Archaeological recording of the Organ Chamber roof of the Town Church, St Peter Port, Guernsey

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#### **Summary statement**

Long term leakage of water (wet rot) through the valley gutter of the roof of the Organ Chamber, plus an infestation of death watch beetle, has caused damage to the constituent timbers. On the advice of Michael Carden, a consultant architect, recording of the fabric was recommended as part of the works to repair the structure. This work was carried out by C K Currie and N S Rushton for CKC Archaeology between 11<sup>th</sup> and 13<sup>th</sup> June 2001.

Archaeological recording of the Organ Chamber (previously the South Chapel) roof during extensive repairs proved to be a useful exercise. Although recording did not begin until the repairs were well underway, the recording revealed new information about the roof. A provisional date for the original construction of the roof has been given as between 1450 and 1475. An interesting collection of carpenters' marks on the timbers seems to suggest three different carpenters fashioned the timbers. It would seem that the original roof may have had tie beams associated with the principal rafters, but these were sawn through at a later date, possibly when a barrel vault was constructed. Documentary sources record that this vault was replaced by a plaster vault in 1822. Before this a 'lantern' like structure was inserted into the roof. Evidence for vertical lathing extending downwards from this structure suggests that this may have been made before the barrel vault was inserted, although this is not entirely certain, nor is the purpose of the lantern itself.

Following the insertion of the plaster vault, the history of the roof becomes obscure, possibly because it was hidden behind the vault and difficult to gain access to it. During this time leaking water from the valley gutter between the Organ Chamber/South Chapel and the chancel caused the lower part of the rafters on the north side of the roof to decay. At a time yet unknown the rotted lower part of the rafters were sawn off and the remaining timbers tied into the wall plate by planking to a roof that had slumped by up to 200mm to the north from the vertical. There is a mention of 'treatment' to these rafters in the early 20<sup>th</sup> century, but it is uncertain if this relates to the rafters before or after they were shortened. Since this time the roof has continued to deteriorate, resulting in the need to carry out the present extensive repairs.

# Archaeological recording of the Organ Chamber roof at the Town Church, St Peter Port, Guernsey

This report has been written based on the format suggested by the Institute of Field Archaeologists, *Standard and guidance for the archaeological investigation and recording of standing buildings or structures* (Birmingham, 1996). The ordering of information follows the guidelines given in this document, although alterations may have been made to fit in with the particular requirements of the work. All work is carried out according to the *Code of Conduct* and By-laws of the Institute of Field Archaeologists, of which CKC Archaeology is an IFA-registered archaeological organisation (reference: RAO no. 1).

## **1.0 Introduction**

Long term leakage of water (wet rot) through the valley gutter of the roof of the Organ Chamber, plus an infestation of death watch beetle, has caused damage to the constituent timbers. On the advice of Michael Carden, a consultant architect, recording of the fabric was recommended as part of the works to repair the structure. This work was carried out by C K Currie and N S Rushton for CKC Archaeology between 11<sup>th</sup> and 13<sup>th</sup> June 2001.

## 2.0 Historical background

The Town Church stands on the seafront of St Peter Port, close to the Old Harbour, at the junction of High Street, The Quay and Market Street. It is the parish church of the historic town of St Peter Port. This town was the main medieval port of the island of Guernsey, the second largest island in the Channel Islands.

The Channel Islands are an archipelago of small islands off the coast of Normandy, France. Following the conquest of England by William the Conqueror in 1066, they became part of the Norman dominions, and, after 1154, part of the Angevin Empire. Gradually the French part of this empire was reconquored by the French kings. This began with the reconquest of Normandy in 1204. The English kings managed to retain their hold on the Channel Islands, often against great odds, to the present times, although French raids were frequent and devastating.

The Town Church was an important building in the Channel Islands, being the main church of a flourishing port. During the eleven months from Michaelmas 1329 some 487 ships called at St Peter Port. Many of these were from Gascony, which remained part of the Angevin Empire until the mid 15<sup>th</sup> century. It is possibly a tribute to the importance of Guernsey's own shipping that, along with Dieppe, they received preferential treatment in the port of Rouen on the River Seine (Lempriere 1974, 33-34).

Most of the present structure of the church dates from the later medieval period. It would seem that a cruciform church had evolved by the later 12<sup>th</sup> century. To this was added a north and south aisle in the second quarter of the century. This remains the oldest surviving part of the church. However, McCormack (1986, 163) considers that the side chapels on either side of the chancel were the first additions to the cruciform plan, and these pre-dated the nave aisles. These chapels were rebuilt in the third quarter of the 15<sup>th</sup> century, possibly on the

foundations of the earlier work. At the same time, the roof of the south transept was erected when this part of the church was considerably expanded. A dated beam over the south transept was inscribed 1466, suggesting that all the roofs of the new work, including the south chapel, were made about this time (Carey 1924, 323).

It is generally considered that the church was neglected following the Reformation. Calvinism, with its inherent dislike of ostentation, was adopted on the island, and it was not until 1662 that the Church of England became fully established there (ibid, 329). By 1752 the stone tracery of the windows had become so dilapidated that it was replaced by wooden shutters. It was not until 1839 that these were replaced in their turn by the present tracery (op cit, 336).

The church was restored in 1822, when the barrel vaulting over the south end chapel was replaced by a plaster ceiling (Carey Curtis 1916, 6-9). F C Lucas considered that the roofs were in a poor state by this time, and that this prompted the replacement of the vaulting. It is uncertain exactly when the rotting of the timbers adjacent to the gutter between that chamber and the chancel occurred. An undated newspaper article in a volume of cuttings and articles in the Priaux Library states that the roof was treated with preservative at some time in the early 20<sup>th</sup> century, but this does not make it clear if the plank supports had been inserted by then or not.

At some time in the past, the rafters had been shortened, and reinforced by softwood plank additions, but at what date is not known. These additions, in their turn, were also found to have rotted (and in some cases were entirely absent) during a timely inspection by Nigel Cresswell, the church's architectural adviser, in 1999 (Michael Carden pers comm). The addition of the plaster vault under the roof in the 19<sup>th</sup> century had concealed much of this damage until it had reached an advanced stage. Initial proposals to replace the roof in its entirety were advised against by Michael Carden (2000), who argued that as much of the original timber remained sound and should be retained.

#### 3.0 Strategy

Circumstances prevented a project design from being written prior to the job starting. The lack of provision for archaeological intervention in the Channel Islands led to the archaeologists being appointment at a late stage in the project (PPG 15 does not apply to the Channel Islands). Costs also prevented them from making a preliminary visit to see what was required. Instead it was necessary for them to view the church and decide how best to approach the recording in the same visit. Discussion with Heather Sebire, the archaeological curator for Guernsey Museum, suggested that the recording necessary would possibly be covered by Level 2 of the Royal Commission on the Historical Monuments of England (RCHME), *Recording historic buildings. A descriptive specification* (2<sup>nd</sup> ed, 1991). This would require a photographic record to be made of the Organ Chamber roof, plus measured drawings.

#### 4.0 Results

**Note:** The rafters were numbered from 1-26 on the architect's restoration drawings. These were numbered from west to east. The archaeological recording followed this numbering. The roof was found to be in a relatively advanced state of repair when the recording began. The rotted sections of the lower part of the rafters on the north side had been largely replaced. Only rafters 2-5 were found to still be supported by planks attached to the east side of the rafters. These had been removed for rafters 6-8, and the rotted portions sawn off. The rotted portions of rafters 9-26 had been replaced by new oak at the time that recording began.

On initial impression the roof appeared to be of common rafter construction, without a ridge piece. Instead a length of cross beams was set at right-angles to the collars. These had been removed before recording began, but the earlier situation was explained by Nigel Cresswell, the Church Architect. He states that there had been three cross beams, of about 2m long each, to the east of the lantern (see below for description of this feature), with a single beam to the west. These had a series of simple mortices cut into their undersides, so that each mortice fitted over the collars supporting the respective north and south rafter pieces. At the ends of each beam half a mortice was fashioned, so that the adjoining beams could fit together over the collar. By this method the A-frames of each set of rafters were kept from collapsing against one another. It was assumed that no beam crossed the lantern, this being removed here when this feature was inserted. The cross beam to the west of the lantern had been twisted out of its place by the slump of the roof. When the roof was first opened, this beam was found resting diagonally across the collars. The beams on the east of the lantern were still *in situ*, although these were beginning to twist out of their original positions.

The apex of the roof was made by simply fitting the north and south rafters together, using bridled joints. The order of overlay of the two pieces was not uniform (see Appendix 2). In some cases the end of the north rafter overlay the south, and in others vice-versa. The rafters were further supported by a double arch brace, each A-frame being supported on an inner and outer wall plate overlying the stone walls of the church. On the south side of the roof, rafters 1-7 were shortened by varying degrees, being set on the valley rafter of the adjoining south transept roof.

Closer examination of the roof discovered that each fifth set of rafters was set on what appeared to be a sawn-off tie beam (rafters 11, 16, 21). These may have acted as principal rafters, although it is uncertain if they formed a full length beam across the width of the roof or a foreshortened hammer beam. The underside of each of these rafters had a thin chamfered moulded frame attached. This frame was divided into three pieces for each side of the A-frame with a short central linking section at the apex. It was thought to have been placed under the arched braces to support the barrel vault, removed in 1822.

The joints fixing the collar beams to the rafters were generally mortice and tenon types, the majority fixed with a single dowel. The exceptions were rafters 2 and 3, which used double dowels. The joints fixing the arched braces to rafter and collar were a type of angled mortice and tenon. In general the upper brace was fixed to the collar with two dowels, and to the rafter by three. There were some exceptions, with rafters 3, 7 (south side), 8, 10 (south side),

and 12 being fixed to the braces by four dowels, and rafters 5, 6 and 21 being fixed by two dowels. The lower brace seems to have been fixed to the rafter by two dowels, but the evidence here had often been removed before recording commenced.

An unusual feature of the roof was a 'lantern' cut into the apex above collar level between (and including) rafters 6 and 11. This was a simple rectangular construction fitted by removing the apex of the A-frames to the rafters, and attaching the frame to the cut off rafters. In the case of rafters 6 and 11, the inner half of the collar was cut away to fix a frame. Marks of white plaster impressions on the inside of the rectangular frame showed that laths had been attached vertically to it. Thirty five vertical marks were counted on one side. A thin timber (600x50x40mm) was found hanging down at right-angles to the rectangular frame in each of its four corners. Eighteen horizontal lath marks were counted on the best preserved of these timbers, with nail marks alongside each white plaster impression. In the case of rafters 7-10 inclusive the collar seems to have been removed, and the upper arched brace sawn off short to accommodate the lantern. It was clear from the evidence that this 'lantern' like structure only survived in part, it being a much more substantial feature at one time.

A characteristic of the timbers was the extensive use of carpenters' marks to line the individual pieces of the A-frame together. They were normally given as Roman numerals on the North side, and a detailed catalogue of the marks is given in Appendix 2, to which the reader is referred. The marks were repeated for the South side, but would have one or two additional strokes, usually added to the first or last number. With very rare exceptions the marks were on the west facing side of the timbers. Carpenters' marks were not seen on the lower part of the rafters (knees) on the north side as the timbers had largely been replaced here before recording began, but they were seen on the south side where they had not been substituted by replacement timbers.

The carpenters' marks could be divided into two basic types. The most numerous had the marks, in large Roman numerals, crossing the adjoining timbers (Type 1), making lining up a fairly precise act. These were rafter numbers 8, 9, 10, 13, 14, 15, 17, 18, 20, 25. The second main type were smaller Roman numerals that did not cross adjoining timbers, and were only very roughly opposite one another (Type 2). These were rafter numbers 19, 21, 22, 23, 24. There were exceptions to these types. Rafter numbers 3, 4, 5, 6, 7, 11, 16 did not appear to have marks. Rafter number 2 had an unusual marking of a single wavy mark crossing rafter, collar and brace in one line (Type 3), and rafter 12 had marks of Type 1 on the south side only.

At some stage in the history of the roof, rainwater leakage from the valley gutter between the Organ Chamber/South Chapel and the Chancel caused the northern rafters to rot (for a discussion on the dating of this event see section 5.0 below). It would seem that the rotted portions were then sawn off and softwood planks nailed between the remaining rafter and the wall plate. At this time the roof seems to have slumped up to 200mm to the north. This was not apparently corrected, but the planks attached to the slumped roof. Further leakage occurred after this time, causing further rotting to the feet of the rafters. The length of rotted rafter removed, both initially and prior to the present repairs, seems to have varied from rafters. This tended to be worst at the two ends, with lesser decay to the central rafters. At the west end of the roof rafters 2-12 had lost between 1.7m and 1.9m of their

lowest portions. Rafters 13-20 and 22-23 had lost between 1.0m and 1.4m, and rafters 21, 24 and 25 between 1.9m and 2.0m. The rafters leaning against the two ends of the roof (rafters 1 and 26) were decayed throughout, and both had been removed before recording began. The lower portion of rafter 25 had been removed before recording to gain access to the roof. It is presumed that this had been rotted in line with the rafters nearest to it.

The softwood planks attached to the rafters tended to be 2.4m in length. However, it should be noted that only the planks attached to rafters 2-5 were seen (the rest already having been removed), so it is only assumed that the remaining planks were of approximately the same dimensions. The nails used to afix the planks seen were forge-made types.

For technical information on the components of the roof, the reader is referred to Appendix 2.

## 5.0 Discussion

The roof to the former South Chapel (now the Organ Chamber) proved to be a highly complex structure, whose evolution could not be fully determined on the existing evidence. There was clear evidence of alteration, and the structure that existed at the beginning of the present repair works had been much altered from the original roof.

If the dating of the south chapel to the period 1450-75 (McCormack 1986) is accepted, then it would be reasonable to assume the original roof dated from that period. However, it is thought that this chapel was a rebuilding of an earlier chapel on the old foundations. McCormack (ibid) seems to think that this was rebuilt completely from the foundations upwards. Although the author knows of no evidence to contradict this, it is not impossible that the rebuilding was not quite as thorough as McCormack implies. If so, then the old roof may have been reused to cover the rebuilt walls. A timber in the South Transept dated to 1466 might suggest that all the roofs of the south part of the church were replaced at this time. However, this may equally have been a time of extensive repair, reusing older timbers in conjunction with new ones. It is possible that the earliest phase of the present roof dates from the later 15<sup>th</sup> century, but it is worth urging caution here and noting the possibility that it might be, at least in part, an earlier, reused structure.

The carpenters' marks may give clues to the sequence of building. There are two main types of mark, plus rafters without marks. These may suggest the use of three different carpenters or three different sources for the timber. The two exceptions might be explained by the following hypotheses. Rafter 12 probably falls into the category of Type 1, the absence of marks on the North side merely being an oversight. Rafter 2 has a mark not seen on the other timbers. This may have been a reused timber from elsewhere, or a later replacement. It is not possible to determine this on present evidence without recourse to dendrochronolgy.

Of the three main types of timber indicated from their markings, the roof seems to divide into three sections. Rafters 3-7 have no marks. These are all rafters slotting into the valley rafter at the west end of the roof. Rafter 1 had been removed before recording began, and rafter 2 is the single anomaly of the whole roof. Rafters 8-18 are of Type 1 marks, with the exception of rafters 11 and 16. Rafter 11 could be excused as it has been much cut away to insert the

lantern, and therefore it can not be certain it really is an unmarked rafter. Rafter 16 seems to be a genuine anomaly in the middle section of the roof. Rafters 19 and 21 to 24 are all Type 2. They have Type 1 rafters interposed at number 20 and 25. Allowing for these anomalies, it therefore seems that the roof attached to the valley rafter was a section provided mainly from one source or carpenter. Then follows the middle section of the roof, dominated by Type 1, and finally the east end of the roof is largely dominated by Type 2. The interposed anomalies do not really break up this pattern sufficiently not to argue that the original roof was made from timbers supplied by three different sources or using three different carpenters. It was perhaps instructive that the present repairs were being carried out by three carpenters working together. That the original carpenters worked in such a way is not certain, but the weight of the timbers would have made co-operation desirable. It is therefore possible that the roof was built by three carpenters preparing their own timbers as individuals, but erecting them as a team. Such a scenario could account for the occasional mixing of the marks.

The chamfered sections on the underside of the former principal rafters may have had some connection with the barrel vault roof described in the early 19<sup>th</sup> century. If this is the case, it is thought unlikely that this was an original feature. If the sawn off tie beams once extended the full width of the roof, it is would seem that the barrel vaulting was a later addition.

Likewise, the lantern seems to have been cut into the roof after it had been originally completed. It is unlikely that it co-existed with the barrel vault. The evidence of vertical lathing attached to the inside of this structure would suggest that it extended beyond the line of the old barrel vault. It is almost certain from the position of lathing associated with the post-1822 plaster ceiling that the lantern had fallen out of use by this time at the latest, if not earlier when the barrel vault was put in. Both Michael Carden and Nigel Creswell (pers comm) have suggested that the roof may have been subdivided at some time, with a loft at the west end. The lantern would have therefore lit that loft. This arrangement might have mirrored that of the North Chapel, which had an ecclesiastical court room over it. It does not seem feasible that the loft extended the full length of the roof, otherwise it would have obscured the light coming from the window at the east end of the chapel.

Descriptions of the church in the period 1915-24 fail to mention the rotted rafters. A reference to 'treating' the roof around this time might be taken to suggest that this was a first stage in trying to deal with the problem, which subsequently became worse. It is here assumed that the shortening of the timbers, tying them into the wall plate by attaching planks to their sides, may have occurred after this reference. However, this needs to be treated with caution, as the early 20<sup>th</sup>-century 'treatment' may have been to timbers already foreshortened. Certainly the nails used to afix the planks to the remaining rafters were forge-made types rather than industrial wire nails, and this might suggest pre-20<sup>th</sup>-century work. The evidence is therefore ambiguous, with the planking possibly attached as part of the 1822 works, or at some time thereafter.

The roof to the present Organ Chamber appears to have had a complex history that is not necessarily explained by the known chronology of this part of the church. Between its original construction and 1822, a number of phases can be recognised, although these are presently undatable on the evidence available to this survey. These seem to be the insertion of a lantern, possibly to light a loft in a subdivided roof, and the removal of the conjectured

tie beams. The latter may have been done when the barrel vault was made, thus post-dating the construction of the lantern. The rough chronology of the South Chapel/Organ chamber itself seems to have been thus:

Date	Building works or alterations
13 <sup>th</sup> century	South Chapel added
1450-75	South Chapel rebuilt on old foundations; roof built from new or reusing earlier roof timbers? Possible roof phase 1
After 1475	Lantern cut into roof. Possibly roof phase 2?
	Tie beams carrying principal rafters shortened. Roof phase 3 or 4?
	Barrel vault made. Roof phase 4
1822	Barrel vault replaced by plaster vaulting. Roof phase 5
1822 or after	Damaged timbers of South side shortened, and fixed to wall plate by planks. Possibly part of roof phase 5 or roof phase 6 (exact date unknown)?
20 <sup>th</sup> century	South Chapel converted to Organ Chamber

#### 6.0 Conclusions

Archaeological recording of the Organ Chamber (previously the South Chapel) roof during extensive repairs proved to be a useful exercise. Although recording did not begin until the repairs were well underway, the recording revealed new information about the roof. A provisional date for the original construction of the roof has been given as between 1450 and 1475. An interesting collection of carpenters' marks on the timbers seems to suggest three different carpenters fashioned the timbers. It would seem that the original roof had tie beams associated with the principal rafters, but these were sawn through at a later date, possibly when a barrel vault was constructed. Documentary sources record that this vault was replaced by a plaster vault in 1822. Before this a 'lantern' like structure was inserted into the roof. Evidence for vertical lathing extending downwards from this structure suggests that this may have been made before the barrel vault was inserted, although this is not entirely certain, nor is the purpose of the lantern itself.

Following the insertion of the plaster vault, the history of the roof becomes obscure, possibly because it was hidden behind the vault and difficult to gain access to it. During this time leaking water from the valley gutter between the Organ Chamber/South Chapel and the chancel caused the lower part of the rafters on the north side of the roof to decay. At a time yet unknown the rotted lower part of the rafters were sawn off and the remaining timbers tied into the wall plate by planking to a roof that had slumped by up to 200mm to the north from the vertical. There is a mention of 'treatment' to these rafters in the early 20<sup>th</sup> century, but it is uncertain if this relates to the rafters before or after they were shortened. Since this time the roof has continued to deteriorate, resulting in the need to carry out the present extensive repairs.

#### 7.0 Recommendations

The following recommendations are put forward:

- 1. An understanding of the history of this roof would be greatly assisted by the use of dendrochronology. In particularly this should seek to date the main rafters, plus the insertion of the lantern. Such work would help to establish a dating for the conjectured phases in the roof's development, and is strongly recommended, particularly as some of the evidence had been removed before recording could be carried out, with the possible loss of important information.
- 2. Should any future work be undertaken on the roofs or any part of the structure of the Town Church, it is recommended that archaeological recording should be carried out before repair works commence.

#### 8.0 Copyright

C K Currie (trading as CKC Archaeology) shall retain full copyright of any commissioned reports or other project documents written by himself or his agents, under the *Copyright*, *Designs and Patents Act* of 1988 with all rights reserved; excepting that it hereby provides an exclusive licence to the client for the use of such documents by the client in all matters directly relating to the project as described in the project design, as well as for *bona fide* research purposes.

## 9.0 Archive

The archive for this work will be deposited with the Guernsey Museum. Copies of the report were lodged with the client, the Guernsey Sites and Monuments Record (SMR), and the National Monuments Record Centre in Swindon, Wiltshire.

#### **10.0** Acknowledgements

Sincere thanks are given to all those involved with this project. Michael Carden, consultant architect, caused the archaeological work to be undertaken, provided the authors with information about the church, and provided useful discussion on the first draft of this report. Further information was obtained from Nigel Cresswell, the local architect in charge of the project. Thanks are extended to Heather Sebire of Guernsey Museum for her advice, and to Dr Darryl Ogier, the States Archivist, for his assistance over the documentary records relating to the church. The Rector and Churchwardens of the Town Church are thanked for giving the authors access to the building.

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## Appendix 1: catalogue of photographs taken

All photographs taken 12/6/01, half way through repair programme. All archive photographs were taken in monochrome and colour slide. For the archive, the monochrome photographs are numbered as below, but prefixed GTC/M/\*, followed by the appropriate number. The colour slides are prefixed GTC/S/\*, followed by the appropriate number.

- 1. North side, rafters 2-6, showing remaining plank braces from the NE
- 2. ditto
- 3. North side, Detail of rafters 2-4, showing plank braces from NE
- 4. ditto
- 5. North side, rafters 2-14 (west end of roof) from NE
- 6. ditto
- 7. North side, lower part of rafters 16-26 showing replacement timbers from NE
- 8. ditto
- 9. North side, entire length of roof from E
- 10. ditto
- 11. South side, rafters 16-26 showing lower portions and replaced areas from SE
- 12. ditto
- 13. South side, entire roof from SE
- 14. ditto
- 15. South side, valley rafter and lower part of connecting rafters 2-8 from SE
- 16. ditto
- 17. South side, rafters 2-11, upper part from SE
- 18. ditto
- 19. South side, 'lantern' box frame above collar of rafters 6-11 from S
- 20. ditto
- 21. South side, mid section of roof showing cross beam supports over collars removed and laid over collars from S
- 22. ditto
- 23. Outside on scaffolding, showing rotten rafters that had been removed and placed in heap; includes rafters 1 and 26 from W
- 24. ditto
- 25. South side, rafter 21 showing sawn off tie beam from NW
- 26. ditto
- 27. Inside of roof from E
- 28. ditto
- 29. Inside of roof from W
- 30. ditto
- 31. North side, inside of roof showing rafters 22-24 with position and sample of carpenters' marks (III, IIII, & V respectively) from SW
- 32. ditto
- 33. North side, inside of rafter 21 showing carpenter's mark (VI) from SW
- 34. ditto
- 35. A displaced knee joint (lower part of arched brace) showing a carpenter's mark (V)
- 36. ditto

- 37. Inside of roof showing lath marks on inside of 'lantern', on east side of rafter 6 from E
- 38. ditto

## Appendix 2: carpenters' marks and rafter characteristics

For the purpose of recording and repair the rafters were numbered from 1 to 26, starting at the west end and moving eastwards. The carpenter's marks were normally given as Roman numerals on the North side. These were repeated for the South side, but would have one or two additional strokes, usually added to the first or last number. In some cases the complexity of the marking requires brief explanation, particularly on the south side, as the additional strokes are often added inconsistently. Where the marks deliberately cross two adjacent timbers for the purposes of lining up the timbers, the designation 'marks cross adjoining timbers' is given. If this is not stated the marks do not cross the timbers, but were only lined up approximately. Except where indicated, all marks were on the west facing side of the timbers. Carpenter's marks were not seen on the lower part of the rafters (knees) on the north side as the timbers had largely been replaced here before recording began.

Rafter Number	Carpenters' marks North side	South side
1	rafter removed before recording	rafter replaced
2	Single line crosses rafter, arched brace & collar near meeting of these three timbers	none seen
3	none seen	none seen
4	none seen	none seen
5	none seen	none seen
6	none seen	none seen
7	none seen	none seen
8	III, mark crosses adjoining timbers rafter/top of arched brace	rafter replaced before recording
9	II, mark crosses adjoining timbers rafter/arched brace	II extra stroke on second mark on arched brace II extra stroke on second mark on rafter
10	I, mark crosses adjoining timbers rafter/arched brace	I, two extra strokes, one on each timber
11	none seen	none seen
12	none seen	IIIII, two downward strokes on first mark
13	VIII, marks cross adjoining timbers rafter/arched brace; collar/arched brace; collar/rafter; knee – rafter/bra	marks repeated
14	VII, marks cross adjoining timbers marks upside down; rafter/arched brace; collar/arched brace	two downward strokes added collar/brace; rafter/brace; knee – rafter/brace
15	VI, marks cross adjoining timbers marks upside down; rafter/brace; collar/brace	downward strokes added collar/brace; rafter/brace; knee – rafter/brace
16	none seen	none seen

17	IIII, marks cross adjoining timbers rafter/brace; rafter/collar	downward stroke added marks on east face of timbers
10		
18	III, marks cross adjoining timbers	two downward strokes added on
	rafter/brace	last mark
	rafter/collar	knee – rafter/brace, two
		downward strokes last mark
19	II, small marks not crossing timbers	
20	I, mark crosses adjoining timbers	two downward strokes added
	rafter/brace; collar/brace	knee – downward stroke added
		on brace only, does not cross timbers
21	VI, small marks not crossing timbers	s marks repeat exactly
	on rafter (2), brace (1) and collar (1)	
	marks upside down	
22	V, small mark not crossing timbers	downward stroke in centre of V
	on rafter (2), brace (2) and collar (1)	on collar (1) and brace (1) only
23	IIII, small marks not crossing	single downward stroke on first
	timbers on rafter (1) and brace (1)	mark on collar, but on last mark
		on rafter (2) and on brace (1)
24	III, small marks not crossing timbers	
21	rafter (1) and collar (1) only	collar and on rafter opposite;
	Tarter (1) and contar (1) only	on last mark on brace and rafter opposite
25	II marks gross adjoining timbers	one downward on last mark
23	II, marks cross adjoining timbers	
	collar/brace; brace/rafter, mark not	one upward on first mark
	crossing timbers on rafter opposite	rafter/brace knee – two upward marks
	collar joint	on last mark rafter/knee brace

#### **Rafter characteristics: analysis**

Marks crossing timbers of seemingly same carpenter (Type 1) – rafter numbers 8, 9, 10, 13, 14, 15, 17, 18, 20, 25 Smaller marks not crossing timbers (Type 2) – rafter numbers 19, 21, 22, 23, 24 Marks crossing timbers of possible different carpenter (Type 3) – rafter number 2 No marks on rafters- numbers 3, 4, 5, 6, 7, 11, 16 Rafters missing – 1, 26 Marks crossing timbers on south side only - 12

Roof apex:

South rafter overlies north – 2, 3, 4, 18, 19, 21, 22, 23, 24, 25, 26 North rafter overlies south – 5, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 20 Apex cut away to fit lantern – 6, 11

Rafters 1, 26 replaced

Rafters 1-7 fit into valley rafter at west end

Principal rafters are numbers 11, 16, 21

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The archive contains:

- 1. Photographic recording sheets, total 2 sheets included in report as pages 13-4.
- 2. Drawing record sheets, total 4.
- 3. One pack of Black/White photographs with negatives.
- 4. One pack of colour photographs with negatives.
- 5. Three plastic sleeves containing colour slide film.
- 6. Report with illustrations, 16 pages text, 12 colour plates, 8 figs
- 7. Specialist report of condition of timber by Ridout Associates, 6 sheets.
- 8. Correspondence, total 6 sheets.
- 9. Architect's drawing, one large sheet.
- 10. Conservation Architect's report (by Michael Carden), 6 sheets.
- 11. Rough notes taken by CKC (C K Currie), 18 sheets.

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