

**INSPECTION OF BELL INSTALLATION  
ST CLEMENT, HORSLEY  
9 December 1998**

The inspection was requested by Gordon Halls (Diocesan Bells Adviser) to provide a record following a recent overhaul of the installation by the local band and John Cater and his team.

**TOWER**

The tower is stone built, square in section and situated at the west end of the church. It is heavily buttressed on the south west and north west corners and carries a steeple. Access is gained from the outside through doors in the south wall and from the church through a door in the screen at the east side of the ground floor ringing chamber. The external access is unusual in that the outside door (29WX65Hins) leads to a small area within the wall thickness which provides access via a door (28WX67Hins) on the west to the spiral staircase and final access to the ringing chamber via a further door (31WX70Hins).

The ceiling of the ringing chamber is 246 ins high and so a rope guide frame is installed 168 ins above the floor. Principal floor dimensions are 175 ins east/west and 145.5 ins north/south. There are two windows in the west wall which are 76HX45Wins. Lighting from two flood lights is good.

The intermediate room is reached via 33 steps (each 7.5ins) up the spiral staircase. A good handrail provides a secure handhold on the staircase but the stone steps are dangerously worn and lighting is provided by a temporary free hanging cable with light sockets installed at intervals. Safe access to the bell chamber is essential for muffling the bells, and maintenance work (particularly rope adjustment/change).

Three wooden steps drop the 36ins into the intermediate room which is clean and used for storage. The auto wound clock is housed in a case on the east wall. There are windows on the west/north/south walls and a trap door (49.5X49.5ins) in the centre of the floor with three of the six ropes passing through. Ceiling height is 106ins. and the principal floor dimensions 142.5X142ins.

The bell chamber is reached via a further 21 steps up the spiral staircase.

**BELL CHAMBER**

The bell chamber measures 141X140ins. and is very clean.

Entry is at approximately 108ins above the floor level, and 11 ins below the top level of the steel H frame. Access to the ladder down to the floor and also the ladder to the steeple is by way of the top of the bell frame which offered neither a safe foothold nor handhold. At the time of inspection the frame was dripping with condensation and extremely slippery presenting a considerable hazard.

There is a louvre in the centre of each wall (39WX99Hins) fully protected against bird entry. (The louvre sills are positioned at the same height as the entrance door sill). Weather protection is inadequate with a small piece of perspex sheet in the south louvre. Full protection is essential in both the south and west louvres, the direction of the main prevailing winds which cause wind driven rain to come through the louvres.

Clear evidence is visible in the stone work of the earlier higher level bell installation which was at the level of the entrance door. Areas of wall were relieved to provide clearance for bells and wheels.

Seen from the intermediate room the bell chamber floor is supported on three corbels in the south wall and four on the north wall. Two 9X3ins beams rest east/west on these corbels which support the ends of ten 8X3ins floor joists (all in good condition) which in turn carry the floor timbers.

## **THE BELLS**

There are six bells without canons, all mounted on box section cast iron headstocks, revolving on ball bearings and fitted with independent clappers and Hastings stays. All fittings are in good condition and have been cleaned and painted. There are no clock hammers.

General details for each bell are given in the appended table.

The condition of each bell is as follows:

**Bell 1** - not quarter turned with only moderate clapper indentation

**Bell 2** - not quarter turned with moderate clapper indentation covering an arc of about 6ins

**Bell 3** - 1/8 turned with moderate clapper indentation covering an arc of about 2ins. This bell is scheduled for preservation.

**Bell 4** - 1/4 turned with moderate clapper indentation covering an arc of about 2ins

**Bell 5** - 1/8 turned (twice) with moderate clapper indentation covering an arc of about 4ins

**Bell 6** - 1/8 turned with moderate clapper indentation covering an arc of about 4ins, soundbow chipped. This bell is scheduled for preservation.

## **BELL FRAME**

The bell frame is of cast iron H frame construction mounted on three 12X6ins RSJs set into the north and south walls which rest on two transverse 12X5ins RSJs set into the east and west walls. (Framing connecting the upper edges of the H sections is not set into the walls). Details of sizes and layout are shown in the appended diagram.

Following the recent refurbishment the frame is in excellent condition with all rust stripped and the metal repainted.

## **CLAPPERS**

All clapper balls have been twisted 90 degrees to present an unworn face to the bell and all have been mounted on Nylon 66 bearing inserts. The pins, being in serviceable condition, have not been replaced.

## **STAYS**

The stays are of the Hastings type and in good condition.

## **WHEELS**

All wheels are tight and in good condition.

## **PULLEYS**

Pulleys to bells 1,2,4,5 and 6 are double, a single pulley is fitted to bell 3.

Pulleys to bells 2,3,4,5 and 6 show heavy grooving and significant side ways movement on pulleys 1,5 and 6.

## **SUMMARY**

Functionally, the whole installation is in a thoroughly serviceable condition with the exception of the pulleys (which should be given some further attention) and weather proofing in the bell chamber.

Of concern are issues of safety to personnel using the spiral staircase and working in the bell chamber. Safe access to the bell chamber is essential for muffling the bells, and maintenance work (particularly rope adjustment/change).

## **RECOMMENDED ACTIONS**

1) Install weather proofing to the west and south louvres to exclude driving rain from the bell chamber. Use of thin wood (suitably treated against rot) or plastic material filling the full louvre area is suitable since this will not significantly attenuate the outside sound of the bells.

2) Ideally all pulley wheels should be replaced with new wheels mounted on ball bearings. This will rectify problems of heavy grooving and / or excessive side play. As a minimum it is recommended that the existing wheels be retrofitted with ball bearings.

3) Review personnel safety in the spiral staircase, in particular:

- restore the correct step profile
- install proper lighting to appropriate approved standards.

4) Review personnel safety in the bell chamber, in particular:

- consider installation of handrails and secure footways to access the frame ladder and steeple ladder from the entrance door
- install proper lighting to appropriate approved standards.

The inspection was carried out by John McCartney and Mike Banks on 9 December 1998.

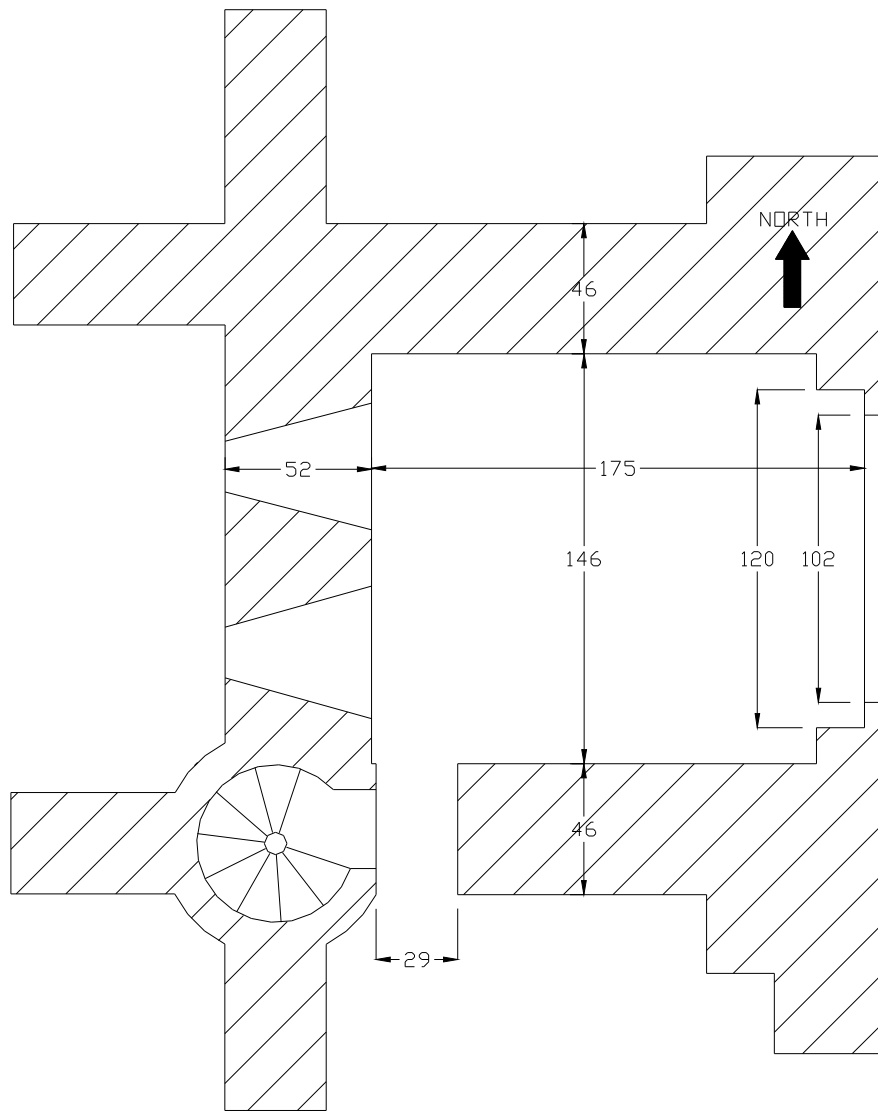
Advice is given in good faith, no liability accepted.

Report prepared by M D Banks \_\_\_\_\_

Approved by G Halls (Diocesan Bells Adviser) \_\_\_\_\_

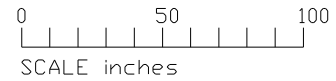
**BELL DETAILS (taken from Pat Halls database)**

BELL	DIAMETE R ins	WEIGHT	DATE	FOUNDER	NOTE	INSCRIPTIONS
Treble	28.5	4-3-22	1953	J Taylor		TO THE GLORY OF GOD · 1953 · ELIZABETH II CROWNED
2	30	5-0-26	1887	J Taylor		JUBILEE VICTORIA 1887 . DONO DEDIT GEORGE SLATER (T) Waist
3	31.675	5-1-1	n.d. c 1570	Henry Oldfield		ihS bE ovrE spEd ho
4	35.875	7-2-1	1620	George Oldfield		£ sweetly toling men do call to taste on meats that feede the soole 1620 GO
5	38	8-3-14	1660	George Oldfield		GOD SAVE OUR KING IOHN BOARDSLEY 1660
6	42.5	12-2-11	1603	Godfrey Heathcote	F#	ihc GLORIA IN EXCELCIS DEO ANNO DNI 1603 GH

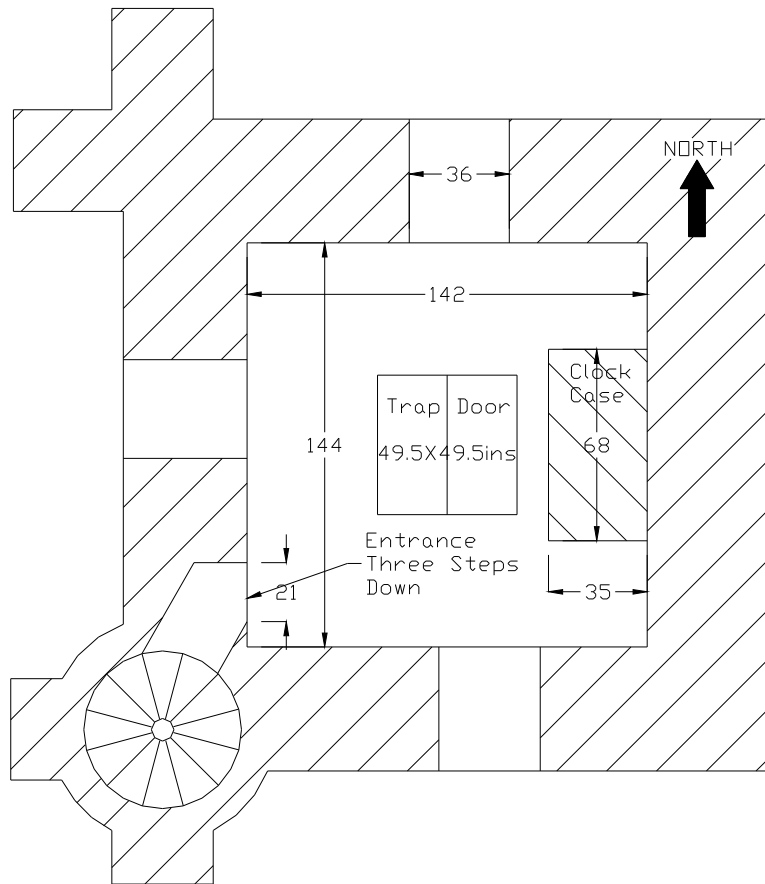


NOTES

- 1) Ceiling height 246ins
- 2) Entrance from outside is through door in south wall (70ins high)
- 3) Entrance from church through screen on east side
- 4) Two windows in west wall height 76ins
- 5) Rope guide frame set 168ins high
- 6) Well lit with two flood lights
- 7) Two clock weight boxes, one either side of screen
- 8) Spiral staircase entrance from within south wall (door 28WX67insH)



LOCATION ST CLEMENT Horsley
TITLE Ringing Chamber (GF)
DRAWN MDBanks 9 December 1998
DIMENSIONS inches

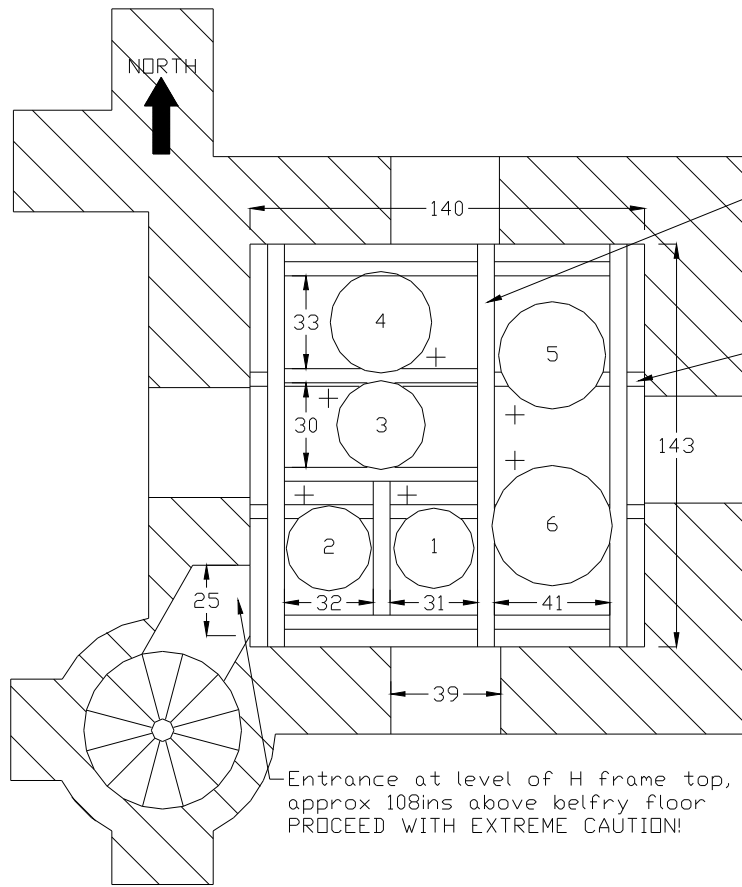


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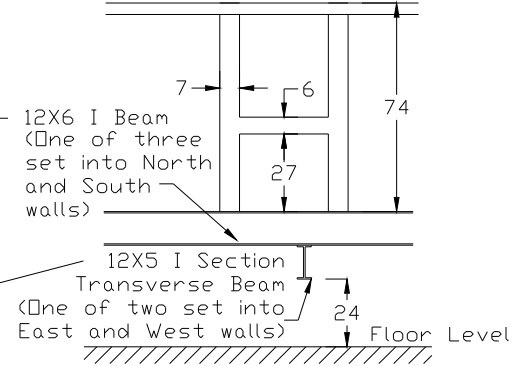
- 1) Reached by 33 steps up spiral staircase
- 2) Autowind clock on east wall
- 3) Door cill 36ins above floor level - 3 wooden steps down
- 4) Ceiling height 106ins
- 5) Centre trap door with three ropes passing through



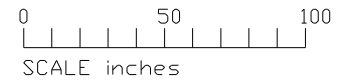
LOCATION ST CLEMENT Horsley
TITLE Intermediate Chamber
DRAWN MDBanks 9 December 1998
DIMENSIONS inches



TYPICAL H FRAME SECTION AT BELL 5  
VIEWED FROM WEST SIDE



+ Position of ropes



LOCATION ST CLEMENT Horsley
TITLE Bell Chamber
DRAWN MDBanks 9 December 1998
DIMENSIONS inches