# Fragments of a 13th-century choir screen at Dundrennan Abbey 

Mary Markus*


#### Abstract

The Cistercian Abbey at Dundrennan (NX747 474) has a very large collection of ex situ carved and moulded stones. While this collection was being catalogued (2003-6), a group of about 20 pieces, most of them of a substantial size, were found to be related and are now stored in one of the vaults along the west side of the cloisters at Dundrennan. ${ }^{1}$ The purpose of this paper is to demonstrate that these fragments came from a two-sided screen with miniature vaults and a processional doorway, to discuss sources and to date the screen.


## INTRODUCTION

The problem of identification of these fragments as being pieces from a screen was clarified as early as 1894 (Dalrymple, MacGibbon \& Ross 1894, 55-96). In a short commentary accompanying a set of drawings, headed 'Plan and Elevation of Ruined Screen', MacGibbon and Ross noted the presence of 'a number of fragments carved with Gothic mouldings ... placed loosely against the south wall of the nave' (ibid, 96, and plate XV). ${ }^{2}$ Their drawings illustrate how the screen might have been configured, showing it to be a two-sided structure, with a narrow passageway between the sides, and miniature vaults spanning across. This understanding of the fragments may not have prevailed for long, since only two years later the authors referred rather more vaguely to the 'numerous portions of cusped and carved work are to be seen piled up in the nave, which may be fragments of [a fine monument in the choir], or some other ruined structure of the same nature' (MacGibbon \& Ross 1896, vol 1, 395). It may be that the possibility of the fragments having come specifically from a screen was one
about which the authors had become less certain. In 1914, however, the screen interpretation was repeated in two separate publications, but that year seems to have been the last point at which these fragments were considered in this manner. ${ }^{3}$

It is perhaps significant that when the above accounts were being written, the stone fragments were lying out in the open, against the south nave wall. It is possible that this interpretation became unclear when they were removed to their next location, probably to the vaults in the west range of the cloister, and was eventually lost. ${ }^{4}$ During the process of cataloguing the ex situ stones at Dundrennan, all the screen fragments were collected into the southernmost vault where they can now be seen. ${ }^{5}$ However, with the decreasing certainty during the late 19th and early 20th century that the fragments came from a screen, the possibility that they came from another structure should be examined.

The dating of the fragments, which is discussed in more detail below, places them in the third quarter of the 13th century, more or less contemporary with Dundrennan's

[^0]chapterhouse. If these fragments came from the chapterhouse rather than from a screen, they would almost certainly have formed the canopies of the stalls. ${ }^{6}$ Given the width of a complete arcade section, there would have been two stalls below each one, with a vault running continuously above. Looking at contemporary chapterhouses, it is difficult to find parallels for this. At York Minster, for example, the chapterhouse, which dates from the 1280s, has a row of arcading above the stalls, and although these have miniature vaults above, these are clearly modular, isolating the space above the stall so that each is seen as distinct from its neighbours. ${ }^{7}$ The chapterhouse arcades project from the plane of the wall, with three miniature gables separated by narrow, sharply-pointed gablets above each stall. The effect is sculptural
and very far removed from the simple planes of the Dundrennan arrangement.

In terms of functionality, the stone fragments do not fit easily with the chapterhouse arrangement. Going by the dimensions of the vault panels, the stalls would have been rather deep - approximately 71 cm or 28 in - which would caused inconvenience in a chapterhouse setting, where good visibility would have been an important consideration. Not only would the depth of the stalls have proved problematic, so also would the size of the columns which would have supported the arcades. The dimensions of these can be ascertained from the bases of the arcades, from which it can be seen that they would have been about 20 cm in diameter. This sizing would again have obstructed views inside the chapterhouse, and the preference would have


ILLus 1 Dundrennan Abbey choir screen, arcade fragments


ILLUS 2 Dundrennan Abbey choir screen, arcade outer face
been for more slender columns, as at York for example.

Finally, it has been noted that in the 1890s and again in 1914, the stones were described as lying against the south nave wall. This lends weight to their likely original function as screen fragments. It is hard to see why, if they had originally come from the chapterhouse, they would then have been moved to the nave. If they had come from the chapterhouse and were later moved, a more convenient storage location would have been in one of the vaults opposite, where they do now in fact lie.

It seems more likely, therefore, that these fragments did indeed come from a screen, and it is important to establish how, in a Cistercian context, such a screen would have been used
and accommodated. In some arrangements, such as arises at Fountains Abbey, the pulpitum, separating the monks' choir from the bays to the west, would have been a substantial stone structure, often extending into the nave, as at Dundrennan. At Fountains, the choir stalls would have returned across the east side of the screen, forming an enclosed space. The lower sections of the screen would therefore have been solid, with open arcades above to allow services to be heard. To the west of this was an area for sick or infirm monks, and beyond there was a second less substantial rood screen separating this area from the lay-brothers' choir stalls to the west of it. Elsewhere, as has been argued for Tintern Abbey, there were again two screens, but here the eastern screen was relatively insubstantial,
while the screen to the west was a large, two sided structure with vaults above the internal passageway. ${ }^{8}$

## THE ORIGINAL FORM OF THE SCREEN

The majority of the screen fragments are worked on both sides, and in a very complex manner. The stones fall into two broad groups, comprising arcades and vault panels. ${ }^{9}$ Many of the stones are damaged, and form just part of an arcade or vault, while a few can be seen to come from the same piece of stone. For example, DDN/scr/20 comes from the right-hand upper section of DDN/scr/3, and DDN/scr/13 and DDN/scr/14 form part of the spandrel of one arcade stone (illus 1). Examination of one of the more complete arcades (eg DDN/scr/ $6 a+b$, which is set up along the back wall of the vault),


Illus 3 Dundrennan Abbey choir screen, arcade back surface
clarifies the way in which it would have been incorporated into the screen (illus 2, 3, 4c). The outer face contains an encircled trefoil in the spandrel, with one side of a heavily-moulded cusped arch on either side. These rich mouldings continue around each side of the stone to meet the back surface, which is articulated by three miniature ribs which die into the base, with a central, vertical rib and two flanking ribs running diagonally to the upper edge. This back surface is worked in a manner that required great precision, since it curves across both its height and width. The vertical curve means that the panel splays outwards towards its upper edge, while the horizontal curve is designed so that the panel is at its thickest at its centre line (that is, the position of the centre rib).

Most of the screen fragments are worked in medium/coarse-grained sandstone, of a noticeably pink colour. ${ }^{10}$ However, two stones with rather particular treatment - DDN/scr/7, which is an arcade from one end of the screen, and DDN/scr/ $18 \mathrm{a}+\mathrm{b}$, which may have once flanked a doorway in the screen - are worked in a different type of stone. Both these stones are discussed in more detail below, but it may be that their particular function within the screen resulted in their having been sourced elsewhere.

The relationship between the arcades and the vaults is immediately apparent when the dimensions are scrutinized. Allowing for some tolerance for mortar and a degree of error, the width of an arcade is twice that of the most complete vault panel now remaining: DDN/ $\mathrm{scr} / 15$, which is 53 cm wide (illus 5 ). DDN/ $\mathrm{scr} / 1$ and DDN/scr/5, which are the only two arcades with unbroken widths, are 107 cm wide. So it can be seen that there would originally have been two vaults set above each bay of the screen, with the shorter edges resting on the two parallel rows of arcades (illus 6). Allowing for a degree of overlap where each end of the vault would have been attached to the arcade, this would have provided a narrow passageway between the two sides of the screen of 61 cm width. ${ }^{11}$ Damage to the three remaining vault
panels means it is not immediately clear how they would have been supported. However, the deep mortices cut in upper surfaces of many of the arcade stones would have accommodated iron dowelling. Some of these mortices occur at the ends of the upper surfaces, and would

(b)


ILLUS 4 Dundrennan screen profile drawings: (a) DDN/scr/2; (b) DDN/scr/4; (c) $\mathrm{DDN} / \mathrm{scr} / 6 \mathrm{a}+\mathrm{b}$; (d) $\mathrm{DDN} / \mathrm{scr} / 1$

DDN/scr/7 is an abbreviated version of the other arcades, being worked flat along its righthand edge (illus 8 ). It is worked in a coarsegrained sandstone which is noticeably paler than that used for the other arcades. Possibly the end sections of the screen, which may have been the last to be fabricated, came from a different section of the quarry. In any case, it is clear that this arcade has not been cut down or damaged, and was originally intended to be a reduced version of the other arcades since the encircled trefoil is smaller than in the other examples, enabling it to be contained in the shorter section of spandrel available. The back surface is worked with a single miniature rib which runs behind the curved edge of the springer, again showing the shorter design to have been intentional. This stone must therefore have abutted a pier at one end of the screen. There may originally have been a similar arcade at the other end of the screen, also abutting a pier, although, if there was a staircase attached to
have been used to strengthen the junction of one section of arcading to another. Other mortices occur towards the centre of the upper surfaces, and these would certainly have been involved in the provision of a secure fixing for the vaults.
the screen, this would have been placed at the other end, and would probably have required more detailed adjustments to the screen arcades abutting it than simply creating a shorter version. ${ }^{12}$ The staircase turret giving access to


ILlus 5 Dundrennan Abbey choir screen, vault panel
the upper level of the Beverley reredos is set at the north end, and here the screen masonry extends over it. Southwell and Lincoln each have two staircases, but these are placed on either side of the central doorways, contained within the thickness of the screens, as at Melrose, and are not therefore expressed externally. ${ }^{13}$

## THE ELEVATION

The arcade section of the screen was clearly originally intended to be set on sections of column shafts and above a solid structure. It could therefore have been a small-scale and early version of the type of screen found, for example at Exeter cathedral. Dated c1318-25, this very deep screen has a solid east wall and an arcaded west wall, with vaulting over. ${ }^{14}$ So
at Dundrennan, the arcades could have been set above a solid wall on the east side, and on columns on the west, thus providing an effective screen between nave and choir, with the openwork nature of the arcade allowing liturgical proceedings to be heard in the nave. ${ }^{15}$ The later screen at Tintern, dated late 1320s or c 1330, was of this design, but was considerably larger and more elaborate. ${ }^{16}$ At Dundrennan, however, no sections of column shaft relating to the screen arcades remain in its large carved stone collection. Again, this may be due to nonsurvival, but if not, another arrangement would see each of the two rows of arcading set on a solid substructure, with stalls against the east side, and altars against the west.

The simple geometric forms used in the majority of Dundrennan's arcade spandrels, with an encircled trefoil in each, suggests a later


ILLUS 6 Dundrennan screen elevation and vault design


ILLUS 7 Dundrennan screen - two arcades


Illus 8 Dundrennan Abbey choir screen, end arcade

13th-century date. The tracery of Sweetheart Abbey's east window and choir windows, dated post 1270, shows similar forms, and moreover this Cistercian foundation was the daughter house of Dundrennan. ${ }^{17}$ The probable closeness of dating between the east window tracery and the likely date of the Dundrennan screen suggests a transfer of ideas between the two abbeys. Since the screen was a relatively small-scale building project, compared with Sweetheart Abbey, it is probable that the abbey influenced the screen elevation rather than vice-versa.

The similarities between the screen fragments and Sweetheart Abbey continue when the moulding profiles are examined. One prominent feature of the arcade profile is the
use of a sequence consisting of a filleted roll, hollow chamfer and a beaked roll (illus 4 b ; 4 c ; $9 \mathrm{~b} ; 9 \mathrm{c}$ ), and this also occurs in, for example, the arch of Sweetheart's south-east doorway. ${ }^{18}$ Apart from the prevalence of this sequence in the screen arcade stones with trefoils in the spandrels, this feature also permits the association of DDN/scr/21 (discussed in more detail below), with the screen, despite several obvious differences. On this particular stone, the sequence occurs on each side, forming the main element of the moulded arch (illus 9c). Other arcade stones appear to have been intended for specific locations within the screen. DDN/ $\mathrm{scr} / 2$ is moulded in the usual manner, with three miniature ribs on the back surface, but the outer face is simply worked flat (illus 4a). In the case of DDN/scr/4, it is the back surface which is worked flat, and the outer face and sides moulded as usual (illus 4b). For each of these examples, it is likely that another feature was to be accommodated, possibly a choir stall against $\mathrm{DDN} / \mathrm{scr} / 2$, and a feature associated with the passageway of the screen, perhaps a staircase, beside DDN/scr/4.

## TWO ARCADE FRAGMENTS

There are two arcade fragments which differ significantly from the rest and merit more detailed discussion: DDN/scr/18a+b and DDN/ scr/21 .

## $D D N / s c r / 18 a+b$ (illus 9b, $10 \& 11$ )

The stone is a very elaborately carved section of a springer, one end of which is broken, while the other is worked flat. The outer face is carved in low relief with a concave circle containing further detailed carving, with four bracelet forms separated fleurs-de-lis. This form of decoration can be seen in grave-slabs of the 13th and 14th centuries, and is particularly close to a slab from Keills (Knapdale). This stone has a cross with open-ended circles in the head. ${ }^{19}$ At St Bees Priory, Cumbria, among the
impressive collection of tomb slabs, are a number of examples of bracelet head crosses. Dating from the 13th century, some of these are simpler than the Dundrennan example, while others have less naturalistic forms, such as lozenges, separating the bracelets in the head.

As with most of the other arcades, the back surface splays outwards towards its upper edge, and has the remains of three miniature ribs. Although only one example of this highly decorated fragment now remains, when Dalrymple,McGibbon and Ross recorded the stones, they noted that there were two stones with this very ornate design. The authors speculated that these could have been set on either side of a processional doorway, and this does indeed seem a highly probable use for a pair of such ornate arcades. ${ }^{20}$
(a)


(c)


ILLUS 9 Dundrennan screen profile drawings: (a) DDN/scr/15; (b) DDN/scr/18a+b; (c) $\mathrm{DDN} / \mathrm{scr} / 21$
$D D N / s c r / 21$ (illus 9c, $12 \& 13$ )
Superficially, this stone does not appear to be linked to the other screen fragments, which makes it difficult to determine its original position. However, there are a number of similarities which link it to the other arcades, and which therefore requires a discussion of possible locations. Like the other arcades, each side of the stone forms one side of a cusped arch which dies into the base of the stone. As discussed, the mouldings, although not identical, are also related. In addition, this stone
has ribs on the back surface which diverge along the height of the stone and die into the base. Finally, and in keeping with most of the other arcades, the back surface splays outwards in two directions, towards both the centre of the stone and its upper edge. However, this piece also differs in several respects. The first and most obvious difference is that the outer face, rather than being worked with an encircled trefoil in the spandrel, has a pinnacle carved in low relief. This has a small, trefoiled arch at its base, with a miniature crocketed and finialled gable containing a pointed trefoil above that.

The pinnacle itself has an angled surface between its own rows of crocketing, and its upper edge is worked flat. Originally, this would have been topped with a finial carved on the adjacent piece of stone.

Another major difference between this arcade and the others is that this piece does not have a horizontal moulded upper edge. Instead, the curved sides are terminated lower down, and each has a canted end, which would


Illus 10 Dundrennan Abbey choir screen, arcade fragment
base. The central rib is broken at its upper end, but appears to have been further subdivided, to form two additional ribs, also worked with filleted roll mouldings.

The most likely location for such a stone would be between a pair of niches, each with its own miniature vault. The stone would have been set on the outer plane of the niches, with the pinnacle facing outwards, and the ribs on the back surface abutting those of the miniature vault. This stone must have been set between two niches, and there may originally have been a series of them, as at Southwell or Lincoln for example. In both these screens, and as argued in the Dundrennan example, the niches are vaulted. ${ }^{21}$

## THE VAULT DESIGN

There are only three fragments of the vault panels remaining, DDN/ scr/15-17, of which only one, $\mathrm{DDN} / \mathrm{scr} / 15$, is more or less complete (illus 5 \& 9a). This example shows that each panel had a tierceron vault. ${ }^{22}$ Using this vault panel as a template, and allowing two such panels over each bay of the arcade below, a system of star-shaped or 'stellar' vaults emerges, one of the main characteristics of which is the breaking down of bay divisions (illus 6). In Scotland, early star-shaped vaults occur in Glasgow cathedral's crypt of the 1240 s. Complex vaults over the bay to the west of the original site of St Kentigern's tomb, and above the Lady chapel, form a network of ribs (illus 14). ${ }^{23}$ Each of these vaults has a central column supporting the vault, and in this respect the design is closer to


Illus 11 Dundrennan Abbey choir screen, detail of arcade fragment
the single centralized space of a chapterhouse than to the linear design in the screen. In the bays around these vaults, tri-radial ribs, with a Y-shaped form, are used to vault the complex spaces below. ${ }^{24}$ For the purposes of this paper, the important aspect of both types of vault is that they have the effect of separating the vault design, visually, from the elevation below. Although the screen vault is on a small scale, its layout can be considered as a development of the Glasgow crypt vault. Where a stellar vault covers a centralized space, it is simply being used to enhance or strengthen the inherent characteristics of such a space, with its absence of clear bay divisions. A linear arrangement of stellar vaults, on the other hand, indicates a deliberate move away from, and contrast with,
the strict bay divisions that would normally be a consequence of the elevation below.

Closer links can be made between Dundrennan and Glasgow when the latter's crypt staircase vaults, built after the crypt vaults themselves, possibly in the late 13th century, are examined. ${ }^{25}$ These occur over two bays, above the landings of the two staircases between the transepts and the crypt (illus 15). Although the ridge rib in these vaults does not extend to the wall, the fact that the vaults are two bays long marks a move away from a centralized arrangement, towards the more linear version at Dundrennan. Elsewhere in Scotland, at Elgin Cathedral, tierceron ribs are used over the choir aisles, dated after 1270, and at Brechin Cathedral, tiercerons occur in


Illus 12 Dundrennan Abbey choir screen, niche fragment, outer face
of early to mid-13th century there is an example of this, which may have paved the way for the unifying features found in the screen vault. The chapterhouse springers, and the remains of the diagonal ribs over the north and central bays of the north transept have a similar profile. Nothing now remains of the chapterhouse vaults, or of the upper parts of the south, east and north walls, and the west wall has been partially rebuilt. However, the six remaining column bases show that it must have been a large, rectangular, three-aisled structure of 12 bays. Vault springers in the corners at each end of the west wall suggest the use of four-part vaults, so that the chapterhouse would
the tower, possibly dated after $1351 .{ }^{26}$ Of the three, Elgin is the closest to Dundrennan's vault, with the use of a tierceron rib on all four sides of the vault-bay, and with a linear arrangement. Glasgow's vaults include lierne as well as tierceron ribs, although the overall design is still close to the screen. Brechin's vaults are more complex, with a double set of tiercerons on each side of the vault and are set above a single bay. Taking the rather geometric design of the screen's elevation into account, it would be likely to be closer in date to Elgin (and maybe Glasgow) than to Brechin, and this reinforces the 1270s date of the screen.

Links have already been made between the type of vault found in Glasgow Cathedral's crypt, and buildings of the Cistercian order. ${ }^{27}$ These buildings are characterized by a use of unified spaces, and in Dundrennan's chapterhouse


Illus 13 Dundrennan Abbey choir screen, niche fragment, back surface


Illus 14 Glasgow Cathedral crypt, vault over Lady Chapel


Illus 15 Glasgow Cathedral crypt, vault over north staircase landing


Illus 16 Dundrennan Abbey chapterhouse, north-west corner
have resembled a hall-church originally, with three aisles of equal height (illus 16). ${ }^{28}$ Similar but simpler spatial arrangements occur in earlier Cistercian foundations of Clairvaux, Citeaux and Fontenay (all dating to the first half of the 12th century) which also have hall-like vaulted spaces. ${ }^{29}$ A later English example (late 12th century) is Buildwas Abbey chapterhouse, with a vault of nine bays supported by four freestanding columns and attached springers. ${ }^{30}$

Of course, the screen's vault-ribs are decorative, not structural, and were not in a highly-visible location. These two factors alone would have been conducive to experimentation. Later screens, eg at Exeter Cathedral, c 1318-25, the Lincoln and Southwell screens, and the Percy reredos at Beverley Minster, have structural ribbed vaults. The Exeter example is more complex than Dundrennan, with both lierne and tierceron ribs, but at Beverley, the vault rib design is almost identical. ${ }^{31}$

## SCREEN LOCATION

The sides of the two western crossing piers are flat, apart from a fragmentary plinth near ground level, which indicates that the choir extended beyond them, into the nave ${ }^{32}$ (illus 17). Although the crossing piers are rather fragmentary, with the westerly piers having been rebuilt in parts, the plinths at ground level are built into the masonry of the piers rather than merely abutting it, so are likely to be original. ${ }^{33}$ This indicates that the screen extended beyond the crossing and into the nave.

At this point, it is important to consider the dimensions involved. The space between the two westerly crossing piers with their flattened side surfaces, and excluding the plinth, is 780 cm , and it is assumed that the two piers immediately to the west of them, between which the screen would have been built, were a similar distance apart. The width of an unbroken section of arcade has already been established as 107 cm , while the width of the one remaining shortened arcade ( $\mathrm{DDN} / \mathrm{scr} / 7$ ) from one end of the screen is 61 cm . Assuming that there was originally a similar shortened arcade section at each end of the screen, this would allow for six full arcade stones and two shorter sections at the ends, with the total width of these components being 760 cm . The resulting screen elevation would therefore have been seven bays wide, with three cusped arches on either side of the central opening. ${ }^{34}$ The


Illus 17 Dundrennan Abbey, south-west crossing pier

20 cm of extra width between the two crossing piers not occupied by the screen, could be partly accounted for in the mortar joints between the sections of arcade and at the junction between the screen and the piers. In addition, the presence of a central doorway, with moulded jambs, and perhaps with slightly different treatment of the vault above it, could have increased the screen's
width. Moreover, if there was a staircase to access the upper level at one end of the screen, this too would occupy some extra width.

When the remaining fragments of screen arcade are examined in the context of this layout, it can be seen that there are eleven pieces that clearly form more or less complete arcade stones. Since, as has been discussed, there would
originally have been a second elaborately carved stone similar to DDN/scr/18a +b , this brings the total number of arcade stones to twelve, exactly the number required for the design proposed here. ${ }^{35}$ If this calculation seems a little too convenient, the condition of the stones needs to be taken into account. What is surprising is that none of the stones (except one - DDN/scr/19) show any sign of weathering, and from this it would appear that they were protected from the elements even after they ceased to have a screen function. This suggests that the screen's importance was recognized even after its destruction, and its major elements preserved. ${ }^{36}$ If this was the case, then it might explain why the collection of arcade stones has remained in its entirety. ${ }^{37}$

## CONCLUSION

The stone fragments at Dundrennan provide evidence for what is one of the earliest remaining stone choir screens in Scotland. Its elevation design locates it in the later 13th century, and it is therefore contemporary with nearby Sweetheart Abbey. For its date, the vault design is both adventurous and appropriate to the abbey, where the tendency of the Cistercian order towards unification of spaces, as seen in the earlier chapterhouse, is extended to the stellar, net-like vault of the screen.

## CATALOGUE OF SCREEN FRAGMENTS

## DDN/scr/1 Fragment of screen arcade

Height $\times$ width $\times$ depth: $277 \mathrm{~mm} \times 1064 \mathrm{~mm} \times 246 \mathrm{~mm}$ (11ins $\times 42 \mathrm{ins} \times 93 / 4 \mathrm{ins}$ )

Description: The long, rectangular block is worked in a medium-grained sandstone, with each end worked flat. The back surface is roughly finished and splays outwards slightly towards the upper edge, with the remains of three ribs still visible. These ribs are relatively shallow, and they die into the back surface towards its upper edge. The upper face of the block is worked flat, and has four eroded mortices cut in it, probably intended to receive ironwork, to allow
for a closer junction with adjacent stonework. From the areas of roughly-finished stone at one end of the stone, it would appear that this piece abutted, and was perhaps overlaid by, adjacent stonework. Although the outer face is damaged, with the lower portions broken away, it is clear that this piece originally came from the upper section of an arch springer, with fragments of the tips of two pointed arches flanking the upper part of an encircled figure (originally a trefoil) in the spandrel.

The upper edge of the block is moulded with a roughly worked flat surface, fillet, asymmetric filleted roll, fillet, hollow chamfer, fillet and the flat surface of the spandrel leading to a broken surface.

The profile of one side of the pointed arch at the right-hand end of the stone adjoins the filleted roll on the upper edge, and continues with, on one side, a fillet, hollow chamfer and fillet leading to the flat surface of the spandrel. On the other side, the profile continues with a fillet, hollow chamfer, rectangular offset, fillet, half-roll moulding, broken surface and the reveal leading to the back of the stone.

DDN/scr/2 Fragment of screen arcade
Height $\times$ width $\times$ depth: $442 \mathrm{~mm} \times 600 \mathrm{~mm} \times 235 \mathrm{~mm}$ ( $171 / 2 \mathrm{ins} \times 23^{1 / 2} 2 \mathrm{ins} \times 9^{1 / 4 i n s)}$ )

Description: The upper face of this large, mediumgrained sandstone block is broken, while the lower surface is worked flat. The stone originally formed the springer of a pair of cusped arches, although one of these is broken away. On the lower section of the inner face of the stone, the mouldings of the arches, together with a central rib between them, die into a plain circular base, while, towards its upper edge, the stone splays outwards. The profile varies across the length of the stone, and would originally have been symmetrical. At approximately the midpoint of the stone's length, the profile would have consisted of the central rib, which is moulded with chamfers, flanked on each side by a long chamfered surface. The profile would then have continued on each side with a fillet, chamfer, broad outer fillet, chamfer, and offset leading to the flat outer face of the cusp, chamfer, arch reveal, and another chamfer leading to the outer face of the springer which is worked flat.

## DDN/scr/3 Fragment of screen arcade

Height $\times$ width $\times$ depth: $838 \mathrm{~mm} \times 787 \mathrm{~mm} \times 280 \mathrm{~mm}$ (33ins $\times 31$ ins $\times 11$ ins)

Description: Forming the springer of a pair of arches, and with an encircled trefoil in the spandrel, the piece is worked in a medium/coarse-grained sandstone. Part of the upper right-hand portion of the stone is broken away, but from the remaining upper surface, this edge was moulded, with the upper face worked flat, and on the back of the stone, the edge projects slightly. At the base of the stone, the mouldings of the arches die into a large filleted roll, the underside of which is worked flat. The back of the stone is articulated by three miniature ribs - one centrally placed, and the other two following the curve of the arch on each side - which also die into the base of the stone. This back surface curves outwards slightly in two directions, towards the upper edge and towards the central rib. The cross-section through the upper part of the stone has a symmetrical profile, and the profile consists of the central spandrel flanked on each side by a filleted roll, fillet, hollow chamfer, fillet, cusp spandrel, fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer, a pair of rectangular offsets, ogee, fillet, hollow chamfer, fillet, chamfer, and the arch reveal leading to the back of the stone with the three miniature ribs.

The profile of the upper edge consists of the flat upper surface with the back projecting section, a vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.
( $\mathrm{DDN} / \mathrm{scr} / 20$ comes from the right-hand upper section of $\operatorname{DDN} / \mathrm{scr} / 3$ ).

## DDN/scr/4 Fragment of screen arcade

Height $\times$ width $\times$ depth: $820 \mathrm{~mm} \times 595 \mathrm{~mm} \times 180 \mathrm{~mm}$ ( $32^{1 / 4}$ ins $\times 23^{1 / 2}$ ins $\times 7$ ins)

Description: The left-hand section of this large fragment is broken away, but this originally formed an arch springer, the side of each arch being cusped, and the spandrel worked with an encircled trefoil. Most of the base of the stone is broken away, but the remaining fragment shows that the arch mouldings die into a circular base. Unlike most of the other sections of screen arcade in this group, the back of this piece is worked flat, possibly because it was intended to be set up alongside another architectural feature such as a staircase for access to the top of the screen. A cross-section through the stone is symmetrical, and the profile consists of the arch spandrel flanked on each side by a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet leading
to the cusp spandrel. The sequence continues with a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet, a pair of chamfers meeting at an arris, a quarter-roll with fillet, another fillet, hollow chamfer, fillet and a straight chamfer leading to the flat back surface.

The profile of the upper edge consists of the flat upper surface, a vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.

## DDN/scr/5 Fragment of screen arcade

Height $\times$ width $\times$ depth: $660 \mathrm{~mm} \times 1064 \mathrm{~mm} \times 292 \mathrm{~mm}$ (26ins $\times 42$ ins $\times 111 / 2 \mathrm{ins}$ )
Description: The stone forms the arch springer of a pair of arches, each one being cusped, and its spandrel is worked with an encircled trefoil. The back surface is worked with three miniature ribs - two lateral ribs and one centrally placed - and splays outwards towards the upper edge and towards the central rib. The base of the springer is broken away, but it would originally have been circular, with the arch mouldings and the miniature ribs on the back surface dying into it. The upper edge is worked flat and originally projected beyond the back surface.

The cross-section through the stone is symmetrical, and the profile consists of the arch spandrel (excluding the encircled trefoil), flanked on each side by a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer, fillet, and the cusp spandrel. The profile continues with a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet, a pair of chamfers meeting at an arris, a quarter-roll with fillet, another fillet, hollow chamfer, fillet and a straight chamfer leading to the back surface. The mouldings on the back surface consist of a damaged axial rib (originally formed with chamfers), flanked on each side by a canted flat surface leading to the lateral ribs, which are also formed by chamfers.

The profile of the upper edge consists of the flat upper surface with the back projecting section, a vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.

## DDN/scr/6a+b Fragment of screen arcade

Height $\times$ width $\times$ depth: $830 \mathrm{~mm} \times 980 \mathrm{~mm} \times 292 \mathrm{~mm}$ ( $323 / 4 \mathrm{ins} \times 381 / 2 \mathrm{ins} \times 11^{1 / 2 \mathrm{ins} \text { ) }}$

Description: The stone forms the arch springer of a pair of arches, each one being cusped, and its spandrel is worked with an encircled trefoil. The back surface is worked with three miniature ribs - two lateral ribs and one centrally placed - and splays outwards towards the upper edge, and towards the central rib. The arch mouldings and the miniature ribs on the back surface die into the circular base, leaving just a small fillet to articulate the front, side and back surfaces. A large section of the back surface, and a piece at each end, are broken away, but the upper edge is worked flat and the remains of a projecting ledge is still visible, running across the back of the stone.

The cross-section through the upper part of the stone is symmetrical, and the profile consists of the arch spandrel (excluding the encircled trefoil), flanked on each side by a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer, fillet, and the cusp spandrel. The profile continues with a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet, a pair of chamfers meeting at an arris, a quarter-roll with fillet, another fillet, hollow chamfer, fillet and a straight chamfer leading to the back surface. The mouldings on the back surface consist of the axial rib, which is formed by chamfers, flanked on each side by a canted flat surface leading to the lateral ribs, which are also formed by chamfers.

The profile of the upper edge consists of the flat upper surface, a vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.

## DDN/scr/7 Fragment of screen arcade

Height $\times$ width $\times$ depth: $832 \mathrm{~mm} \times 583 \mathrm{~mm} \times 292 \mathrm{~mm}$ ( $323 / 4 \mathrm{ins} \times 23$ ins $\times 111 / 2 \mathrm{ins}$ )

Description: This large, moulded fragment, which is worked in a coarse/medium-grained sandstone which is noticeably paler than the tone used for the other pieces in this group. Unlike other fragments of the screen arcade, the stone forms approximately two-thirds of an arch springer, with the right-hand side of the stone worked flat, and would have been intended to abut another architectural feature, such as a nave arcade pier. The left-hand arch is cusped, and the spandrel is worked with an encircled trefoil, which is slightly smaller than the others in this group. This difference in scale is related to the abbreviation of the springer. The back surface is worked with a single miniature rib which runs behind the curved edge of the springer, and this surface splays outwards
towards the upper edge, and towards what would have been its centre-line had the springer not been worked flat along its right-hand edge. The rib diverges as it rises towards the upper edge, eventually forming two separate ribs, one of which is now broken. The arch mouldings and the miniature rib on the back surface die into a semicircular base, leaving just a small fillet to articulate the front, side and back surfaces. The upper edge is worked flat and has a projecting ledge running across the back of the stone.

The cross-section through the upper part of the stone (excluding the encircled trefoil) varies across its height, and consists of roll, fillet, hollow chamfer, fillet, the arch spandrel, fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer, fillet, the cusp spandrel, fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer, fillet, two chamfers meeting at an arris, quarter-roll with fillet, short flat surface, hollow chamfer, fillet and a short straight chamfer leading to the back of the stone. The back surface is moulded with lateral rib which divides to form two ribs separated by a splayed surface, each of which is formed by chamfers. Another splayed surface leads to a slightly raised surface - an indication of what would have formed the central rib had the stone not been worked flat along its right-hand side.

The profile of the base of the springer, which, like the arch above it, is worked flat on its right-hand edge, consists of a small fillet, large half-roll with lateral fillet, a roughly-worked section where the rib dies into the base, broken surface, rectangular projection, fillet, hollow chamfer and an ogee.

The profile of the upper edge consists of the flat upper surface, a vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.

## DDN/scr/8 Fragment of screen arcade

Height $\times$ width $\times$ depth: $380 \mathrm{~mm} \times 562 \mathrm{~mm} \times 266 \mathrm{~mm}$ ( $15 \mathrm{ins} \times 22 \mathrm{ins} \times 101 / 2 \mathrm{ins}$ )

Description: The left-hand end of the stone is worked flat, while the other is broken. The outer face would originally have been worked to form the springer of a pair of cusped arches, with an encircled trefoil set in the spandrel. Most of this outer face is broken away however, with only a fragment of the encircled figure, part of the upper edge, and a small section of one arch remaining. The back of the stone is damaged, and would originally have had three miniature ribs - two lateral ribs and one centrally placed - but only one
rib now remains, alongside the remaining fragment of the cusped arch. This back surface would originally have splayed outwards towards both its upper edge and the (now missing) central rib. The upper face of the stone is worked flat, and is roughly finished, with one rectangular mortice remaining above the arch fragment and part of what may have been another mortice beside it. A third mortice would probably have been cut at the other end of the upper edge, now broken away, and these would have been intended to accommodate ironwork to allow a closer fixing to adjacent sections of the screen.

The cross-section through the upper part of the stone varies across its height, and would originally have been symmetrical. The profile originally consisted of the arch spandrel (excluding the encircled trefoil), flanked on each side by a fillet, hollow chamfer, fillet, filleted roll, fillet, and a hollow chamfer leading to the cusp. The profile continues with another hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet, a pair of chamfers meeting at an arris, a quarter-roll with fillet, another fillet, hollow chamfer, fillet and a straight chamfer leading to the back surface. The mouldings on the back surface would originally have consisted of the axial rib, formed by chamfers, flanked on each side by a canted flat surface leading to the lateral ribs, which were also formed by chamfers.

The profile of the upper edge consists of the flat upper surface, a vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.

## DDN/scr/9 Fragment of screen arcade

Height $\times$ width $\times$ depth: $476 \mathrm{~mm} \times 897 \mathrm{~mm} \times 292 \mathrm{~mm}$ ( $183 / 4 \mathrm{ins} \times 35^{1 / 4} \mathrm{ins} \times 11^{1 / 2} \mathrm{ins}$ )

Description: The right-hand end of the stone is worked flat, while the other is broken. The outer face would originally have been worked to form the springer of one bay of the screen, with an encircled trefoil set in the spandrel between the two sides of pointed and cusped arches. The lower portion of this outer face is broken away, but most of the encircled figure, the upper edge, and sections of each arch still remain. The back of the stone has sections of three miniature ribs - two lateral and one central - still remaining, and splays outwards towards its upper edge, and towards the central rib. The upper edge of the stone is worked flat, and does not seem to have projected beyond the back surface.

The cross-section through the upper part of the stone varies across its height, and would originally
have been symmetrical. The profile consists of the arch spandrel (excluding the encircled trefoil), flanked on each side by a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and a fillet leading to the cusp spandrel. The profile continues with another fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet, a pair of chamfers meeting at an arris, a quarter-roll with fillet, another fillet, hollow chamfer, fillet and a straight chamfer leading to a flat surface. The mouldings on the back surface consist of the axial rib, formed by chamfers, flanked on each side by a canted flat surface leading to the lateral ribs, which are also formed by chamfers.

The profile of the upper edge consists of the flat upper surface, a vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.

## DDN/scr/10 Fragment of screen arcade

Height $\times$ width $\times$ depth: $596 \mathrm{~mm} \times 565 \mathrm{~mm} \times 215 \mathrm{~mm}$ ( $231 / 2 \mathrm{ins} \times 22^{1 / 4 \mathrm{ins} \times 81 / 2 \mathrm{ins} \text { ) }) ~(1)}$

Description: The upper section of the springer is broken away, with only the lower section of the cusped arches and spandrel still remaining. The back of the stone has sections of two miniature ribs at the sides still remaining, with traces of the central rib, most of which is broken away, still visible. This back surface splays outwards slightly, towards its broken upper edge and towards the remains of the central rib. The mouldings of both the arches and the ribs die into the base of the springer, which is simply worked with a large roll moulding articulated by small fillets on its front and side surfaces.

The cross-section through this lower fragment of the springer is symmetrical, and varies across its height, with the profile consisting of the arch spandrel (excluding the encircled trefoil), flanked on each side by a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and a fillet leading to the cusp spandrel. The profile continues with another fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet, a pair of chamfers meeting at an arris, a quarter-roll with fillet, another fillet, hollow chamfer, fillet and a straight chamfer leading to a flat surface. The mouldings on the back surface consist of the damaged axial rib, (originally formed by chamfers), flanked on each side by a canted flat surface leading to the lateral ribs, which are also formed by chamfers.

The profile of the base of the stone would also have been symmetrical originally, consisting of a large roll moulding articulated by small fillets on its front, side and back surfaces.

## DDN/scr/11 Fragment of screen arcade

Height $\times$ width $\times$ depth: $760 \mathrm{~mm} \times 567 \mathrm{~mm} \times 305 \mathrm{~mm}$ (30ins $\times 22^{1 / 4} \mathrm{ins} \times 12 \mathrm{ins}$ )

Description: The stone forms the springer of one bay of the screen, with an encircled trefoil set in the spandrel between the two sides of pointed and cusped arches, although the right-hand arch is broken away. Unlike other sections of the screen arcade in this group, the upper edge of this piece, of which only a short length remains, is decorated with low-relief foliage carving (oak leaves?) along its outer face. This upper edge also projects slightly beyond the back surface. The back of the stone has the remains of three miniature ribs two lateral and one centrally placed - and this surface splays outwards in two directions, towards its upper edge, and towards the central rib. Because the height of this arcade springer is slightly less than that of the others in this group, the detailed moulding of the base of the stone is somewhat different also. Part of this lower portion is broken, but the remaining section suggests that the base of the springer was originally simply worked with a large half-roll moulding, with a small fillet on each side, and, instead of another fillet, the lower portion of the rib mouldings on its back surface. The fact that treatment of the springer varies in these respects from others in this group suggests that it was intended for a particular location, perhaps associated with a doorway or niche.

The cross-section through the upper part of the stone varies across its height, and would originally have been symmetrical, consisting of the arch spandrel (excluding the encircled trefoil), flanked on each side by a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and a fillet leading to the cusp spandrel. The profile continues with another fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet, a pair of chamfers meeting at an arris, a quarter-roll with fillet, another fillet, hollow chamfer, fillet and an offset leading to the back surface. The mouldings on the back surface consist of the damaged axial rib, (originally formed by chamfers), flanked on each side by a canted flat surface leading to the lateral ribs, which are also formed by chamfers.

The profile of the base of the springer, which, like the arch above it, would originally have been symmetrical, consists of a damaged half-roll with
fillets articulating the front and side surfaces, and the cluster of three ribs on its back surface.

The profile of the upper edge consists of a flat upper surface, the row of foliage carving, fillet, chamfer, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.

## DDN/scr/12 Fragment of screen arcade

Height $\times$ width $\times$ depth: $352 \mathrm{~mm} \times 973 \mathrm{~mm} \times 282 \mathrm{~mm}$ ( $14 \mathrm{ins} \times 381 / 4 \mathrm{ins} \times 11 \mathrm{ins}$ )

Description: The left-hand end of the stone is worked flat, while the other is broken. The outer face is worked to form the springer of one bay of the screen, with an encircled trefoil set in the spandrel between the sides of two cusped arches, but the lower portion of the stone is broken away. The back surface splays outwards towards its upper edge, and has traces of three miniature ribs still remaining, although the ribs themselves have been mostly broken away. The upper edge of the stone is roughly worked flat, and probably originally projected beyond the back surface, although all that remains of this is a strip of broken stonework.

The cross-section through the upper part of the stone varies across its height and would originally have been symmetrical, consisting of the arch spandrel (excluding the encircled trefoil), flanked on each side by a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and a fillet leading to the cusp spandrel. The profile continues with another fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet, a pair of chamfers meeting at an arris, a quarter-roll with fillet, another fillet, hollow chamfer, fillet and a shallow offset leading to the back surface. Because only the upper section of the stone remains, and since the ribs die into the upper edge, they are rather shallow, (although lower down they would have projected further and would have been formed by chamfers). The profile of this surface consists of the slightly projecting axial rib flanked on each side by a canted flat surface leading to the lateral ribs.

The profile of the upper edge consists of the flat upper surface, a vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.

## DDN/scr/13 Fragment of screen arcade

Height $\times$ width $\times$ depth: $458 \mathrm{~mm} \times 510 \mathrm{~mm} \times 270 \mathrm{~mm}$ (18ins $\times 20 \mathrm{ins} \times 10^{1 / 2}$ ins)

Description: Although both ends of the stone are broken, it can be seen that it originally formed part of the left-hand side of an arcade springer, with part of an encircled trefoil in the spandrel. The lower portion of the outer face is also broken, as is part of the upper edge of the stone, with the remainder of that surface roughly worked flat. The back surface has the remains of one miniature rib carved behind the moulded arch, and splays outwards towards what would have been a central rib, and towards its upper edge. The remaining rib, and the arch mouldings, would originally have died into the base of the stone. The upper edge is roughly worked flat, and has two rectangular mortices cut in it, probably intended to receive ironwork to provide a closer junction with adjacent stonework.

The cross-section through the upper part of the stone varies across its height, and would originally have been symmetrical, consisting of the arch spandrel (excluding the encircled trefoil), flanked on each side by a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and a fillet leading to the cusp spandrel. The profile continues with another fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet, a pair of chamfers meeting at an arris, a quarter-roll with fillet, another fillet, hollow chamfer, fillet and an offset leading to the back surface. The mouldings on the back surface would originally have consisted of the axial rib, which was formed by chamfers, flanked on each side by a canted flat surface leading to the lateral ribs, which were also formed by chamfers.

The profile of the upper edge consists of the flat upper surface, a vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.

DDN/scr/13 and DDN/scr/14 are two fragments of the same arcade.

## DDN/scr/14 Fragment of screen arcade

Height $\times$ width $\times$ depth: $606 \mathrm{~mm} \times 395 \mathrm{~mm} \times 272 \mathrm{~mm}$ ( $23^{3} / 4 \mathrm{ins} \times 15^{1} / 2 \mathrm{ins} \times 10^{3} / 4 \mathrm{ins}$ )

Description: Although both ends are broken, the stone originally formed part of the right-hand side of an arcade springer, with part of an encircled trefoil in the spandrel. The lower portion of the outer face is also broken, as is part of the upper edge of the stone. The remainder of the upper edge is roughly worked flat, and has a rectangular mortice cut in it,
probably intended to receive ironwork to provide a closer junction with adjacent stonework. The back surface splays outwards towards its upper edge, and has the remains of two miniature ribs, one of which runs diagonally behind the moulded arch, with the other worked vertically along what would have been the centre-line of the springer. This rib, and the arch mouldings, would originally have died into the base of the stone.

The cross-section through the upper part of the stone varies across its height, and would originally have been symmetrical, consisting of the arch spandrel (excluding the encircled trefoil), flanked on each side by a fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and a fillet leading to the cusp spandrel. The profile would have continued with another fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet, a pair of chamfers meeting at an arris, a quarter-roll with fillet, another fillet, hollow chamfer, fillet and an offset leading to the back surface. The mouldings on the back surface consist of the axial rib, formed by chamfers, which would originally have been flanked on each side by a canted flat surface leading to the lateral ribs, which were also formed by chamfers.

The profile of the upper edge consists of the flat upper surface, a damaged vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.

DDN/scr/13 and DDN/scr/14 are two fragments of the same arcade.

## DDN/scr/15 Screen vault panel

Length $\times$ width $\times$ depth: $725 \mathrm{~mm} \times 528 \mathrm{~mm} \times 180 \mathrm{~mm}$ ( $281 / 2 \mathrm{ins} \times 20^{3} / \mathrm{ins} \times 7$ ins )

Description: This large and roughly rectangular piece possibly formed one of a series of panels, worked with miniature lierne ribs, which may have been set above the two faces of the screen. The panel is worked in a fine/medium-grained sandstone, and the unbroken sides are roughly worked flat. About one-third of the panel is broken away, but it would originally have been rectangular, with the long sides 790 mm (31in) in length. The soffit is worked with a shallow curve, and the star-shaped vault is formed by longitudinal, transverse, diagonal and lierne ribs, with a central foliage boss. The back of the stone is roughly finished with a flat surface.

Each of the ribs is simply moulded with a small filleted roll, flanked on each side by lateral fillets. The remaining unbroken short edge of the panel is worked with a raised hollow chamfer, and a half-roll moulding runs along the undamaged section of the remaining long edge. Like the detailing on the backs of many of the arch springers in this group, the vault web between the ribs splays outwards in two directions, towards both the longitudinal and transverse ribs.

## DDN/scr/16 Screen vault panel

Length $\times$ width $\times$ depth: $347 \mathrm{~mm} \times 306 \mathrm{~mm} \times 226 \mathrm{~mm}$ ( $133 / 4 \mathrm{ins} \times 12$ ins $\times 9$ ins)
Description: This rectangular piece possibly formed part of one of a series of panels, worked with miniature lierne ribs, which would have been set above the two faces of the screen. The panel is worked in a fine/ medium-grained sandstone, and two adjacent edges are roughly worked flat, while the other two are broken. Although three-quarters of the panel is broken away, it was probably originally rectangular, with the long sides 790 mm (31in) in length. The soffit is worked with a shallow curve, and the panel would have formed part of a star-shaped vault formed by longitudinal, transverse, diagonal and lierne ribs. The back of the stone is roughly finished with a flat surface, and a damaged strip of stone along the unbroken short edge would probably have been worked with a raised hollow chamfer, as appears on the short edge of DDN/scr/5.

## DDN/scr/17 Screen vault panel

Length $\times$ width $\times$ depth: $360 \mathrm{~mm} \times 288 \mathrm{~mm} \times 203 \mathrm{~mm}$ ( $141 / 4$ ins $\times 11^{1} / 2 \mathrm{ins} \times 8$ ins)
Description: This rectangular piece probably formed part of one of a series of panels, worked with miniature lierne ribs, which would originally have been set above the two faces of the screen. The panel is worked in a fine/medium-grained sandstone, and two adjacent edges are roughly worked flat, while the other two are broken. Although three-quarters of the panel is broken away, it was probably originally rectangular. The soffit is worked with a shallow curve, and the panel would have formed part of a star-shaped vault formed by longitudinal, transverse, diagonal and lierne ribs. The back of the stone is roughly finished with a flat surface, and a roughly worked chamfered corner. A damaged strip of stone along the unbroken short edge would probably have been worked with a raised hollow chamfer, as appears on the short edge of DDN/scr/15.

## DDN/scr/18a+b Fragment of screen arcade

Height $\times$ width $\times$ depth: $655 \mathrm{~mm} \times 842 \mathrm{~mm} \times 260 \mathrm{~mm}$ ( $253 / 4 \mathrm{ins} \times 33 \mathrm{ins} \times 10^{1 / 4 \mathrm{ins} \text { ) }}$
Description: The stone is worked with a very elaborately carved section of a springer, one end of which is broken, while the other is worked flat. The outer face is carved in low relief with a concave circle containing further detailed carving, with four bracelet forms separated by palmettes, each of which contains a fleur-de-lis. The lower portion of the outer face is broken, as is part of the upper edge of the stone. The unbroken section of the upper edge is roughly worked flat, with the remains of three rectangular mortices cut in it, intended to accommodate ironwork, possibly to allow for a closer fixing to adjacent stonework. The back surface splays outwards towards its upper edge, and has the remains of three ribs, two of which run diagonally behind each moulded arch, with the third worked vertically along the centre-line of the springer. These ribs, and the arch mouldings, would originally have died into the base of the stone.

The cross-section through the upper part of the stone varies across its height, and is symmetrical, consisting of the arch spandrel with its ornate roundel, which is flanked on each side by the mouldings of the arch, consisting of a chamfer, a filleted half-roll, fillet, hollow chamfer, and a fillet leading to the cusp spandrel. The profile continues with another fillet, hollow chamfer, fillet, hollow chamfer, fillet, filleted roll, fillet, hollow chamfer and another fillet, a pair of chamfers meeting at an arris, a quarter-roll with fillet, another fillet, hollow chamfer, fillet and a chamfer leading to the back surface. The mouldings on the back surface are damaged, but consist of the axial rib which is formed by chamfers, flanked on each side by a canted flat surface leading to the lateral ribs, which are also formed by chamfers.

The profile of the upper edge consists of the flat upper surface, a vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to a flat surface, with the arch spandrel below.

## DDN/scr/19 Fragment of screen arcade

Height $\times$ width $\times$ depth: $420 \mathrm{~mm} \times 440 \mathrm{~mm} \times 230 \mathrm{~mm}$ ( $161 / 2$ ins $\times 17^{1 / 1 / i n s} \times 9$ ins)

Description: The upper part of the stone is broken, with only the lower part of the springer, fragments of the cusped arches and the lower section of the encircled trefoil still remaining. The stone is very eroded, but
the remains of three miniature ribs can still be seen on the back surface, and the base of the springer is worked flat, though damaged, with traces of mortar still adhering. The mouldings of both the arches and of the ribs die into the base.

The cross-section through the upper part of the stone varies across its height, and would originally have been symmetrical. The profile now consists of the arch spandrel, which is flanked on each side by a hollow chamfer, fillet, and an eroded pair of diverging filleted half-rolls. On the right-hand side, the remaining outer face is damaged, while on the left-hand side the profile continues with a pair of fillets meeting at an arris, quarter-roll with fillet, another fillet, and an eroded hollow chamfer leading to the back surface. The mouldings on the back surface are damaged, but consist of the axial rib which is formed by chamfers, flanked on each side by a canted flat surface leading to the lateral ribs, which are also formed by chamfers.

DDN/scr/20 Fragment of screen arcade
Height $\times$ width $\times$ depth: $357 \mathrm{~mm} \times 642 \mathrm{~mm} \times 273 \mathrm{~mm}$ ( $14 \mathrm{ins} \times 25^{1 / 4 \mathrm{ins}} \times 10^{3} / \mathrm{inns}$ )

Description: Most of the springer is broken away, and all that remains on the upper outer faces is part of the flat upper surface, a section of the right-hand arch, and a fragment of the encircled trefoil. One rib remains on the back of the stone, behind the fragmentary righthand arch, and mortices have been cut in the flat upper surface. The mouldings are damaged, but the profile of the right-hand arch consists of part of a filleted roll, fillet, hollow chamfer, fillet, a pair of chamfers meeting at an arris, filleted quarter-roll moulding, fillet, hollow chamfer, fillet, small straight chamfer, offset, and the back surface with its miniature rib, which is simply shaped by chamfers.

The upper edge is damaged, and its profile consists of the flat upper surface, a vertical surface, fillet, asymmetric filleted roll, fillet, hollow chamfer and another fillet leading to the arch spandrel.
(DDN/scr/20 comes from the right-hand upper section of DDN/scr/3).

## DDN/scr/21 Fragment of screen arcade

Height $\times$ width $\times$ depth: $610 \mathrm{~mm} \times 610 \mathrm{~mm} \times 280 \mathrm{~mm}$ (24ins $\times 24 \mathrm{ins} \times 11 \mathrm{ins}$ )

Description: This piece differs in several respects to the other arcade springers. The first, and most
obvious difference is the outer face of the stone, rather than being worked with an encircled trefoil in the spandrel, has a pinnacle carved in low relief. This has a trefoiled arch at its base, with a miniature crocketed and finialled gable containing a pointed trefoil above that. The pinnacle itself has an angled surface between its own rows of crocketing, and its upper edge is worked flat. Originally, this would have been topped with a finial carved on the adjacent piece of stone.

Another major difference between this springer and the others in this group is the fact that, unlike them, this piece does not terminate in a moulded upper edge. Instead, the arches are terminated lower down, and each has a canted end surface, which would have abutted adjacent sections of the moulded arches. Moreover, these arches have a different decorative treatment, with a row of crocketing above each, but they do die into the base, as with the others in this group, and their mouldings, although not identical, are related.

The third important variation occurs on the back of the stone. Whereas the other springers either have miniature ribs, or are worked flat, this piece is more complex, with a series of three filleted rolls, which diverge as they rise from the base. The central filleted roll is broken at its upper end, but appears to have been further subdivided, to form two filleted roll mouldings. In keeping with those springers with miniature ribs on their back surfaces however, the back surface of this springer splays outwards in two directions, towards both the centre of the stone and its upper edge.

A cross-section through the stone consists of the central pinnacle, which is angled about its long axis, flanked on each side by a row of crocketing, the spandrel, and the mouldings of the arch. The arch mouldings consist of another row of crocketing, flat outer face, quarter-roll with broad fillet, another fillet, a pair of fillets meeting at an arris, another quarter roll with fillet, fillet and a flat surface leading to the back of the stone. The profile across the back surface is damaged, with the central section missing. However, on each side of the damaged area, the profile consists of a roll moulding, pair of chamfers meeting at an arris, filleted roll, another pair of chamfers meeting at an arris, and a roll moulding leading to the flat outer sections, behind the moulded arches.

The cross-section through the base of the stone is symmetrical, consisting of an axial fillet flanked on each side by a quarter-hollow, a slightly flattened filleted roll, a small rectangular projection, fillet and a
long and slightly curved chamfer leading to the front of the stone, which is worked with a slightly sunk flat surface (forming the front panel of the central pinnacle).

## DDN/scr/22 Fragment of screen arcade

Height $\times$ width $\times$ depth: $617 \mathrm{~mm} \times 893 \mathrm{~mm} \times 120 \mathrm{~mm}$ ( $241 / \mathrm{ins} \times 35^{1 / 4 i n s} \times 4^{3} / 4 \mathrm{ins}$ )
Description: This large fragment of medium-grained sandstone forms what appears to be an unfinished section of a springer from the choir screen. However, it is not clear why this piece would have been treated in this manner. The damage to several surfaces makes it difficult to ascertain how much of the stone was originally completed, but it appears that the back surface would have been worked in a similar manner to the other springers in this group. Although most of this surface is broken, a small area of a roughlyfinished flat surface suggests that there would have been three ribs on this face, with flat and slightly canted surfaces between the ribs.

The front of the stone has an indication only of the pattern on the other springers, with sections of a cusped arch on each side, and part of the central encircled trefoil. These decorative elements are, however, carved in low relief, with little or no moulded decoration. In fact the only substantial area of moulding occurs on the edge of the left-hand arch, where the fragmentary profile consists of the outer face of the arch/cusp spandrel, a fillet, pair of chamfers meeting at an arris, fillet, half-roll, flat surface and a hollow chamfer leading to the damaged back surface.

## ACKNOWLEDGEMENTS

Professor Richard Fawcett, of the Historic Scotland Inspectorate, and Peter Yeoman, of the Properties in Care Division, Historic Scotland, have been kind enough to read and comment on this paper. Some of their ideas have been incorporated here, and any errors are the responsibility of the author. John Gordon and Joseph Devlin of Historic Scotland's Conservation and Maintenance Department have kindly prepared the drawing of the screen's elevation, and the detailed drawing of the screen arcades. This paper has been sponsored by Historic Scotland. All photographs and drawings are Crown copyright Historic Scotland.

## NOTES

1 The inventory of ex situ carved and moulded stones at Dundrennan commenced in November 2003, and was completed by December 2006 (Markus 2003-6).
2 There are some debatable aspects of their description and interpretation of the fragments, which will be discussed as they arise.
3 RCAHMS 1914, 222; Christie 1914, 104 mentions the carved stones 'placed against the south wall of the nave $\ldots$ a large number of stones, portions of groining, bosses and what has been thought to be part of the choir screen'.
4 The function of these fragments certainly went unrecognized later. Hannah (1935-6, 181-201) discussed a broad range of Scottish screens, but Dundrennan is mentioned only briefly, on 191, where the author notes the flattened western crossing piers.
5 Work is currently underway to convert an adjacent steading, where it is hoped that some of the fragments can be set up on permanent display.
6 During discussions in the course of writing this paper, the possibility that the stone fragments came not from a screen, but from chapterhouse stalls was raised.
7 The York chapterhouse stalls and their vaults are described and illustrated in Bony (1979, 15; plates 90-1).
8 Harrison, Morris and Robinson (1998, 249-50) discuss the Fountains arrangement of screens. Ibid, 177-268: the screen at Tintern is reconstructed, showing it to have returned across the nave, one bay to the west of the crossing. Ibid, 187: the authors show that this very substantial structure was inserted into the late 13th-century nave, replacing an earlier barrier. Robinson (2006, 135; fig 113) shows both the east and west screens at Tintern, as well as those between the nave and presbytery piers.
9 The fragments will be generally referred to as arcades or vaults throughout. Where individual stones are discussed, the accession numbers in the inventory, ie DDN/scr/1 to DDN/scr/22, will be used for identification purposes.
10 An investigation into the stone types used at Dundrennan, andtheir possible sources has recently been carried out by Ray Chadburn (forthcoming). He has concluded that although there is a broad spectrum of sandstone types used in the abbey, most if not all could have been quarried from a
local beach at Netherlaw, approximately half a mile from the abbey.
11 Dalrymple, McGibbon and Ross (1894, in the text accompanying plate XV, give slightly different dimensions for the vault panels. However, DDN/ scr/ 15 clearly shows that the length and width of a typical panel is as given here. Plate XV also shows a different view of the vault arrangement, setting one section of vault above one bay of the screen, with the long sides of the vault resting on the arcade stones. This not only results in a gap between each vault panel, which the authors admit not being able to reconcile in a satisfactory manner, but also disrupts the whole vault design, discussed below. An additional problem with this arrangement is that the passageway between the two sides of the screen would have been rather narrow, being 21 cm wide at best.
12 The other likely position for a stair would be within the screen's thickness, as happens in the 15th-century screen at Melrose Abbey. However, given the width of the passageway between the two sides of Dundrennan's screen ( 61 cm ), it is less likely to have had a staircase in this position.
13 Schwieso 2003-5, 53-5, shows that in parish churches in the south of England rood stairs were significantly more likely to be located on the north rather than the south side of the church.
14 Sekules 1991, 177.
15 This arrangement can take various forms. At Southwell, where there is a combination of blind and openwork traceried gables on the upper level of the screen. Below, on the other hand, the screen is solid. In the 15 th-century screen at Glasgow Cathedral, the remaining lower portion is formed by a solid wall with blind arcading on either side of the door.
16 Harrison, Morris and Robinson 1998, 236.
17 The tracery is illustrated in Fawcett 2002, 111, figure 2.74 (22) and (33).
18 Fawcett 2002, p 102, figure 2.62 (5a, b) illustrates the Sweetheart profile and dates it post-1270).]
19 Steer and Bannerman 1977, 14, fig 2. The authors cite a drawing by T P White, Archaeological Sketches in Scotland, Knapdale and Gigha (1875) as a source, since the stone's whereabouts are unknown.
20 Dalrymple, MacGibbon and Ross 1894, in their description of plate XV, 96.

21 Sekules 1991, p 177 discusses the niche-work on the upper level of the Exeter pulpitum, $c$ 1318-25, containing statues and carved panels. The author also highlights the example at Old St Paul's, probably mid-1320s in date, which had a series of niches containing statues, and cites an early example at Salisbury, dated $c 1260$, which also had statues in niches.
22 Apart from the different orientation of the vault panels given by Dalrymple, McGibbon and Ross 1894, and noted above, their depiction of the vault panels is erroneous in that the panels are shown with tierceron ribs on the long sides only, whereas they actually occur on all four sides of the vault panel.
23 Wilson 1998, 58-9 speculates that these two areas may have been considered as vestibules to the two important areas of Glasgow's inner crypt, and that one reason for using the stellar vault was to provide pilgrims with good visual and physical access to the tomb.
24 Ibid, 61-4, Glasgow's tri-radial ribs are discussed in the context of French Cistercian chapterhouses.
25 Fawcett 2002, 228 dates the vaults, and ibid, 1996, 59, illustrates the vaults over the crypt and staircases.
26 Fawcett 2002, 226, illustrates and dates the Glasgow's crypt vaults, and the Elgin and Brechin vaults, fig $3.100(10-11)$, (3) and (9) respectively.
27 Wilson, 1998, 55-76.
28 Wilson, 1998, 65, considers hall-like spaces, including English Cistercian chapterhouses, as possible precedents for Glasgow's crypt design, but rules them out on the grounds that they are almost all rectangular rather than square in plan.
29 Fergusson and Harrison 1999, 95.
30 Leroux-Dhuys 2006, 158-9.
31 Ackland 1972, 144; Dawton 2000, 120. Melrose Abbey's screen, which is much later, dated after 1385, also has a small tierceron vault over the doorway: Fawcett 2002, 297.
32 Hope 1916-17, 102 notes that in Cistercian churches, it was common for the monks' choir to extend into the nave, due to their use of short presbyteries. Fergusson 1973, 233 reproduces a Ministry of Works plan dated 1934 showing the screen in this location. On plans of the abbey kept in the drawings library at Longmore House, dated from 1934 to at least 1960s, the screen is
consistently shown as being between the piers of the first bay to west of the crossing. Drawings with reference $115 / 114 / 31$, $115 / 114 / 33,115 / 114 / 35$ all show the screen in this position. Various editions of the abbey guidebook reproduce the same arrangement, as does the most recent edition - Richardson 2005, 15. Hannah 1935-6, p 191 notes that a similar arrangement may have existed at Sweetheart Abbey.
33 RCAHMS Galloway, vol 5, Kirkcudbright, 1914, 219; Harrison 1998, 143, 145.
34 Dalrymple, McGibbon and Ross 1894, in the notes accompanying plate XV, also calculate that the screen was seven bays wide.
35 The 11 stones which would have occupied one full arcade bay are as follows: DDN/scr/1-6; DDN/scr/9; DDN/scr/11-12; DDN/scr/13 + 14; $\mathrm{DDN} / \mathrm{scr} / 18 \mathrm{a}+\mathrm{b}$. Of the remaining stones, DDN/ $\mathrm{scr} / 7$ is an abbreviated arcade stone, coming from one end of the screen. DDN/scr/8, DDN/ $\mathrm{scr} / 10$, and $\mathrm{DDN} / \mathrm{scr} / 19$ are relatively small, and each probably came from one of the larger arcade stones listed above. DDN/scr/15-17 are vault panels, and DDN/scr/20 is part of DDN/ $\mathrm{scr} / 3$. DDN/scr/21, as discussed, is an atypical fragment, having come from a niche associated with the screen. Finally, DN/scr/22 is apparently an unfinished fragment, possibly damaged in the course of its manufacture.
36 Unfortunately, the vault panels were not granted the same consideration. Perhaps because of their rectangular shape, they were too easy to reuse.
37 If, however, there were originally more arcade stones than now remain, these could have been accommodated if the screen returned across each end, as has been argued for the screen at Tintern Harrison, Morris and Robinson 1998, 206. There are no remaining stones at Dundrennan that indicate this arrangement, but that may be due to an accident of survival.

## REFERENCES

Ackland, J 1972 Medieval Structure: The Gothic Vault. Toronto.
Bony, J 1979 The English Decorated Style. Gothic architecture transformed 1250-1350. Oxford.
Chadburn, R (forthcoming) Transactions of the Dumfries and Galloway Natural History and Antiquarian Society.

Christie, A H 1914 The Abbey of Dundrennan. Dalbeattie.
MacGibbon, D \& Ross, T 1894 'The Five Great Churches of Galloway: Dundrennan Abbey', in HH Dalrymple Archaeological and Historical Collections Relating to Ayrshire and Galloway X, 55-96.
Dawton, N 2000 'Gothic Sculpture', in Rosemary Horrox (ed) Beverley Minster: an illustrated history, 107-29. Beverley.
Fawcett, R 1996 'Current Thinking on Glasgow Cathedral', in Tim Tatton-Brown and Julian Munby (eds) The Archaeology of Cathedrals, 57-72. Oxford.
Fawcett, R 2002 Scottish Medieval Churches. Architecture and Furnishings. Stroud.
Fergusson, P 1973 'The Late Twelfth Century Rebuilding at Dundrennan Abbey', The Antiquaries Journal 53, 232-43.
Fergusson, P \& Harrison S 1999 Rievaulx Abbey. Community, Architecture, Memory. London.
Hannah, I 1936 'Screens and Lofts in Scottish Churches', Proc Soc Antiq Scot 70 (1935-6), 181-201.
Harrison, S A, Morris, R K \& Robinson, D M 1998 'A Fourteenth-Century Pulpitum Screen at Tintern Abbey, Monmouthshire', The Antiquaries Journal 78, 177-268.
Hope, W 1916-17 'Quire Screens in English Churches, with special reference to the Twelfth-Century Quire Screen formerly in the Cathedral Church of Ely', Archaeologia XVIII (1916-7) 43-110.
Leroux-Dhuys, J-F 2006 Cistercian Abbeys: history and architecture. Paris.
MacGibbon, D \& Ross, T 1896 The Ecclesiastical Architecture of Scotland, vol I. Edinburgh.
Richardson, J S 2005 Dundrennan Abbey. Edinburgh.
Robinson, D M 2006 The Cistercians in Wales: architecture and archaeology 1130-1540. London.
Robinson, D M \& Harrison, S 2006 'Cistercian Cloisters in England and Wales', Journal of the British Archaeological Association 159, 131-207.
Royal Commission on the Ancient and Historical Monuments of Scotland 1914. Galloway, vol 5 Kirkudbright. Edinburgh.
Schwieso, J 2006 'Rood Stairs - an analysis based upon a systematic sample from three English counties', Church Archaeology 7-9 (2003-5), 51-65.

Sekules, V 1991 'The Liturgical Furnishings of the Choir of Exeter Cathedral', in Francis Kelly (ed) British Archaeological Association Conference Transactions, Exeter, 172-9. Leeds.
Steer, K A \& Bannerman, J W M 1977 Late Medieval Monumental Sculpture in the West Highlands. Edinburgh.
Wilson, C 1998 'The Stellar Vaults of Glasgow Cathedral's Inner Crypt and Villard de Honnecourt's Chapter-House Plan: A Conundrum

Revisited', in Richard Fawcett (ed) British Archaeological Association Conference Transactions, Glasgow, 55-76. Leeds.

## UNPUBLISHED SOURCES

Markus, M 2003-6 Dundrennan Abbey. Illustrated inventory of ex situ carved and moulded stones. Report for Historic Scotland.


[^0]:    * Archetype, Historic Buildings Consultancy, 45 Kessington Road, Bearsden, Glasgow G61 2HJ

