tall , and was once painted in bright colours . The gallery also contains a three @-@ dimensional representation of the statue as it is believed it would have originally appeared .

= = = Archaeological remains = = =

The archaeological remains are recognised as a Grade I listed building and a scheduled ancient monument , and are considered to be the most important monastic remains in Cheshire . They consist of the former undercroft and the foundations of the church and monastic buildings that were exposed during the excavations . The undercroft stands outside the museum building . It is a single @-@ storey structure consisting of seven pairs of bays divided into two compartments , one of four and the other of three bays . It is entered through the portico added to the west front of the country house in 1886 by way of a pair of arched doorways in Norman style . The doorway to the right (south) is original , dating from the late 12th century , while the other doorway is a replica dated 1886 . The older doorway has been described as " the finest decorated Norman doorway in Cheshire " . It is in good condition with little evidence of erosion and Greene considers that this is

because it has always been protected from the weather . The portico leads into the four @-@ bay compartment . This has a tiled floor and contains a medieval @-@ style fireplace . The roof is ribbed vaulted . On the east wall is a two @-@ arched doorway leading to the former cloisters . To the north another archway leads to the three @-@ bay compartment . This also has a tile floor and contains the brick wine bins added in the 1780s . The roof of this compartment has groined vaults . The undercroft also contains a bell mould , reconstructed from the fragments of the original mould found in the excavations .

At the northern end of the undercroft is the passage known as the outer parlour . This has stone benches on each side and elaborately carved blind arcades above them . The arcades each consist of two groups of four round @-@ headed arches with capitals , free @-@ standing columns and bases that are set on the benches . The capitals and mouldings of the arches are decorated with a variety of carvings , the capitals being predominantly late Romanesque in style and the arches early Gothic . The carvings include depictions of human heads , stiff @-@ leaf foliage and animals .

= = = Grounds = = =

The 38 acres (15 ha) of grounds surrounding the house have been largely restored to include the 18th @-@ century pathways , the stream @-@ glade and the 19th @-@ century rock garden . The foundations exposed in the excavations show the plan of the former church and monastic buildings . In the grounds is a Grade II listed garden loggia in yellow sandstone , possibly designed by James Wyatt . At its front are two Doric columns and two antae , and above these is a cornice with a fluted frieze . The side walls are built in stone , and the back wall is constructed internally of stone and externally of brickwork . Also in the grounds are several modern sculptures , and a sculpture trail has been designed in conjunction with these . In the 1970s the fragments of the mould found in the bell pit were re @-@ assembled and used to create a replica of the bell , which was cast in Widnes and now stands in a frame in the grounds . This was opened at a ceremony performed by Sir Bernard Lovell in 1977 . A herb garden was developed as part of the BBC 's Hidden Garden programme . This seeks to re @-@ create a herb garden as it would have been during the medieval period , and its plan is based on herb gardens in other monastic sites . The plants grown are those reputed to be of value in treating the diseases revealed in the excavated skeletons .

The gardens also include a woodland gardens with summer house , a stream glade , a wild @-@ flower meadow and an orchard . The gardens are promoted by the Campaign to Protect Rural England .

= = = Walled gardens = = =

The 3 @. 5 acre (1 ha) walled garden was restored in the 1980s . It includes an orchard , fruit and vegetable gardens , ornamental borders and a rose walk , as well as the national collection of tree quince (*Cydonia oblonga*) , with 20 different varieties . Close to the walled garden is a Grade II listed ice house , probably dating from the 18th century , which is constructed in brick covered with a mound of earth . The entrance is surrounded by stone walls , from which a tunnel leads to a circular domed chamber .

= = = Current activities = = =

The museum is a visitor attraction . It arranges a series of events for the general public throughout the year , including guided tours , family fun days and concerts . Temporary exhibitions are held in its gallery , which may include art works or displays of historical material . Its educational programme is aimed at all ages ; it includes workshops for the general public , and courses focusing on formal and informal aspects of children 's education . An outreach programme is intended for individuals and groups in the community . Since its opening , the museum has won awards for its work in tourism , education , outreach and gardening . In 2004 the museum 's Positive Partnerships project , in which people with learning disabilities worked alongside museum staff , was a finalist in

the Gulbenkian Prize for museums and galleries . In August 2014 the museum received a grant of £ 3 @. @ 7 million from the Heritage Lottery Fund to develop its facilities .