

Church Bell Frames: guidance notes for identifying historic significance and preparing reports

September 2011

Bells and bell-ringing

Bells have rung out from the church towers of England for more than a thousand years. Often heard but seldom seen, except by bell-ringers, church officials and a small band of specialist craftsmen, the operation of these bells depends on the existence of robust bell frames capable of withstanding the large dynamic forces set in motion by the ringing of heavy cast bells. Some of these bell frames are of considerable antiquity, and many exemplify important stages in the development of structural carpentry, bell frame technology and bell-ringing practice. This document sets out to help those concerned with the care of churches to balance the needs of a continuing bell-ringing tradition with the obligation to consider carefully the historic significance of bell frames and their setting.

The scope of this note

This guidance note is to assist parishes considering work that may include the alteration or removal of a bell frame or the structure supporting it. It sets out:

- a method for assessing the significance of a bell frame, as required by the faculty rules, as part of the information needed to make a decision over its future;
- a way to record a bell frame where it proves necessary to alter or remove it.

Proposals affecting bell frames

A bell frame, together with its foundation, whether made of timber, metal or a combination of materials, is part of the history and development of church fabric.¹ If the bell frame is in a listed building it enjoys the same protection as other parts of the building, even if it is not specifically mentioned in the list description.

Any proposal likely to involve the repair, alteration or removal of a bell frame should be based on an informed understanding of the age and significance of the structure and its setting in the tower. Even in situations where the condition or performance of a bell frame is poor it is still important to understand its significance before making proposals to alter it.

Before any change to the fabric of a church can be approved the parish must apply for a Faculty. This must incorporate both a Statement of Need, giving the reasons why alterations are proposed, and a Statement of Significance, allowing the likely impact of the proposed changes to be assessed, and thereby helping advisers and decision-makers to reach a

¹ For the purposes of this note the term 'bell frame' should be understood as including any associated foundation or floor beams. If the bell frame is supported only at the perimeter, then the beams below should be called floor beams. If the beams support the bell frame at intermediate points other than around the perimeter, then they are called foundation beams.

balanced view of any proposed works.² When proposals involving the loss or alteration of a bell frame are approved the Diocesan Advisory Committee (DAC) will use the Statement of Significance as a basis for determining the appropriate level of record which should be undertaken before any works commence. An appropriate level of record is one that reflects the significance of the frame, and the extent and degree of the proposed alterations. The need for recording should be allowed for from the outset as part of the development of the proposed works. Recording itself is not justification for the loss or alteration of a bell frame or its foundations.

Conducting an appraisal

Before attempting to produce a Statement of Significance it is important to carry out an appraisal. This assembles the known facts concerning the evolution of the church and its bell frame in order to inform the development of proposals for change. Depending on the age, type and history of the frame this may be a relatively straightforward matter. The bell founder or hanger, the DAC and its Bell Adviser, and the Diocesan Ringing Association or Guild are all likely to have knowledge that will be helpful in producing an appraisal. In certain circumstances the parish may be required to consult with bodies outside the Church, including English Heritage and the relevant amenity society, to ensure that the full range of relevant expertise is taken into account.³

In most cases it will be necessary to consult some easily accessible sources of information. The local authority Historic Environment Record (normally held by the County or Unitary Authority historic environment or archaeological service), the Diocesan Record Office, and the Church Buildings Council's database of historically significant bells and bell frames⁴ should be consulted at the outset. If the frame is included on the CBC database it will be of considerable significance and worthy of very careful study. However, the list is not exhaustive and the fact that a frame is not included on the CBC list does not mean that it is not significant. An appraisal is necessary in all cases to ensure that nothing important is overlooked.

Useful background information on the church as a whole can usually be found in a range of published sources. These include the well known *Buildings of England* ('Pevsner') series, the Victoria County History, inventories of the Royal Commission on the Historical Monuments of England, and Survey of London volumes, where available. County and parish histories and guidebooks may also be of assistance. More detailed information may be found in county or diocesan bell histories, parish or diocesan records, and web-based sources such as www.churchplanonline.org.uk.

In addition to gathering existing knowledge, an appraisal of a bell frame should examine:

- its date of construction, stating whether this is estimated or documented;
- its construction materials;
- whether or not it is of the same date as the tower, any of the bells, or other significant works in the church;
- whether it is on its original or historic foundations, or retains original or historic floor beams;
- and its relationship to other furnishings in the tower, including floors and access arrangements

² See www.churchcare.co.uk/legal.php?GF for CBC guidance on Statements of Need and Significance.

³ See English Heritage, 'Bells and Bell frames: Guidelines for consultation', at <http://www.english-heritage.org.uk/professional/advice/advice-by-topic/places-of-worship/bellframes/>

⁴ The database is available at www.churchcare.co.uk/bells.php.

Note that it is often the case that the belfry floor is much older than the bell frame and in some cases it may be as old as the tower. In such cases the floor will need to be assessed separately within the appraisal.

Statements of significance

The evidence gathered during the appraisal should provide an adequate basis for the preparation, normally by the parish but including information from its professional advisers, of a Statement of Significance. The Statement of Significance presents a summary of the history and evolution of the church as a whole, sets out what is known from published sources or direct observation about the bell frame and its relationship to the church, and provides an estimate of the frame's significance. A Chancellor assessing whether the application for a Faculty should be granted will treat the Statement of Significance as a material consideration to be considered carefully alongside the Statement of Needs.

Significance takes a number of forms and any particular bell frame may be significant for several different reasons. These kinds and degrees of significance will determine whether, overall, the bell frame is of local, regional or national significance. Judging significance requires a broad knowledge of the historical development of bell frames and of the comparative rarity of different types and features, and should therefore reflect the advice of the DAC (and other consultees, where involved). In determining significance the following criteria should be taken into account.

Local significance

Local significance will be the default category for all bell frames not judged regionally or nationally significant. It does not mean that the frame is worthless or without interest. A locally significant bell frame embodies the labour and skill of past craftsmen as well as the past aspirations of the parish and its incumbent.

Regional and national significance

Medieval and sixteenth century fabric will always be treated as important, and is not confined to churches outwardly of this period. In a church that was substantially rebuilt in the Victorian era an earlier tower and bell frame may have been retained and incorporate the oldest surviving timberwork in the building. Of particular significance is a complete frame or a frame containing a significant quantity of original work and early timber from elsewhere. Timber foundation beams that support, or formerly supported, a bell frame of this period should also be treated as significant. A limited number of windlasses that have been used to raise bells still survive; these merit special consideration in their own right. Reasonably complete examples of bell frames from this period will be at least regionally significant, and if they are unaltered to an unusual degree, have rare or unusual features, or exemplify important technological advances they will generally be nationally significant.

Seventeenth-century and later frames, of whatever material, are more numerous than earlier examples and less significance can be attributed to them by virtue of their age alone. They may nevertheless be of regional significance provided other criteria are met. Examples that may qualify are frames that

- are complete (special consideration should be given to installations where the bells, frame and tower are all of the same date);
- are dated or documented;
- illustrate important local or regional variations;
- are identified as the work of a known maker (especially if the frame can be shown to be a rare or superior example of the maker's work);

- show significant evidence of the development of the ring;
- show technical innovation and/or unusual features;
- or are rare or particularly fine examples of craftsmanship.

A combination of a number of the above criteria will normally be required to demonstrate national significance in frames from this period, but exceptional fulfilment of a single criterion may also qualify.

If a frame judged to be of national significance is not included on the Church Buildings Council list of bells and bell frames of historic significance the CBC should be informed so that the frame can be considered for inclusion on the list.

Why recording is important

Not all bell frames are of major significance, even if they are in Grade I or II* listed buildings. However, bell frames invariably represent an important stage in the history of a church, and they provide striking evidence of the faith, energy, aspirations, technology and culture of past generations of churchmen, parishioners and craftsmen.

When a bell frame is altered or removed some of that evidence is lost irreplaceably, and such evidence as may remain becomes harder to interpret. A record, made before alterations commence and presented in the form of an illustrated report, aids understanding of the nature and significance of the frame. It may suggest refinements serving to minimise the impact of the proposed works, and it may identify the need for a watching brief (precautionary monitoring)⁵ during the works, to ensure that important additional evidence is captured. In all cases it should provide a basis for informed decision-making for many years to come. It will also ensure that the most important characteristics and features of the frame, even if they are subsequently altered or removed in the course of agreed works, will remain available to future generations for study, helping to illuminate parish, diocesan and musicological histories as well as the study of church architecture in general, and of bell frames and associated crafts in particular.⁶ Guidance over depositing the record is given below in the section *Preparing a report*.

Levels of recording

Different levels of recording allow the nature of the report to be tailored to the particular significance of the bell frame, keeping costs to a minimum.⁷ Three levels of recording are

⁵ Attendance by the recorder during the dismantling to note any features that were previously inaccessible. Further guidance is given at http://www.archaeologists.net/sites/default/files/node-files/ifa_standards_watching.pdf

⁶ See *Planning Policy Statement 5: Planning for the Historic Environment* (March 2010) which can be downloaded from <http://www.communities.gov.uk/publications/planningandbuilding/pp5> for more on the proportionality of recording to the significance of an object. This is further discussed in *Conservation principles policies and guidance for the sustainable management of the historic environment* (English Heritage, April 2008) which can be downloaded from <http://www.english-heritage.org.uk/publications/conservation-principles-sustainable-management-historic-environment/conservationprinciplespoliciesguidanceapr08web.pdf>

⁷ Chris Pickford, *Bellframes – a practical guide to inspection and recording* (1993), is an invaluable guide, available from the author (£6.50 plus £1 postage & packing) at 4 Walmsley Court, High Street, Kinver, DY7 6HG. For more general guidance on standards and conventions of building recording, and how to go about it, see *Understanding Historic Buildings: A guide to good recording practice* (2006), a free English Heritage publication which can be downloaded from www.english-heritage.org.uk or ordered by telephone on 0870 333 1181 or by email to customers@english-heritage.org.uk. Note that the three levels of bell frame recording presented here roughly equate with Levels 2-4 as set out in *Understanding Historic Buildings*.

described below. The appropriate level in any particular case will normally be determined by the significance of the bell frame, as established through the appraisal, but the detailed requirements of the record will usually reflect the nature and extent of proposed alterations, so for example any element of a frame that will be lost, moved or changed may need to be recorded in greater detail, bearing in mind that sufficient context is necessary to understand the specific details.

DACs are strongly advised, when issuing a Certificate, to make it clear exactly what level of recording is considered appropriate by means of a Condition in its advice to the Chancellor. It is appropriate to ensure that the record is both completed and approved, by the DAC or other appropriate body, before any alteration commences. The nature of these alterations, and any additional information brought to light as they take place, can be added to the record as works progress.

The three recording levels: a summary

A Level 1 record is essentially visual in nature, supplementing the written content of the appraisal, and is suitable for bell frames judged to be of local significance.

A Level 2 record is descriptive and analytical in nature, providing a reasoned and illustrated account of the origins, characteristics and development of the bell frame. It is appropriate for frames judged to be of regional significance.

A Level 3 record, while covering the same ground as a Level 2 record, involves a more searching historical analysis and a wider assessment of the context and significance of the bell frame. It will normally be reserved for frames of national significance.⁸

All records will therefore consist of a mixture of written, drawn and photographic information, but the time devoted to each element of the record will vary in the manner described below according to the level adopted. What follows is intended as a guide rather than a rigid prescription. Flexibility will sometimes be required to ensure that the most appropriate record is produced. A good record is the product of methodical and informed investigation, and makes a clear distinction between evidence and interpretation. The following description of levels of record should be read in conjunction with the Checklist at the end of this note.

The written record

Drawings and photographs, invaluable though they are, need supporting written information if they are to be fully intelligible and particularly if they are to provide a lasting record.

Level 1: the written element will normally be limited to a brief note identifying the church, the date and circumstances of the record and the identity of the individual(s) compiling it. It is useful to attach the existing appraisal, and to note any additional information or corrections that have emerged in the course of recording.

Level 2: in addition to the above, a report combining a description of the bell frame, an analysis of its development and an interpretation of any features of interest is required. This will be based largely on the physical evidence of the frame and its setting, but should include a brief account of the history of the installation, including the tower or belfry, evidence for the date of the frame and any other relevant documentary evidence from parish and other records, so far as these can be ascertained from published sources. Much of this information may be found in the appraisal, but it will need to be reassessed in the light of the assembled physical evidence.

⁸ An example of each level is also available on the CBC website.

Level 3: the written account will cover the same ground as stated for Level 2, but in addition will give a detailed account of the origins and development of the bell frame and its setting, and include observations on its condition and a discussion of its significance. A report at this level will normally draw upon systematic research in primary documentary sources. It may also comment, as appropriate, on the wider historical, technological and musicological context of the frame.

The drawn record

The drawn record is particularly important where bell frames are concerned because their confined locations limit photography very largely to the recording of details. As a minimum the drawings, whether sketched or measured, should include plans at head, sill and foundation beam levels along with at least two sections, in order to provide a reasonably complete record of the frame's character and form. All measured drawings should be accompanied by a linear scale, and liturgical east should be indicated on all plans. The normal requirements for each level of record are as follows:

Level 1: dimensioned sketches of the plan at head, sill and foundation beam levels, along with E-W and N-S sections, including the positions of wheels and rope drops, should be sufficient. Curiosities and special features should be indicated on the sketches, which should be re-drawn in fair copy using a ruler, with key dimensions annotated.

Level 2: as for Level 1, but the drawings will be based on measured survey and drawn up to a suitable scale (probably 1:20 or 1:25) either by hand, or in CAD in a manner suitable for plotting at such scales. However, a sectional drawing, probably diagrammatic rather than based on a full measured survey, should also be included to show the position of the bell frame within the church tower and its relationship to floor levels. Depending on the complexity of the frame, additional sectional drawings (probably diagrammatic rather than based on full measured survey) may be needed to cover each truss type represented (minor variations between trusses can be recorded using photography, sketches and/or the written account).

Level 3: as for Level 2, but a measured sectional drawing should also be included to show the position of the bell frame within the church tower and its relationship to floor levels, windows, belfry openings, etc. The set of drawings may be further expanded in appropriate cases to include a series of interpretative drawings depicting the main stages of development, or a greater number of detail drawings (see below).

Bell frames have traditionally been recorded by taking tape measurements and then, from these measurements, producing scaled two-dimensional drawings, usually by hand but sometimes using two-dimensional (2D) computer-aided drawing (CAD). More recently, reflectorless electronic distance measurement (REDM) has been used in trials and laser scanning has also been used to produce three-dimensional models, giving the potential to provide virtual access to particularly fine bell frames. At present, however, both of these methods are likely to be more expensive than drawing by hand. The adoption of a particular method is in fact less important than achieving an accurate result, and there are often benefits to be derived from traditional approaches which typically necessitate spending a great deal of time with the frame, with the consequent opportunity to notice more of its features.

Drawings should record evidence of past arrangements (e.g. redundant mortices) as well as existing features, as these may be crucial to an understanding of the evolution of the frame. They should also distinguish clearly between what is based on direct observation and what may be inferred from the available evidence. Plans should relate the frame to the

surrounding masonry walls and to any openings in them at or near the plan level. Plans at frame-head level should include bell and bearing positions (numbered), orientation and roping, and measurements (cut and un-cut) of pit widths. At sill level all posts and braces, as well as tie-rods and cut-outs, should be shown. At foundation or floor level include all beams, bell-holes and traps. The section line may be varied ('joggled') where advantageous but should be keyed to the plans to aid identification.

At all levels of record, and especially where conditions make photography difficult, measured drawings or sketches of important details which are not adequately recorded in the plans and sections are to be encouraged. The selection of details for such treatment will typically be at the discretion of the recorder but may be specifically requested. Suitable subjects include:

- carved inscriptions or dates;
- carpenters' marks;
- constructional and other details (e.g. unusual or elaborate carpentry joints, the jointing of sills to bearers, redundant bearing indents, positions of bearing blocks, clearance grooves, redundant mortices), including repairs such as scarfed-in timbers and strengthening (metal tie-rods and angle plates);
- evidence for the positions of former fittings (e.g. bearings, rope rollers, slider pins and runners).

The photographic record

At all levels photographs are useful, but partly because of the practical difficulties of photographing bell frames they are not a substitute for scaled drawings. Sufficient photographs should be taken to establish the general appearance and character of the bell frame and its setting and to identify significant details. General views should be taken from several angles including, where possible, plan views from above the bell frame and from beneath the bell frame floor. All photographs should be titled or captioned so as to identify their subject and viewpoint. It is helpful, particularly when photographing details, to include in the shot a ranging rod or ruler, to identify the scale of the subject. The report should be illustrated with photographs as follows:

Level 1: a basic photographic record, including general views of the bell frame and the tower exterior, and any special features, will be sufficient.

Levels 2 and 3: more photography will generally be needed than at Level 1 to cover the range of viewpoints and features, and to support the observations and conclusions of the report. Photographs at these levels should include:

- main trusses and selected variants (without bells in view if possible)
- supporting arrangements – offsets, bearers
- dated timbers, carved inscriptions, carpenters' marks (side lighting, rather than the use of camera-mounted flash, will usually give better results).

Preparing and disseminating a report

At Levels 2 and 3 the report and accompanying drawings (often called an Inspection Report) should be prepared by someone with a good understanding of bell frames, bells and belfries. Whilst it is often preferable for the work to be undertaken by a suitably experienced bell frame or building archaeologist/investigator,⁹ it may be that some of the survey information can be collected by others, possibly on a voluntary basis, and brought together in a report with professional assistance.

⁹ Someone who has specialized in bell frame recording and has had his work scrutinized and accepted by his peers.

The full report should be presented in a way that makes it readily understandable to the reader (who may not have specialist knowledge of bell frames), bearing in mind that it might become the only record of the frame. The date(s) of the survey work, and the date of the report should be recorded, along with the name(s) of the author(s) and surveyor(s). The following guidelines should be observed:

- printed copies should be on acid-free A4 paper, with folded A3 drawings inserted as necessary;
- references should be supplied for all sources cited;
- the involvement of consultees (DAC, CBC, SPAB or EH) should be mentioned and any assistance received in making the record should be acknowledged;
- six paper copies of the report should be provided, one of which should be kept by the PCC. Other copies should be sent to the DAC, the Historic Environment Record, the Diocesan Record Office, the Library of the Central Council of Church Bell Ringers and the Church Buildings Council;
- print-quality electronic copies may be submitted if preferred, although a paper copy should be provided for the parish.

It is good practice for any resulting archive (original sketches, drawings, photographs, notes, etc) to be deposited in the relevant Diocesan Record Office.

Checklist

The following notes are designed to help those undertaking recording, or writing a brief for recording by others, to ensure that the best possible record is created within the broad constraints of the adopted recording level. Two underlying principles are worth stating at the outset:

- making a good record of a bell frame requires time, careful observation and thought, as well as an understanding of what is being investigated;
- the value of any drawn or visual record is greatly enhanced when it is accompanied by a written explanation of what has been observed, and of the inferences to be drawn from it.

The sections below set out, in summary form, suggestions for matters to be considered when investigating the bell frame and its setting, and when analysing and interpreting the evidence.

The built context

- The date, phasing and construction of the tower
- Tower openings, windows, louvres, shutters, etc
- The history of flooring: current and former levels and stages
- Corbels, beam slots and supporting beams
- Redundant or missing supports
- An analysis of how the bell frame was installed, particularly if it is a tight fit within the tower
- If the frame is contemporary with other significant works in the church

Materials

- Use of oak, elm, iron, steel or other materials
- Evidence of tool marks, timber conversion and tree sections used
- Survival of bark and bark-edge (useful for assessing suitability for tree-ring dating)
- Baltic timber marks

Form

- Arrangement of the frame: base timbers, posts and braces

- Dimensions of timbers
- Chamfers and stops, or other decorative treatments
- Joints and peg-holes, used and redundant
- Jointing types: mortice and tenon, halved, lapped, lap-dovetailed, scarfed (various types)
- Evidence supplied by the frame bearing on the history of the bells, and vice-versa
- Evidence for the insertion of the frame or bells
- Pickford frame classification: include main truss type, and list variants (also to be sketched, as noted above)

Fixings

- Use of pegs, nails, iron straps and bolts: are they contemporaneous or successive?
- Types of nail and bolts (hand or machine-made)
- Early types of bolt (forelocks and hand-made nuts)
- Bell, bearing and rope fixings (e.g. rope rollers, slider pins and runners)

Bells

- Details of bells past and present, with particular reference to numbers, augmentations and reductions at each stage
- Position, orientation and roping of bells, and evidence for former arrangements
- Size of the bells, past and present
- How the bells were intended to be rung (i.e. rung full circle, swing chimed or stationary struck)
- Evolution of ring or chime: additions (or reductions) in weight and/or number, and interpretation of the development of the installation

Other features

- Inscriptions and graffiti
- Labels and notices
- Setting-out marks, carpenter's marks

Condition

- An assessment of the condition of the frame and relevant comments about its performance

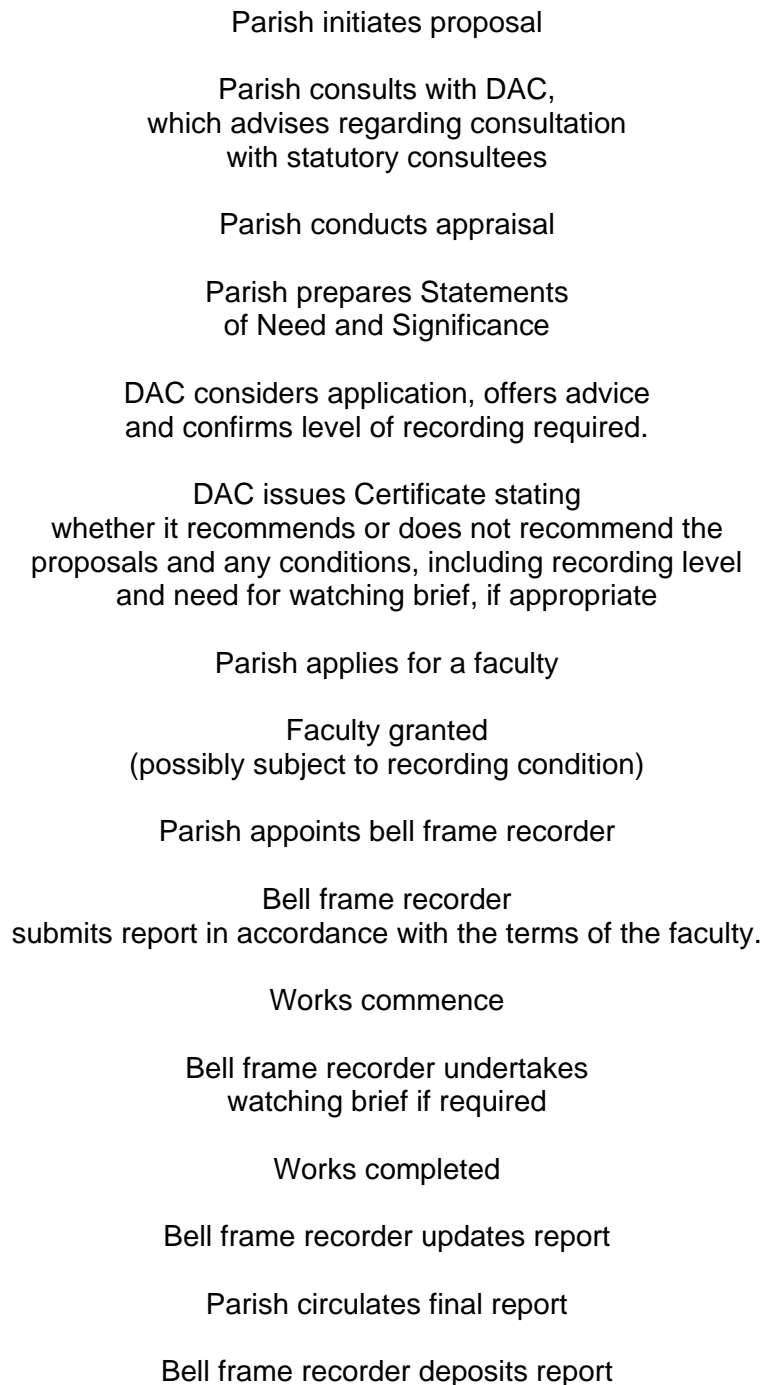
Significance

- A general statement of significance (interest, rarity, associations, context)
- Notes on particular features of significance, interest or rarity (e.g. unusual bracing, significant evidence)
- Comparison with bell frames locally, with frames exhibiting similar characteristics, or with frames by the same maker

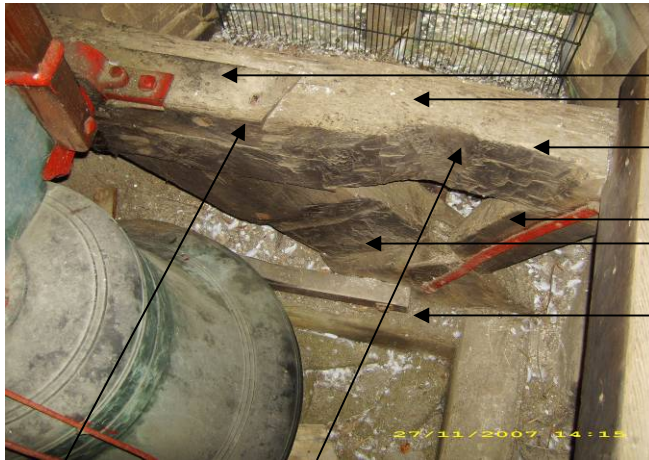
Further work

- A list of features to be photographed and/or preserved *ex situ*
- Recommendations for dendro-chronology, carbon-dating or other specialist examination
- Recommendations for a watching brief during proposed works (this is especially important when important details are obscured at the time when the record is made, but may be revealed during works).

Appendix 1 – Flow chart to show place of recoding in advisory process



Appendix 2 – illustrations to show the principal technical terms



- Bearing block
- Head
- Clearance groove
- Jack brace
- Brace
- Sill

Pit width (uncut) (Pit width (cut))



- Clearance groove
- King post



- Angle plate
- Tie rod
- Foundation bolt



- Slider Pin
- Wheel rim
- Wheel shroud
- Slider



- Rope roller



Bell hole

Framed for bell trap

Foundation beam (if supporting bellframe)

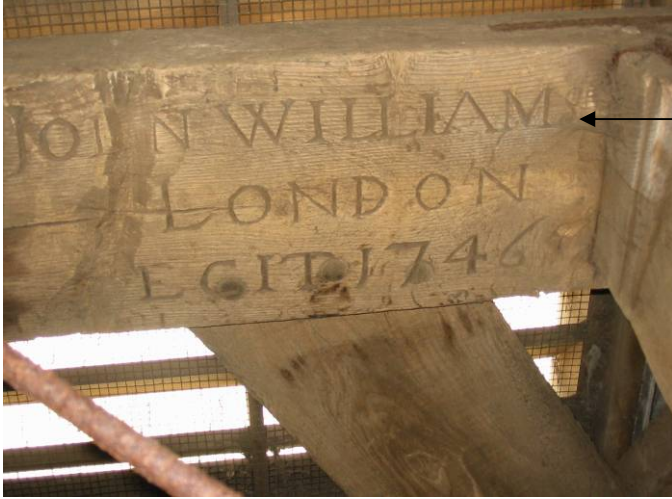
Floor beam (if not supporting bellframe)

Primary floor/foundation beams if supporting secondary beams above.



Stock hoop sweep and bearing indents (sometimes in the most unexpected places).

Bell cut outs



Carved inscriptions and dates

Appendix 3 – sources of further information

In addition to items mentioned in the text itself, the following organisations may be able to assist with further information and advice.

Church Buildings Council, Church House, Great Smith Street, London, SW1P 3AZ,
www.churchcare.co.uk, 020 7898 1866, enquiries.ccb@churchofengland.org

The Church Buildings Council may be involved in your project as an adviser, and your DAC will guide you over consultation, where appropriate. The list of bells and bell frames of historic significance is maintained by the Council, and is available through www.churchcare.co.uk. The Council maintains a library of books related to church building and has files, some detailed, on most church buildings in the Church of England. It also has some grant funding available towards the cost of work to bells.

English Heritage – <http://www.english-heritage.org.uk/about/contact-us/>

English Heritage champions our historic places and advises the Government and others, helping today's generation get the best out of our heritage and ensure that it is protected for future generations. It is required to offer planning advice regarding proposals to change historic assets to both ecclesiastical authorities operating under the Ecclesiastical Exemption and local authorities .

English Heritage wants to encourage the use of historic bells and bell frames and thereby the tradition of change ringing. Guidance explaining the context within which English Heritage will offer advice on proposals affecting bells and bell frames, as well as information about consultation and specific works and be found at: <http://www.english-heritage.org.uk/professional/advice/advice-by-topic/places-of-worship/bellframes/> copies can also be requested by telephoning customer services on 0870 333 1181

The Society for the Protection of Ancient Buildings

SPAB may be involved in your project as an adviser, and your DAC will guide you over consultation, where appropriate. SPAB has a technical advice helpline available free on 020 7456 0916. The line is open Monday - Thursday from 9.30 am to 12.30 pm and on Friday 9.30 am to 5.00 pm.

Central Council of Church Bell Ringers, Local Association or Towers and Belfries Committee.

Your local Association should have a Bell adviser and they should be contacted in the first instance. Failing that, advice can be sought from the Towers and Belfries Committee, (a national committee). This committee has been set up to make available advice and assistance on and information about the installation, maintenance and security of rings of bells, the maintenance of towers, and related matters. The committee chair can be contacted on tbchair@cccbr.org.uk