

# PETERBOROUGH CATHEDRAL

## The Heating Systems

### Introduction

The object of the enquiry was to find out what fuels used in heating the Cathedral may have given rise to particular deposits on the underside of the Nave Ceiling. The Minute Books of the Dean and Chapter were searched from May 1855 to March 1967. What is given here is a Summary followed by extracts from the Minutes. The only easily identifiable relevant material at the Northamptonshire Record Office was also looked at.

A word of caution is needed. The Minute Books have a particular form deriving from the Audit or Chapter Minutes of the Dean and Chapter as re-assembled on the restoration of Charles II in 1660. They record decisions, even hopes, but seldom have Matters Arising or report on what action was carried out. In the earlier instances, the very small amount of necessary business, some meetings only recording who was to serve in what offices for the year ensuing, should mean that the tightly-knit society of the time was largely obedient. However, from the mid-late 18<sup>th</sup> century business is much greater and reflects the larger economic world developing around the Precincts, and sometimes there is a suspicion that what is recorded is an oblique reference to matters taking place outside the framework of the Chapter Meetings themselves.

The complete picture can only emerge if all correspondence and accounts can be examined. A time-consuming ideal, consequently expensive, even if the correspondence were to survive: that in the hands of the Chapter Clerk may, but the correspondence dealt with by the Dean and individual Canons before the 1960s will almost certainly not. There is one batch of letters dealing with the heating system in 1869 in the Northamptonshire Record Office, and that is noted in its place.

### Summary

Before presenting an analysis of the Minute Books, it would be as well to say something about the period before. One can be sure that there was no heating system as such before that recorded below, but there were several hundred years of heat sources which gave off smoke and which should be taken into account. From c.1200 to about 1800 candles would have been the only means of lighting. The Nave altar, sited under the *Agnus Dei* was only moved away in 1830, but we have no knowledge that that was used on a regular basis after 1539. Whether oil was used for lighting is at present unknown, but may have been so used for a short period in conjunction with candles, which of course are still used.

1855	G. G. Scott recommends gas for lighting and raises question of heating.
1855/6	Gas lighting installed in Presbytery.
1860	A trial stove was placed at the E end
1865	More gas lighting and at least 1 more stove installed.
1869	Gas lighting extended to Nave and a full complement of 8 heaters was brought into use.
1899	1 <sup>st</sup> direct evidence that coke was the fuel and Musgrave the type of stove.
1920	The fuel apparently now changes to anthracite
1925	1 <sup>st</sup> sign that electric lighting is being introduced into the public areas of the Precincts.
1930	Coke is now re-introduced as the solid fuel.
1932	Gas lighting has now been replaced by electric lighting.
1954	The Musgrave stoves are declared to be on last legs.
1955	2 replacement Musgrave stoves installed.
1960	G. Pace hoped that coke would be replaced by oil as a fuel.
1963/4	Gurney stoves converted to use oil installed.
1966	November, the Gurney stoves are now working properly.
1993	Gas replaces oil as the fuel for the Gurney Stoves.

### Data:

The dates are those of meetings at which decisions or reports were made, and items noted.

26-5-1855 : letter from G. G. Scott resulting from his 1<sup>st</sup> visit on what needs to be done including "the whole question of heating".

30-5-1855 : G. G. Scott appointed Cathedral Architect; the Cathedral, Singing School and Grammar School are to be lit by gas.

29-10-1855 : the lighting of the Cathedral by gas is to be under the direction of the Architect

5-12-1855 : that Messrs Scidmore & Sons estimate for the gas fittings and branches be accepted and the works be done under their and the Architect's direction.

- 5-2-1856 : M<sup>r</sup> Scott's plan B for improving the altar steps and fixing the additional gas standards be adopted.
- 26-1-1860 : the drawings and estimate marked A and B of M<sup>esses</sup> Steuart & Smith [see 1869] of Sheffield for placing a warming apparatus in the N aisle of the Choir and the Choir [at this time in the Presbytery], the £140 of the estimate does not include brick and masons' work.
- 6-3-1860 : M<sup>r</sup> Smith be allowed to try the efficacy of a warming apparatus at the E end.
- 25-5-1860 : Frederick Yates be paid £1/m for attending to the warming apparatus.
- 28-10-1865 : £4,000 approved for various works, including gas chandeliers, fittings and warming apparatus
- 19-12-1868 : that the 4 [stoves?] recommended by M<sup>r</sup> Scott on the N side of the Cathedral be completed.
- 6-3-1869 : that a number of warming apparatus having been provided by subscription by the Bishop, Dean and Chapter and the Chapter Clerk be placed ready for the winter
- 3-6-1869 : that M<sup>r</sup> Thompson's plan for lighting the Nave with gas be carried out.
- 15-1-1869 : NRO PDC CFG.20 letter from John Jobson Smith to rev. Canon Argles, had received letter dated 12-1-18169 from Canon Argles, mentions that York, Ely and Rochester are heated by Gurney Stoves.
- 22-1-1869 15-2-1869 : NRO PDC CFG.20, three more letters which add nothing.
- 5-3-1869 : NRO PDC CFG.20 letter from John Jobson Smith to rev. Canon Argles, he visited Ely with M<sup>r</sup> Thompson and is uncomplimentary, Ely is very inferior to York - "We both noticed that the temperature was much more agreeable than Ely even now". Ruddle and Thompson to supply a plan of the works
- 10-3-1869 : NRO PDC CFG.20 letter from John Jobson Smith to rev. Canon Argles, sends estimate for 6 gill air warmers, just like those already in the New Building, £350 10s 0d.
- 27-5-1869 : NRO PDC CFG.20 letter from John Jobson Smith to rev. Canon Argles, saw 6 heaters working, noted that all 8 should be lit, but no need to keep them heated through the night as was the habit elsewhere, "The windows and the roof are not in a good condition it will be necessary to have them attended to during the Summer"
- 26-11-1870 : 2 or more gas lights be provided in the West Porch.
- 3-8-1871 : that the increased size and quantity of iron pipes necessary for lighting the Cathedral be provided, and that iron pipes be placed on and along the screen [Blore's] to replace the temporary coronas.
- 26-7-1882 : agreed that the Ellacombe Chimney apparatus be put in the Cathedral after due notice had been given to the ringers.
- 30-3-1883 : agreed that the Dean and Chapter seal be fixed to the contract with M<sup>r</sup> Thompson for taking down and rebuilding the Central Tower [hiatus ensues]
- 2-3-1889 : an estimate for warming the Choir is to be got and that M<sup>esses</sup> Hoole be asked to send someone to receive instructions.
- 10-4-1889 : estimates for putting gas into the Choir [now in Nave, or do they really mean the Presbytery?] amounting to £85 3s 3d for the Choir, Transepts and Lantern accepted. It was agreed that the arrangement for warming the Choir [see above] be left to Canon Argles and Canon Clayton.
- 9-5-1889 : the Dean and Canon Residentiary to examine the gas standards and decide if they should be regilt and coloured at an estimated cost of £6 0s 0d.
- 29-5-1890 : agreed to accept M<sup>esses</sup> Amies estimate for repairing the stoves in the Nave and the soot doors in the stove pipes etc. @ £21 0s 0d and £1 15s 0d respectively.
- 6-7-1891 : M<sup>r</sup> Plowman to replace the defective stove pipes under the direction of the Dean and the Canon in Residence, buying the material from M<sup>esses</sup> Amies at 6s /yd.
- 26-10-1891 : that M<sup>r</sup> Gates be thanked for his gift of the Vestries at the West End of the Cathedral made from the woodwork of the 1831 Choir [relevant to siting of Vestry stove below?]
- 3-8-1894 : the Dean and Canon Treasurer are authorised to have, amongst other things, the Cathedral stoves cleaned out and repaired.
- 17-12-1894 : the Dean and Chapter feel that they are not in a position to be "consumers of the Electric Light in the Cathedral".
- 16-9-1895 : tender of M<sup>esses</sup> Beeby & Son to supply coke for the Cathedral at 13s 4d /ton be accepted.
- 28-7-1896 : the stoves in the Vestry and the other stoves and piping be examined and repaired.
- 27-9-1898 : that the necessary repairs be done to the Cathedral stove pipes and that a new Musgrave stove be got for the Vestry in place of the existing one which is worn out, the total cost not to exceed £40 0s 0d.
- 2-10-1899 : a new Musgrave stove to be placed in the N Transept; the earthenware pipe in the N Choir Aisle and the other iron pipe in the S Transept be repaired; that the Coke House [on site of WCs outside the S Transept] floor be repaired by M<sup>esses</sup> Thompson and C<sup>o</sup> by filling it up and cementing it; that the Gas Company's tender of 14s 0d/ ton of coke be accepted.
- 2-10-1900 : ditto for 20s 0d /ton be accepted
- 25-10-1901 : ditto from Peterborough Gas C<sup>o</sup> @ 14s 0d /ton be accepted; a new stove is to be ordered from M<sup>esses</sup> Amies & Son at a cost of 36 0s 0d exclusive of fixing.
- 25-10-1902 : that the question of repair or removal of the smoke pipe of the stove in the NE corner of the Cathedral be dealt with by the Canon Treasurer.
- 2-12-1902 : Canon Clayton reported that the smoke pipe was now repaired.
- 31-8-1904 : tender from Peterborough Gas C<sup>o</sup> @ 13s 9d /ton of coke accepted.

25-9-1905 : tender from Peterborough Gas C<sup>o</sup> @ 13s 6d /ton of coke accepted; the necessary repairs and new piping for the stoves to be ordered by the Canon Treasurer from M<sup>esses</sup> Thompson & C<sup>o</sup>.

21-9-1906 : the approximate estimates of Amies & Son for work including new piping for the Cathedral stoves of £18 0s 0d, and for a new front for the Musgrave stove in the Lady Chapel for £3 5s 0d be accepted; tender from Peterborough Gas C<sup>o</sup> @ 13s 6d /ton of coke accepted.

10-9-1907 : that repairs to the Cathedral stoves be done by M<sup>esses</sup> Amies & Son, and a new coke barrow and 2 new shovels be got, and 3 new sets of fire-bricks; tender from Peterborough Gas C<sup>o</sup> @ 15s 6d /ton of coke accepted.

6-10-1908 : that the approximate estimate of M<sup>esses</sup> Amies & Son of £15 0s 0d, for a new smoke pipe for the stove near the font, and for other work at the stoves of £2 15s 0d, and for a new body for the barrow for £2 8s 6d be accepted; tender from Peterborough Gas C<sup>o</sup> @ 16s 6d /ton of coke accepted.

3-4-1909 : M<sup>r</sup> Walter Tapper was asked, *inter alia*, to design and cost new gas standards to replace those in the stalls at present.

10-5-1909 : the designs for the new gas standards had been received and were to be submitted to Miss Argles with the suggestion that candles be used, not gas

7-9-1909 : Plowman [head verger] reported that repairs were needed to the stoves, and these are to be carried out by M<sup>esses</sup> Amies & Son; tender from Peterborough Gas C<sup>o</sup> @ 16s 6d /ton of coke accepted.

11-10-1910 : tender from Peterborough Gas C<sup>o</sup> @ 16s 0d /ton of coke accepted; a new design for the oak casing round the gas metre was needed.

28-10-1910 : the gas metre in the Morning Chapel had been cased at a cost of £10 5s 0d.

10-10-1911 : tender from Peterborough Gas C<sup>o</sup> @ 16s 6d /ton of coke to the end of the year, and then at 17s 0d to the end of the Season, accepted.

9-9-1912 : that the stove in the Nave near the organ be repaired, if it can be done at reasonable cost and, if undesirable, the purchase of a new stove to be left to the Dean and Canon Treasurer; tender from Peterborough Gas C<sup>o</sup> @ 17s 0d /ton of coke accepted.

1-11-1912 : M<sup>r</sup> R. Capps [a verger] wrote to ask to be relieved of that part of his duty requiring him to work at the Cathedral stoves.

3-12-1912 : M<sup>r</sup> Capps to be excused, and 2s 0d /wk to be deducted from him towards the cost of a man @ 6s 0d /wk to help on the stoves.

31-7-1913 : that 3 sets of bricks be ordered for the Musgrave stoves.

31-10-1913 : tender from Peterborough Gas C<sup>o</sup> @ 17s 0d /ton of coke accepted.

25-10-1915 : tender from Peterborough Gas C<sup>o</sup> @ 20s 0d /ton of coke accepted.

1-9-1916 : Mackley and Lowe to have their weekly wages increased by 1s 6d /wk "when fires commence in the Cathedral".

1-4-1917 : the question of the storage of coke for next winter is to be deferred.

1-6-1917 : that 50 tons of coke at 28s 0d /ton be bought and put in the Archdeacon's stables.

6-5-1918 : the Chapter Clerk is to find out what the savings in the gas bills were since the beginning of the war, and the same for electricity in having 6 instead of 10 Choral Services [probably referring to the organ].

29-6-1918 : 50 tons of coke @ 30s 0d /ton to be bought.

12-4-1919 : the estimate of £14 8s 0d from M<sup>esses</sup> Amies and Son for repairing stove pipes, exclusive of labour charges, accepted.

7-9-1920 : the necessary quantities of anthracite and coke are to be bought at once from M<sup>esses</sup> Beeby & Son and the Peterborough Gas C<sup>o</sup>.

21-7-1921 : the repairs to the stoves are to be done by Amies & Sons.

16-9-1921 : that enough anthracite be bought from M<sup>esses</sup> Beeby & Son.

8-8-1922 : that M<sup>esses</sup> Beeby & Son supply anthracite on the best terms possible.

13-10-1925 : that electric lights be substituted for gas in the Precincts

9-10-1928 : the Dean and Chapter do not see their way to removing the stove by the Hetley grave in accordance with the wishes of M<sup>r</sup> Pearson; the proposed contract to supply electricity to the Cathedral is postponed.

17-9-1929 : resolved to get tenders for anthracite from M<sup>esses</sup> Beeby & Lord, M<sup>esses</sup> Ellis & Everard and the Peterborough Coal C<sup>o</sup>.

9-9-1930 : the tender of Ellis & Everard to supply the best furnace coke @ 31s 0d /ton accepted, but the right is reserved to return to anthracite is the result is not satisfactory.

11-7-1931 : the estimate of £8 0s 0d from J. Lucas l<sup>td</sup> for concreting the coal-place floor accepted.

20-9-1932 : that the question of paying the City for electricity supplied be deferred.

22-11-1932 : offer of £70 0s 0d by Corporation to supply electricity to the Cathedral, the Becket Chapel, Almshouses and the Organ accepted @ 1d /unit, and that electricity be put into the Becket Chapel.

20-6-1933 : Ellis & Everard's tender for coke @ 30s 6d accepted.

7-5-1934 : tenders from Ellis & Everard and Beeby & Son to supply coke to the Cathedral to be referred to the Canon Treasurer.

14-1-1936 : the Dean and Chapter assent to the increase of 1s 0d in the increase /ton of coal on the understanding that this went to the miners and not to any middleman.

12-5-1936 : 3 tenders for the provision of coke be got for the next meeting.

2-2-1955 : estimate of the Eastern Gas Board of £1 15s 5d /ton of coke was accepted.

9-6-1936 : the matter of fuel left to the Chapter Clerk and the Head Verger.

17-7-1936 : Ellis & Everard to supply best furnace coke @ 34s 6d /ton.

11-5-1937 : Ellis & Everard to supply best furnace coke @ 37s 0d /ton.

14-6-1938 : Ellis & Everard to supply best furnace coke @ 37s 0d /ton.

20-9-1938 : an estimate of approximately £26 0s 0d was submitted by M<sup>esses</sup> Amies & Sons Ltd for repairs to the Musgrave stoves in the Cathedral.

11-7-1939 : Ellis & Everard are to supply 125 tons of Blackwell coke at 37s 0d /ton.

12-12-1938 : Ellis & Everard reported that the Ministry of Mines authorised an increase of 10d /ton of coke from 11-12-1938

14-5-1940 : Ellis & Everard advised the Dean and Chapter of a rise in the cost of fuel due to an increase in freight costs.

10-8-1943 : arrangements are to be made to store coke in the Precincts.

15-5-1946 : M<sup>esses</sup> Amies & Sons reported that the stove in the apse is beyond repair, being over 50 years old.

3-6-1946 : the estimate of £ 115 for a new N<sup>o</sup> 7, 12N Musgrave Slow Combustion Stove had been received from M<sup>esses</sup> Amies & Sons, exclusive of removing the old one and erecting the new: to be ordered as soon as possible.

10-6-1947 : Ellis & Everard L<sup>td</sup> wrote to say that the basic allocation of coke for the Cathedral from 1-5-1947 to 30-5-1948 was 89 tons, but they could not supply more than 75 tons, 3 tons /summer month and 10 tons /winter month.

22-6-1954 : letter from the Architect enclosing a report from M<sup>esses</sup> Amies & Sons on the serious condition of the stoves in general, therefore Amies & Sons are to examine them and send in an estimate as soon as possible.

19-8-1954 : M<sup>r</sup> Riley, the 3<sup>rd</sup> verger, thought that the present stoves could be used for next winter, but it was preferable for 1 stove of Gurney type be installed in the S Transept before then.

6-9-1954 : as no report had been received from M<sup>r</sup> Leslie Moore, Amies & Sons or M<sup>esses</sup> Musgrave & C<sup>o</sup>, the Chapter Clerk is to write to M<sup>r</sup> Moore to ask if he had any objection to the Dean and Chapter handling the matter locally.

2-2-1955 : the Eastern Gas Board offered to supply coke @ £ 1 15s 6d /ton: 5 tons to be ordered as a trial.

20-6-1955 : the vergers are not generally in favour of the Gurney type of stove and therefore the present Musgrave type is to be adopted.

11-7-1955 : M<sup>esses</sup> Amies & Sons to repair stoves 5, 6 and 8, and to supply 2 new ones at a cost of £402 0s 0d, not counting the fixing

*Memorandum of a meeting held 20-5-1955* : about heating, Amies & Sons are to see how far 5 of the stoves are repairable. Amies reported that spare parts had been ordered and that the whole should not cost more than £2,000.

23-8-1955 : Amies & Sons have ordered 2 new Musgrave stoves to replace the 2 beyond repair and will look at the other defective stoves to see if any were repairable; the stove in the S Aisle at the entrance to the Apse to be moved elsewhere; the Treasurer to enquire about electric heaters.

4-1-1960 : Amies & Sons L<sup>td</sup> wrote to say they were closing early in 1960 and that their business was to be carried on by The Millfield Heating & Plumbing C<sup>o</sup>, the new firm was to be invited to inspect the stoves when the winter heating season is over.

16-5-1960 : The Millfield Heating & Plumbing C<sup>o</sup> wrote to the effect that Musgraves had stopped making stoves of the type used in the Cathedral, the Chapter Clerk is to write to the Architect [G. Pace now] to seek advice.

20-6-1960 : the Architect had replied that he hoped that stoves using coke would be replaced with those heated by oil. Enquiries were to be made at Gloucester where the stoves had recently been replaced.

11-10-1960 : the Dean of Gloucester replied saying how Gurney stoves had been converted to oil. The Architect is to look into free-standing heaters better than Gurneys.

9-3-1962 : M<sup>r</sup> J. C. Hargreaves, a Cathedral Steward wrote drawing attention to the need to improve the heating, and that electricity was better than oil.

14-3-1963 : the Musgrave stove in the N Transept is now unusable and Millfield Heating & Plumbing C<sup>o</sup> is instructed to replace it with a Gurney, the Millfield Heating & Plumbing C<sup>o</sup>'s engineer had reported that another 4 stoves were derelict and not good enough for heating during the next winter. Colt Ventilation C<sup>o</sup> to be contacted. The Architect had replied to the Chapter Clerk that the cost of conversion from coke to oil was relatively small and that there would be a reduction of "impurities" in the air etc. The Millfield Heating & Plumbing C<sup>o</sup> is to be asked for an estimate for the installation of Gurneys converted to oil.

30-4-1963 : a visit had been paid to Gloucester and it seemed that the system was the right one for Peterborough. Contact had been made with the London Warming C<sup>o</sup> who provide Gurneys, and a visit in conjunction with Millfield Heating & Plumbing C<sup>o</sup> was to be made and both firms would probably work together.

29-5-1963 : the report resulting from the joint visit is to be sent to M<sup>r</sup> Pace so that an order can be placed. The new stove should be placed at the entrance to the New Building on the S side. Total cost was likely to be £7,800, excluding the payment to be made for the new stove in the N Transept

8-1-1964 : the Chapter Clerk has written to the London Warming C<sup>o</sup> thanking it for work done, but pointing out deficiencies. The S Transept door caused problems and the Architect is to be asked how to improve it.

12-2-1964 : The deficiencies had to be discussed with the Architect, there being trouble with, ignition, carbonisation and damage already caused by over-heating.

17-3-1964 : a thorough inspection of the stoves had been made and the report arising is to go to the Architect.

16-4-1964 : The Chapter considered the report and noted that considerable work was taking place.

12-5-1964 : a report from the Architect on how improvements might be made was considered.

28-7-1964 : the Chapter Clerk was instructed to write to the Architect about delays in putting the system to rights.

1-10-1964 : a representative of Messrs Pether Associates who had made the report sent to the Architect reported that the system could now be accepted, although problems of clock-setting were to be referred to the Architect.

18-12-1964 : the Architect had proposed a maintenance contract, but the Dean and Chapter felt it could not be examined until all the troubles had been put right.

4-1-1965 : the report of the meeting of the Architect, the London Warming Co, the Millfield Heating & Plumbing Co, Pether Associates, John Lucas and a member of the Chapter: noted that at the start of the 1964/5 heating season 3 explosions in units in the Nave had probably been caused by the down draught and "positive pressure conditions outside the Cathedral. Therefore extend the flue pipes for the stoves on N and S sides of the Choir [Presbytery] and for those on each side of the West Door.

8-3-1966 : Mr Pether had written to say a specific maintenance agreement was needed to service the "sophisticated associated equipment" and vergers could not be expected to do this.

28-10-1966 : Mr Pace wrote about the unsatisfactory state of the heating. It was noted that the heating system had not yet been handed over to the Cathedral, nor could it be until it worked satisfactorily for a period of time.

19-11-1966 : the stoves are still not satisfactory.

23-11-1966 : the stoves were now working properly and discussions were to be had with the contractors about future maintenance.

24-2-1967 : spares for heating for heating system to be bought for c. £100 0s 0d and the supply to be kept up by the Millfield Heating & Plumbing Co.

30-3-1967 : Millfield Heating & Plumbing Co to attend to the S Transept heater and leave it in a tidy condition.

Gas introduced in 1993.