

**INSPECTION OF BELL INSTALLATION
AT ALL SAINTS, BRADBOURNE
2 December 1998**

The inspection was requested by Gordon Halls (Diocesan Bells Adviser) to provide a record of the installation following a recent major overhaul of the installation by 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 of substantial construction with walls approximately 52ins thick at the base. Primary access to the tower and ground floor ringing chamber is from the nave but there are also two doors giving direct outside access, one in the south wall, the other in the west wall (see attached diagram).

The ringing chamber has a high ceiling (294ins) and so is fitted with a rope guide frame set 164ins above the floor. The frame has been derusted and painted black. Situated on the north wall is an Ellacombe chime rack operating hammers on all 6 bells.

Above the ringing chamber is an intermediate room which is reached by a spiral staircase (36 steps) entered through the ringing chamber north wall. This contains the clock mechanism, the remains of a very old windlass and a 48X48ins trap door in the floor (see attached diagram). The room is clean and has recently had part of the flooring replaced although the windlass has suffered from wood worm.

The bell chamber is reached via 13 more steps up the spiral staircase.

THE BELL CHAMBER

The bell chamber measures 193X191ins and is very clean.

Seen from the intermediate room, its floor is supported by six beams running east/west (approx. 12X12ins in section) and these rest on two beams running north/south (approx. 16X10ins in section). The north/south beam on the East wall has been replaced but there is evidence of woodworm in some of the other beams. It is not known if the woodworm has been treated (but there was no evidence of wood powder on the intermediate room floor below). The steel bell frame is mounted directly in the walls and so is independent of these wooden floor beams (see later).

There is a pair of louvres at the centre of each wall. John Cater and his team have weather proofed the louvres with plastic sheeting backed by steel mesh. The birdproof mesh completely covers the louvres and the plastic sheet stops short at the bottom by about 2ins to allow circulation of air to prevent damp.

THE BELLS

There are six bells, all without canons mounted on cast iron headstocks and fitted with independent clappers. The metal fittings have been cleaned and painted to a good standard.

All bells run on plain bearings which have been thoroughly cleaned and the oil retention pads replaced. Gear oil has been used for lubrication.

Each bell has a floor mounted Ellacombe chiming hammer striking the inside of the sound bow and bells 1,2,3, and 6 have clock hammers striking externally. All have been cleaned and painted to a good standard.

Details of each bell are shown in the appended table.

The condition of each bell is as follows:

Bell 1 - not quarter turned with modest (1.5ins wide) indentation.

Bell 2 - not quarter turned with modest (1.5ins wide) indentation.

Bell 3 - not quarter turned with modest (3ins wide) indentation. The full circumference of the rim has been chip tuned at 45 degrees.

Bell 4 - not quarter turned with modest (3ins wide) indentation. Inside machined for tuning.

Bell 5 - 1/8 turned with modest indentation (4ins wide). There are chip tuned marks on the rim similar to bell 3. This bell is scheduled for preservation.

Bell 6 - quarter turned with modest indentation (4.5ins wide). Inside fully skimmed for tuning. This bell is scheduled for preservation.

Other details of the bells are given in the attached table (page 4).

BELL FRAME

The bell frame is in a single plane and made from steel **I** section beams riveted together. It probably dates from 1895 when the treble was added and the No 2 recast. Three principal 14X6ins beams run north south fixed into the north and south walls. Two 8X4ins steady beams connect the frame to the east wall and there are two similar beams on the west side fixed to the west wall. There are six 8X6ins frame stretchers between the bells (see diagram).

All rust has been stripped and the steel work undercoated with red lead and then painted to a very good standard with two coats of Brolac blue gloss paint. The frame and its attachments to the wall are in excellent condition.

CLAPPERS

John Cater has had all clapper balls twisted 90 degrees to present an unworn face to the bell and all have been mounted on Nylon 66 bearing inserts. For clappers 1,2,3,5 and 6 the insert has been fitted into the old lignum vitae bearing material suitably bored out to receive the new bushes. Clapper number 4 has its nylon bush mounted in a hardwood replacement for the lignum vitae. The pivot pins were not replaced. Sideways clapper movement is generous for a refurbished installation but acceptable. All clappers carry a forked end with no provision for lubrication. The pivot pins screw into one fork and are locked by means of a split pin.

PULLEYS

All pulleys have had the pivot bolts renewed and run on plain bearings with some (acceptable) wear. All pulleys are single with the exception of bell 2 which is double.

WHEELS

All wheels are in good condition and fit tightly on their headstocks.

SLIDERS and STAYS

Since space under each bell is obstructed by the Ellacombe chiming hammers, the slider comprises a steel chair running between two stops on a floor mounted steel rail set at right angles to the bell axis. Resilient pads have been fitted to the stops to reduce chair bounce. The stays are otherwise conventional.

SUMMARY

The whole installation is in a thoroughly serviceable condition which will last, with regular care and maintenance, for many years due to the high standard of work carried out by John Cater and his team.

RECOMMENDED ACTIONS

No further work is required on the bell installation, however it would be advisable for the church authorities to assure themselves that the woodworm seen in the bell chamber floor beams and the windlass has been treated.

The inspection was carried out by John McCartney and Mike Banks and all advice is given in good faith, no liability accepted.

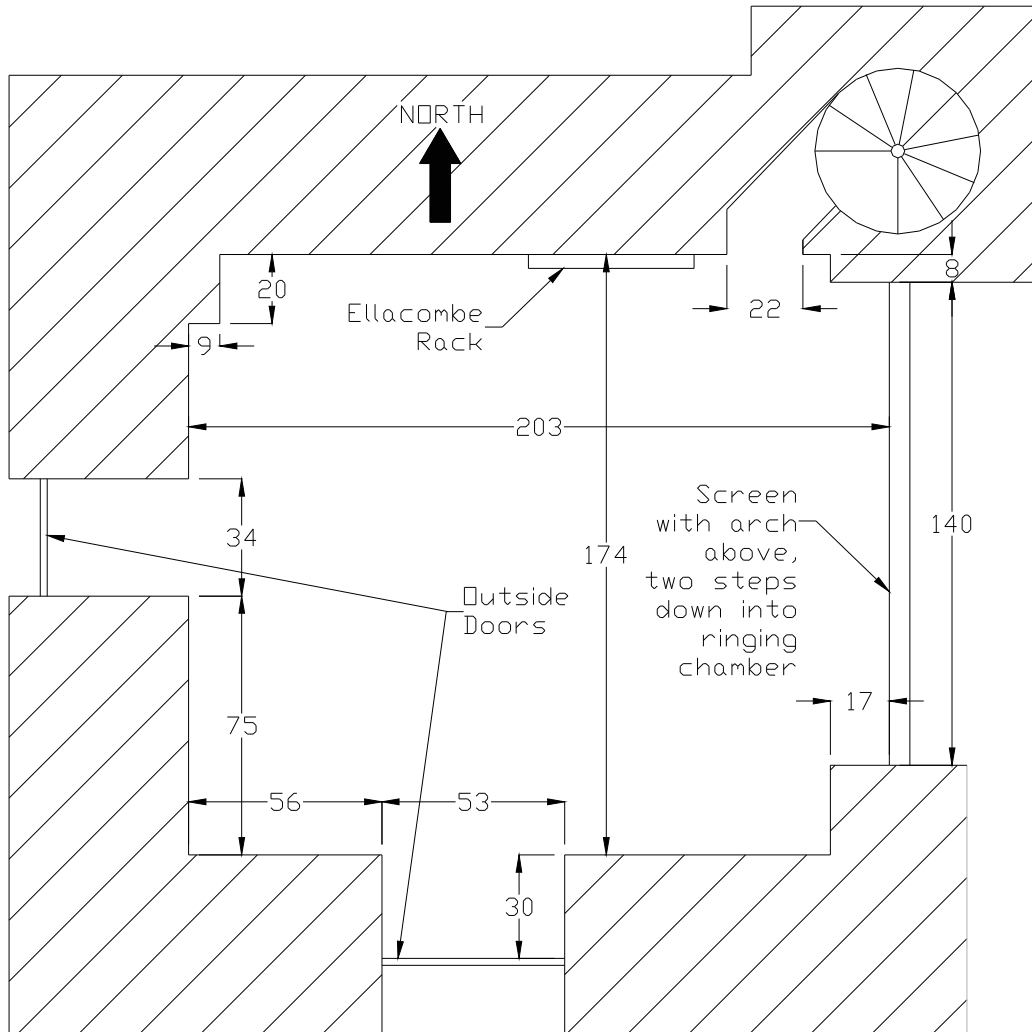
Report prepared by M D Banks _____

Approved by G A Halls, Diocesan Bells Adviser _____

BELL DETAILS (from Pat Halls database)

BELL	DIAMETE R ins	WEIGHT	DATE	FOUNDER	NOTE	INSCRIPTIONS
Treble	26.25	4-0-19	1895	Taylor		*J.TAYLOR & CO*FOUNDERS*LOUGHBOROUGH TO THE GLORY OF GOD THE GIFT OF DAVID GAMBLE OF ST. HELENS 1895
2	28.125	4-1-10	1895	Taylor (recast from 1736)	Waist	*1736**RECAST 1895* (T)
3	28.625	4-2-19	1863	Taylor		+J.TAYLOR & CO FOUNDERS LOUGHBOROUGH 1863 AA
4	31.5	4-2-18	1863	Taylor		J.TAYLOR & CO FOUNDERS LOUGHBOROUGH 1863
5	32.25	5-3-11	1708	D Hedderley		TE PATER ALME CANAM W BUXTON O D:H O 1708 TΩVN
6	38.625	8-3-15	1708	D Hedderley	G#	TΩ ΘΕΩ MONΩ ΔΟΣΑ R:DETLIFFE I:B (GLORY TO THE ONE GOD)

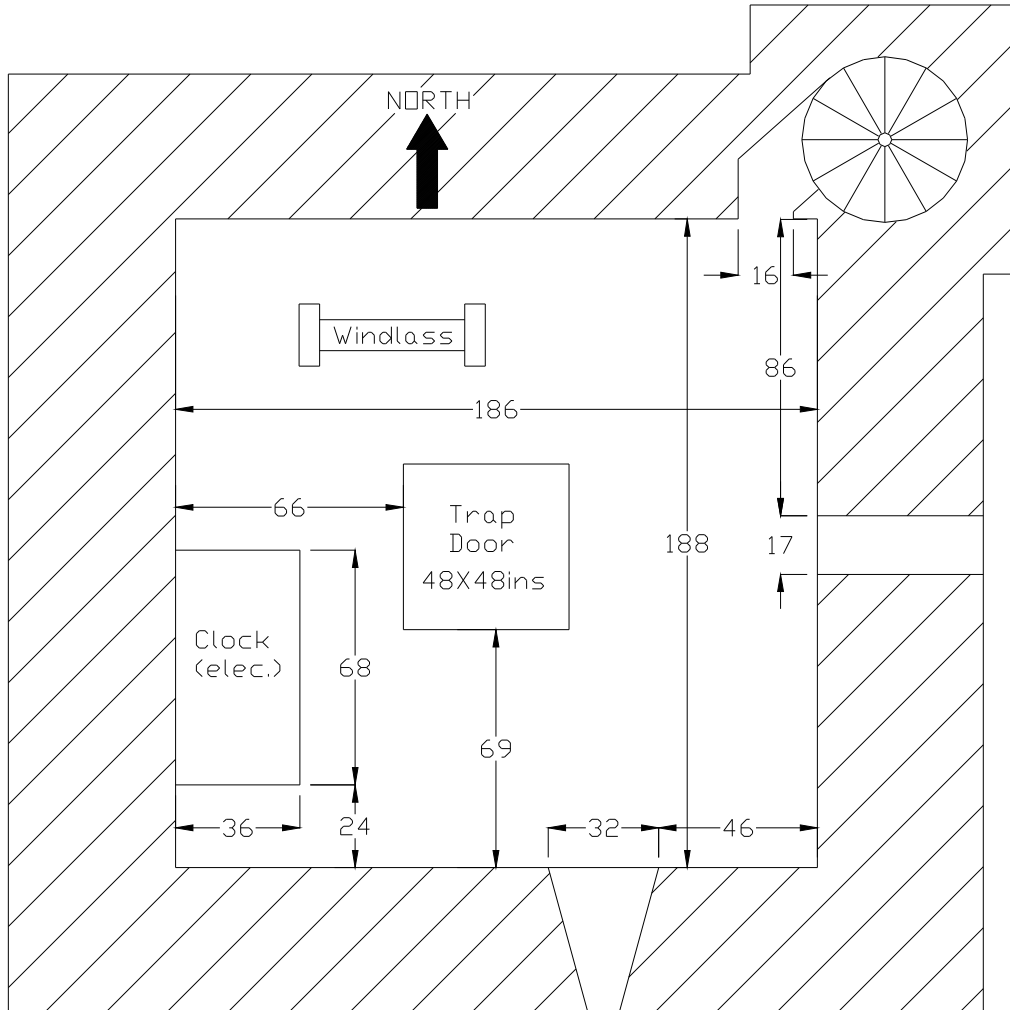
Note Bells rehung and augmented in 1895.



NOTES

- 1) Ceiling height 294ins
- 2) Windows are 85ins high X 41ins wide cills are 164ins above floor
- 3) Screen arch rises 188ins above floor level
- 4) Rope guide frame at 164 ins above floor
- 5) There are 37 steps to the intermediate chamber
- 6) Ceiling supported by 6 full length beams approx 12ins square, beams along south wall reinforced with steel plate
- 7) Central trap door

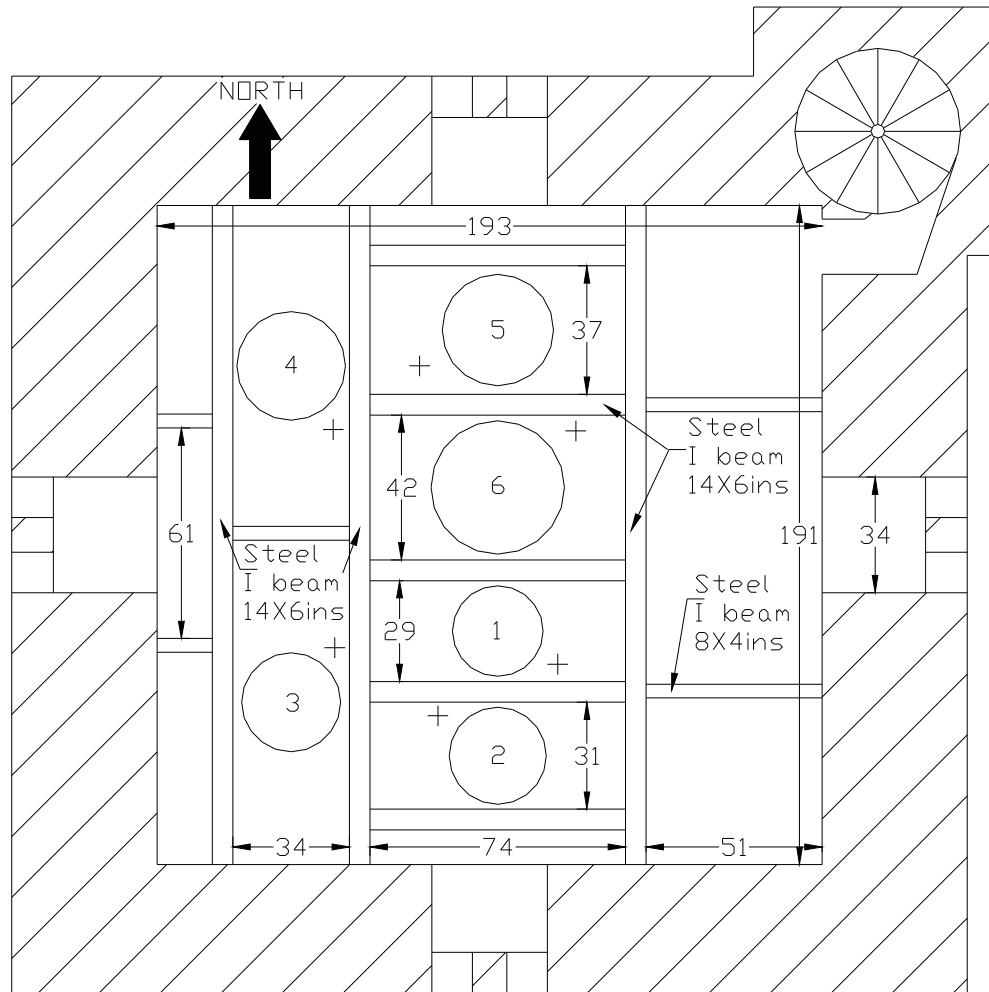
LOCATION ALL SAINTS Bradbourne
TITLE Ringing Chamber (GF)
DRAWN MDBanks 2 December 1998
DIMENSIONS inches



NOTES

- 1) Six beams running E/W approx. 12X12ins supported by 2 beams running N/S approx. 16X10ins
- 2) N/S beam along east wall has been replaced
- 3) Evidence of wood worm in some beams and windlass
- 4) Height to ceiling 109ins
- 5) Clock case height 85ins
- 6) There are 13 steps to the bellchamber

LOCATION ALL SAINTS Bradbourne
TITLE Intermediate Room
DRAWN MDBanks 2 December 1998
DIMENSIONS inches



+ Rope Positions

LOCATION ALL SAINTS Bradbourne
TITLE Bellchamber
DRAWN MDBanks 2 December 1998
DIMENSIONS inches