

The background of the cover is a photograph of St Andrew's Church in Chesterton. The church is a large, light-colored stone building with a prominent, tall, pointed spire. The architecture features Gothic-style windows and a crenellated roofline. In the foreground, there is a grassy area with several gravestones of various shapes and sizes. Some tall, dark green cypress-like trees are planted in front of the church. The sky is a clear, bright blue. The title text is overlaid on the image in a white, serif font with a thin black outline.

ST ANDREW'S, CHESTERTON

THE ORGAN

A HISTORY

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Researched, designed and written by Paul Hale, with thanks to Peter Wadl and to the
Revd Dr Nicholas Thistlethwaite, whose earlier researches have been invaluable.

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The Organs of St Andrew's Church, Chesterton

The first organ in St Andrew's was possibly that supplied by Henry Bryceson & Son in 1860. The instrument stood in a west gallery, as most organs did until the influence of Oxford Movement and the Ecclesiological Society (formed in Cambridge as the Cambridge Camden Society) moved organs and choirs to the many new and extended chancels being built as churches were restored. Consequently, at some stage later in the nineteenth century, the Bryceson organ was removed from the gallery and placed on the floor at the east end of the north nave aisle. Revd Andrew Freeman's description of the organ in 1897 suggests that several stops were prepared for later insertion. This was often the case (and to some extent has remained so almost to this day) when church funds were insufficient.

In 1900 a major rebuild was put in hand by Hill & Son. The organ was moved into a chamber newly created on the north side of the chancel, speaking into the church through the tracery of the former window at the head of the north aisle and through a large new-formed arch into the Chancel, in which stood the console, attached to the instrument in the usual fashion. Unfortunately, a screen of dummy pipes was located behind the former window, which must largely have prevented the sound from reaching down the nave.

1990 specification:

Great Organ (C-f³)

Open Diapason*	8
Gedact *	8
Dulciana*	8
Gamba	8
Principal	4
Flute	4
Twelfth*	2 ² / ₃
Harmonic Piccolo	2

Swell Organ (C-f³)

Double Diapason*	16
Open Diapason*	8
Stopped Diapason (bass/treb)*	8
Cone Gamba	8
Echo Gamba	8
Principal*	4
Fifteenth*	2
Mixture*	II
Cornopean	8
Oboe*	8
Tremulant	

Pedal Organ (C-f¹)

Pedal Pipes*	16
Bass Flute	8

Couplers

Swell to Great
Great to Pedal
Swell to Pedal

Accessories

2 composition pedals to Great
Lever Swell pedal
Hand blowing

* Stops recorded by Revd Andrew Freeman in 1897, and so probably part of the original Bryceson organ of c.1860 (as noted by Revd Dr Nicholas Thistlethwaite).

Sometime between 1929 and 1939, one of the Swell strings was re-tuned to become a Voix Celestes, and the other became or remained an Echo Gamba.

In 1939 Hill, Norman & Beard [HNB] completely rebuilt the instrument at a cost of £838 10s., turning it through ninety degrees within the chamber so that it spoke west, removing the dummy front pipes on that side, fitting electro-pneumatic actions, top-note machines to extend the compass from 54 to 61 notes, a detached stop-key console, and adding a 16ft Gamba to the Pedal/Great with its [mitred] bass pipes in the arch on the north side of the chancel, through which the organ had formerly spoken. The Swell Mixture was replaced by a Piccolo, the Lieblich Bourdon was placed on a unit chest and was duplexed to the Pedal, and a Great Tromba 8ft was 'prepared-for'. HNB fitted new bottom octaves to the Swell Diapason and Gamba ranks, which rather over-crowded the swell-box and left one narrow slider out of use (with no stop mechanism).

The HNB Order Book entry for this work reads thus:

Pedal (CC-F)			
1	Sub Bass	16	old
2	Contra Gamba	16	12 new, rest from Great No.7
3	Lieblich Bourdon	16	from Swell No.15
4	Bass Flute	8	12 new, rest from No.1
Great (C-c⁴)			
5	Great Bass	16	12 new from No 2, rest from No 7
6	Open Diapason	8	old
7	Echo Diapason	8	old Gamba revoiced
8	Stopped Diapason	8	old stop, re-scaled
9	Dulciana	8	old, revoiced, new bass octave of metal
10	Principal	4	old pipes, revoiced
11	Wald Flute	4	old pipes, revoiced
12	Twelfth	2 ² / ₃	old pipes, revoiced
13	Fifteenth	2	old pipes, ex Swell
14	Tromba	8	pipes prepared for
Swell (C-c⁴)			
15	Lieblich Bourdon	16	old Double Diapason
16	Open Diapason	8	old with new metal bass octave
17	Lieblich Gedackt	8	old pipes, revoiced
18	Echo Gamba	8	old pipes, revoiced
19	Vox Angelica	8	old Celestes pipes
20	Gemshorn	4	old Principal pipes
21	Harmonic Piccolo	2	old pipes, ex Great
22	Cornopean	8	old pipes, revoiced with new harmonic trebles
23	Oboe	8	old pipes, revoiced
24	Tremulant		

Swell to Pedal, Great to Pedal, Swell to Great, Swell Octave, Sub Octave, Unison Off
New detached oak console of stop-key type situated in the North Transept 25ft from organ front. Ivory keys and RCO pedal-board.

Four thumb pistons acting on Swell.

Reversible pedal acting on Great to Pedal.

Four thumb pistons acting on Great.

Cancel bars to each division.

Four toe pedals acting on Great and Pedal.

Mechanical swell pedal (retained).

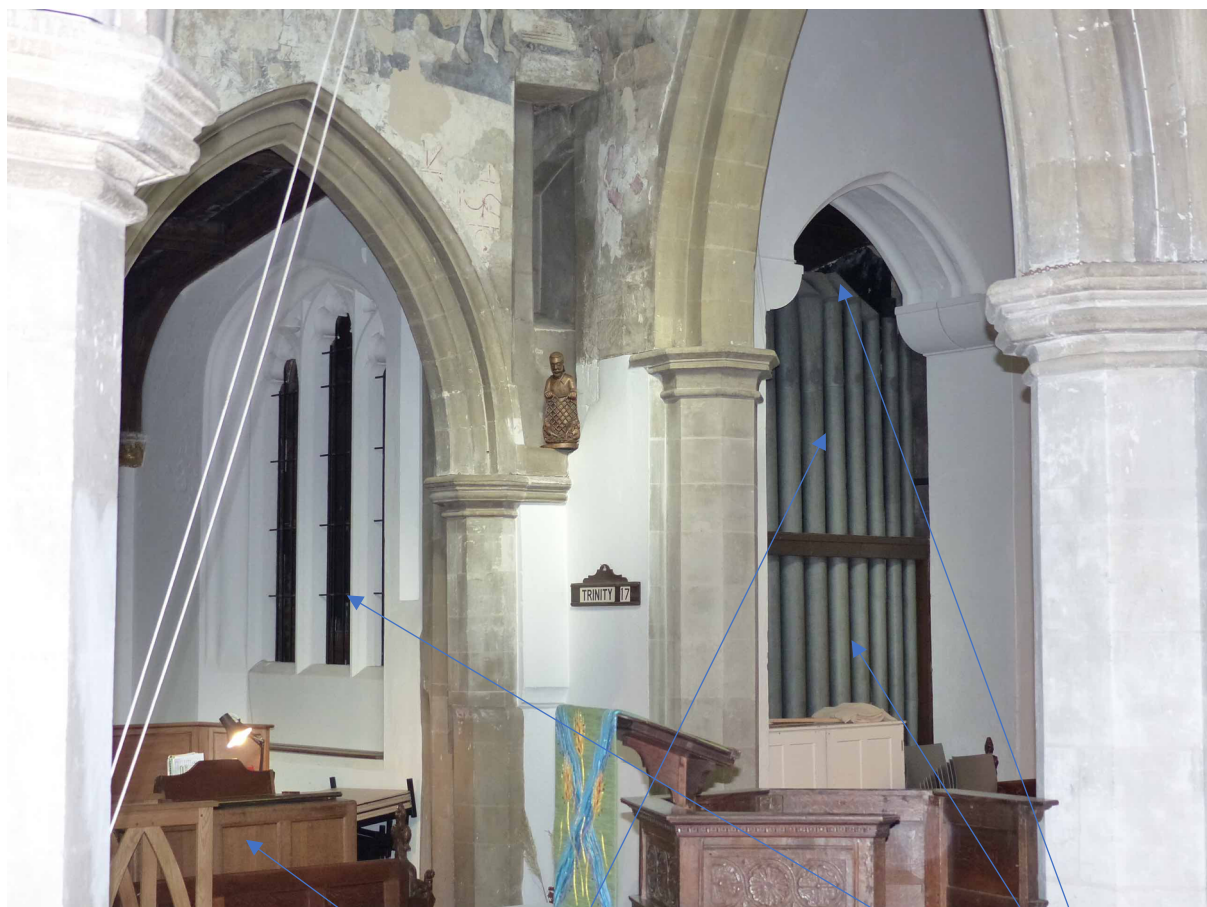
Reversible pistons acting on Swell to Pedal and Great to Pedal.

In 1961 HNB cleaned the organ. They replaced the Great 2ft with a new Fifteenth, replaced the old 2²/₃ft with a new, tapered Nazard, and fitted a Larigot 1¹/₃ft on a Great slide unused in 1929, with its bass on a separate chest. The Fifteenth and Nazard pipes were made in the Netherlands by Stinkens, and were voiced in a modestly neo-baroque manner. The Larigot was possibly the old Dulciana cut down and completed to the top with other old treble pipes; it had a distinctly poor stop action. A 32ft Harmonic Bass was fitted, with the luxurious addition of twelve 10²/₃ft stopped wooden pipes acting as a soft quint in the bottom octave, a feature of several Hill, Norman & Beard rebuilds over the decades. Five stops changed name:

Pedal: Contra Gamba became Geigen 16ft
Swell: Lieblich Bourdon became Double Diapason 16ft
Swell: Gemshorn became Geigen Principal 4ft
Great: Great Bass became Contra Geigen 16ft
Great: Wald Flute became Flute 4ft

In 1980 Norman Hall & Sons extended the 16ft Geigen all the way up to a Pedal Mixture IIrks. They also extended the Pedal Bourdon up to 4ft, added a Trumpet/Trombone unit to play at 16ft & 8ft on the Pedal and 8ft on the Great, replaced the Swell Oboe with a second-hand 3-rank Mixture, and revoiced the Swell Cornopean as a surprisingly bright, somewhat misnamed 'Trumpet Marcial'. A Kimber-Allen diode-switching system was installed to control the organ.

Some twenty-five years later, the console was moved by Bishop & Son of Ipswich, who at the time maintained the organ; the previously mechanical swell pedal mechanism was replaced with a modern electric machine and the extended reed rank was revoiced.



This shows the back of the 1939 console, the openings to Nave and Chancel, and the basses of the 16ft Geigen/Gamba, which are heavily mitred at the top.

With the 1939 rebuild becoming rather unreliable (particularly the console), the soundboards giving trouble, the leatherwork beginning to fail, and the tonal scheme being less and less appropriate for the church's needs and aspirations, an initial report was commissioned in 2013 from the Revd Dr Nicholas Thistlethwaite, the acknowledged authority on organs in the Cambridge area. Subsequently the present writer was called in to act as consultant for a reconstruction of the instrument. When I surveyed the organ in October 2017, I proposed two alternative schemes for consideration:

Scheme A

- replace the worn-out console with a new low-level stop-knob console on a mobile console platform.
- install a new computerised transmission system with new power supplies in console and organ.
- a top overhaul of soundboards; improve action to current Larigot slide.
- overhaul unit chests, top-note machines and slider machines as necessary.
- releather interior under-action motors.
- check reservoirs for any necessary repairs.
- clean and adjust all chest and lever magnets, replacing any lever magnets which are at all worn at the pivot.
- clean the pipework and restore flute stoppers and bass pipe tuning tongues as may be found necessary.
- repair the Geigen 16ft bass pipes where the heavy mitred tops are collapsing.
- move the $10^{2/3}$ ft quint pipes for the Harmonic Bass to behind the Swell and move the Trombone bass from behind the Swell to where the quint pipes stood – this will enable the Trombone bass to speak out much better (thus matching its treble).
- move the Great Fifteenth (loudened) to the current Viole slide, discarding the poor second-hand Viole pipes, which run only from tenor F despite the soundboard being bored down to CC.
- in its place fit a new Mixture, which may have to be two ranks in the bass because of the space available. It can be 22.26 at C1, then 19.22.26 from C13, breaking back one rank on each succeeding C, ending at 8.12.15.
- remove the poor Larigot and replace it with a new Tierce, scaled to the Nazard.
- regulate carefully all the Great pipework, which currently is extremely uneven.
- revoice the Swell Trumpet back to a more traditional Swell reed tone.
- regulate carefully all the Swell pipework, which currently is irregular and somewhat ill-balanced.
- assess whether the blower can be fitted into a new silencing cabinet to reduce the slightly invasive blowing noise. It is a fine unit, very solidly made, and it would be a shame to replace it simply to achieve silence, though that may be the best option.
- clean the walls of the chamber whilst the organ is being restored, and check the ceiling and roof for leaks – there are large water marks on the ceiling lining.

Scheme B

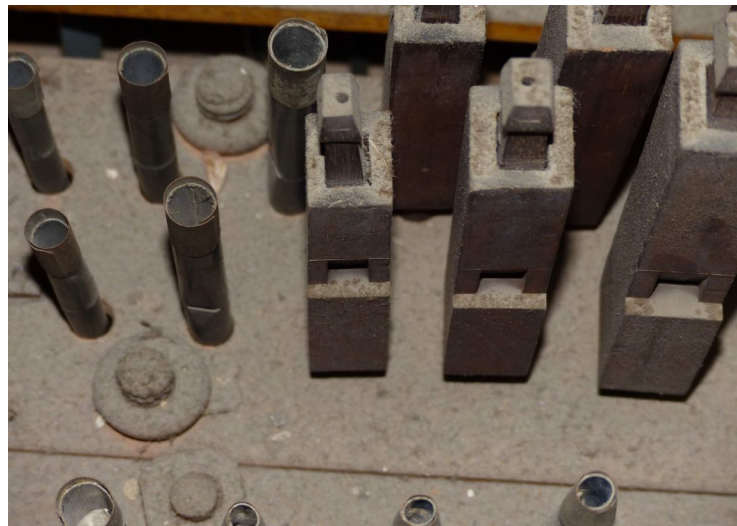
- carry out all the items in Scheme A except for moving the Pedal quint pipes, which will need to be discarded and the quint pitch of the Harmonic Bass derived instead from the Bourdon rank. The Trombone is still to move to the present place of the $10^{2/3}$ ft quint pipes.
- enlarge the Swell box backwards and fit a Bassoon / Hautboy 16ft/8ft rank on a unit chest, tuned from behind. This would take up the space currently occupied by the Trombone.

- derive the Swell Bassoon/Hautboy to the Great at 8ft and to the Pedal at 16ft.
- replace the poor Swell Piccolo.
- derive the Great Trumpet to the Swell manual at 8ft, to act as a solo stop against the Great.
- derive the Pedal Geigen unit to the Great to provide a second Open Diapason; an additional top five pipes need adding to the rank.

In the event, a development of the more comprehensive Scheme B was selected, along with the Nottingham organ-builders Henry Groves & Son, who had in recent years carried out a notable similar rebuild the other side of Cambridge, at Newnham parish church. Their work there impressed the decision-makers at Chesterton, and Groves won the contract. The project was somewhat delayed owing to the Covid pandemic of 2020 - 2021, but was completed in May 2021. Its official hand-over was further delayed by a break-in to the church via the organ chamber's external window, which necessitated fitting a strengthened panel in front of the blanked-off window and replacing some Great Trumpet pipes, which had been trodden on by the would-be thieves (who found nothing to steal, but ransacked the vestries in the attempt).

Photographs taken before the rebuild

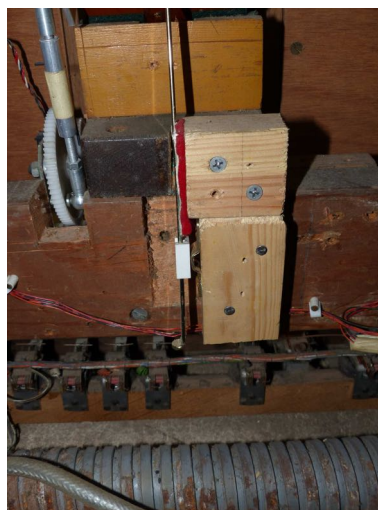
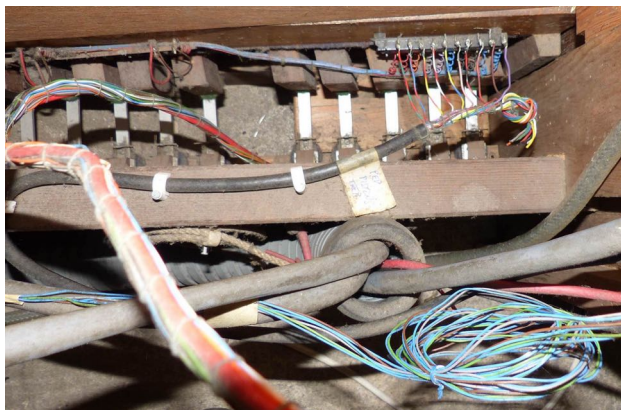
A large amount of dust and debris sitting on the Great rackboards and clogging the pipes.



HNB Nazard pipes of 1961 and the empty holes in the bass of the Viole slide



*Scruffy
console
electrics &
swell pedal
alterations.*



*Rather worn and weary
console controls
and keys*



*A 'top note machine'
cluttering up the middle
of the Swell box,
severely hindering
access for the tuner.*

The Henry Groves & Son rebuild

New chests of Henry Groves direct-electric pattern replaced the worn-out old Great and Swell soundboards and most of the old unit chests. A new space-saving wind system of Groves design was installed. There are no large leathered wind reservoirs to need releathering in the future.

The tonal concept was to develop better-balanced and more complete Diapason choruses on all three departments, to replace the Great Larigot with a more useful Tierce, to return an Oboe / Hautboy to the Swell, not only at 8ft pitch but also at 16ft, to help generate a 'Full Swell' ensemble with the revoiced Diapason chorus, added HNB Fifteenth and Nicholson Cornopean which replaced the particularly poor 'Trumpet Marcial'. The note action, having one electro-magnet per pipe, allows for the Swell Hautboy also to draw on the Great, so that it may – usefully – be accompanied on the Swell. In like manner, the Great Trumpet – a dominant stop placed behind the chancel organ arch, also appears on the Swell manual, cutting out the other Swell stops from that manual but allowing them still to work through Swell to Great and Swell to Pedal. Thus, a hymn melody (for example) can be soloed out on the Trumpet against a combination such as 'Full Swell coupled to Great to Fifteenth'. The Great *Cornet séparé* ranks (flutes at 8, 4, $2\frac{2}{3}$, 2, $1\frac{3}{5}$) draw together on the Swell keyboard as a Cornet, thus allowing the Cornet to be soloed against the Great or used in duo with it – the Great Tremulant works to these ranks alone, enhancing the possibilities. The writer has specified these techniques in a number of organs, where it is much appreciated by the resident organists, as they give the player much of the flexibility of a 3-manual instrument.

2021 Specification

Great Organ (61 notes)

1	Open Diapason	8	existing, regulated
2	Geigen Diapason	8	existing, rank B
3	Stopped Diapason	8	existing, regulated
4	Principal	4	existing, regulated
5	Flute	4	Nicholson pipes
6	Nazard	$2\frac{2}{3}$	Nicholson pipes
7	Fifteenth	2	existing, loudened and regulated
8	Piccolo	2	existing, since 1939 on the Swell
9	Tierce	$1\frac{3}{5}$	Nicholson pipes
10	Mixture 22.26.29	III	HNB pipes
11	Trumpet	8	existing, rank C, revoiced
	<i>Tremulant</i>		to flutes 8, 4, $2\frac{2}{3}$, 2, $1\frac{3}{5}$
12	Swell Hautboy	8	rank E
	<i>Swell to Great</i>		

Swell Organ (61 notes)

13	Lieblich Bourdon	16	rank D, existing bass
14	Open Diapason	8	existing, regulated
15	Lieblich Gedeckt	8	existing, rank D, regulated
16	Echo Gamba	8	existing, regulated
17	Voix Celeste (t.c.)	8	vintage Hill pipes (Dulcianas)

18	Principal	4	existing, regulated
19	Fifteenth	2	replacement N&B pipes
20	Mixture (15).19.22	II-III	existing, revised and augmented
21	Bassoon	16	Nicholson pipes; rank E
22	Cornopean	8	replacement Nicholson rank
23	Hautboy	8	Nicholson pipes; rank E
24	Vox Humana	8	addition; vintage pipes of unknown origin

Tremulant

25	Great Trumpet	8	rank C
26	Great Cornet on Swell	V	draws Great flutes 8, 4, 2 ² / ₃ , 2, 1 ³ / ₅

[other Swell stops cease to work on the Swell manual when these last two stops are drawn, but continue to work through Swell to Great and Swell to Pedal; this enables these two stops to be soloed out against the Great or against the Great & Swell coupled]

Octave

Unison Off

Sub Octave

Pedal Organ (32 notes)

27	Harmonic Bass	32	rank A, bass quinted with D
[when the Trombone is drawn, the quint rank for the Harmonic Bass changes to rank A]			
28	Geigen Diapason	16	existing, rank B, regulated
29	Subbass	16	existing, rank A, regulated
30	Lieblich Bourdon	16	rank D
31	Geigen Principal	8	existing, rank B, regulated
32	Bass Flute	8	existing, rank A, regulated
33	Fifteenth	4	existing, rank B, regulated
34	Mixture 19.22	II	existing, rank B, regulated
35	Trombone	16	existing, rank C, revoiced
36	Bassoon	16	rank E
37	Trumpet	8	existing, rank C, revoiced

Great to Pedal

Swell to Pedal

Great & Pedal Pistons Combined

Generals on Swell Toe Pistons

Terraced low-level mobile console in oak, with the following playing aids:

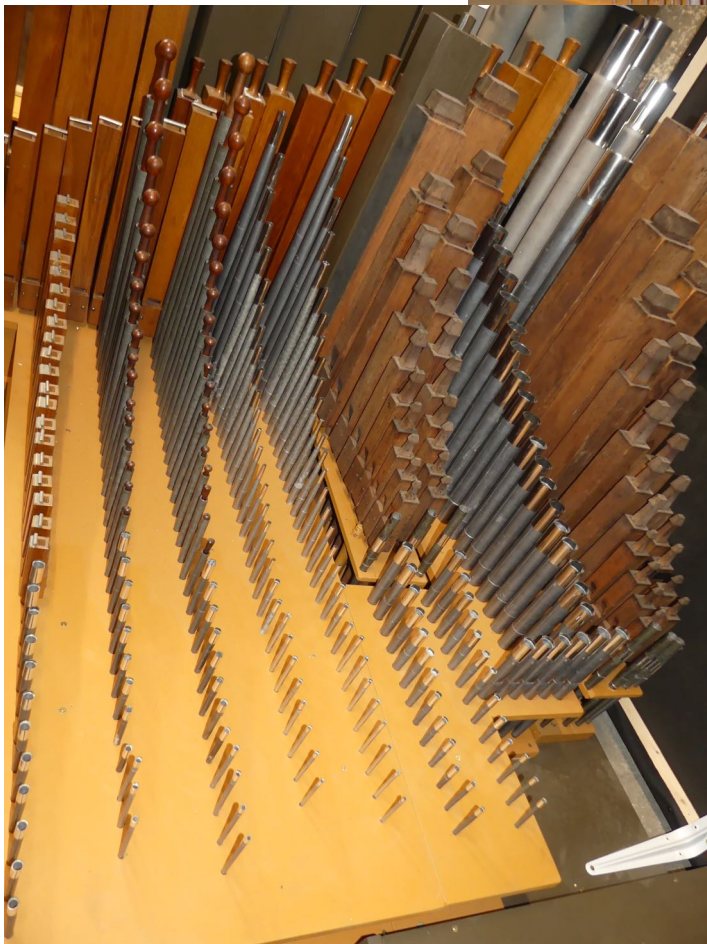
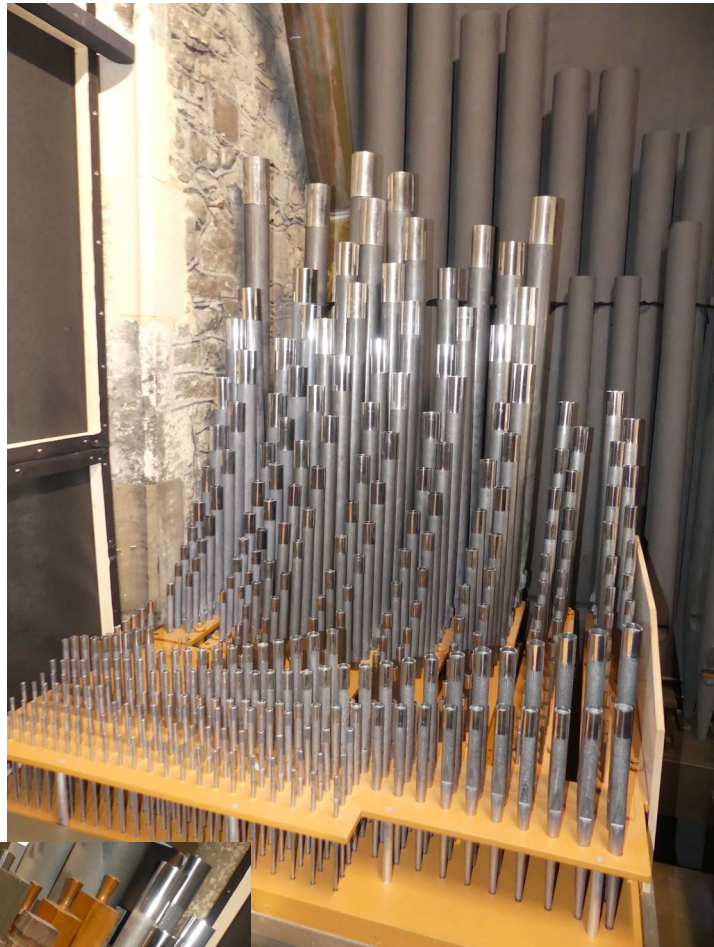
6 thumb pistons to Great
6 thumb pistons to Swell
6 general thumb pistons
reversible thumb pistons for Swell to Great, Great to Pedal, Swell to Pedal
stepper advance and retard thumb pistons
6 toe pistons to Pedal
6 toe pistons to Swell (switchable to Generals)
reversible toe pistons for Swell to Great, Great to Pedal
stepper advance and retard toe pistons
setter piston & general cancel
console light and blower switch
touch-screen tablet for additional functions include a Record and Store ability
Note / stop switching and combination piston systems by Renatus Ltd (Bideford)

Photographs taken after the rebuild

The two soundboards for the Great Organ, placed behind the arch into the Nave.

*Great Diapason chorus:
stops 1,2,4,7,10.*

*Diapason and Geigen
8ft octaves behind.*



*Great Flute chorus:
stops 3,5,6,8,9, to which the
Great Tremulant operates.*



Swell Organ – two soundboards, plus bass chests. The Swell speaks across the Great.

Chests above: Hautboy & Vox Humana with 16ft & 8ft foundations plus Tremulant.

Chests below: Diapason chorus and Cornopean.



*Subbass, Trombone
and Trumpet pipes,
Chancel arch to the right.*



*16ft Geigen Diapason basses,
the original mitres restored
and strengthened.*

*Chancel arch in the background,
Nave arch to the right
foreground.*

Great Stopped Diapason basses.



