

ST ETHELDREDA'S CHURCH

ELY PLACE

LONDON

REPORT ON THE ORGAN

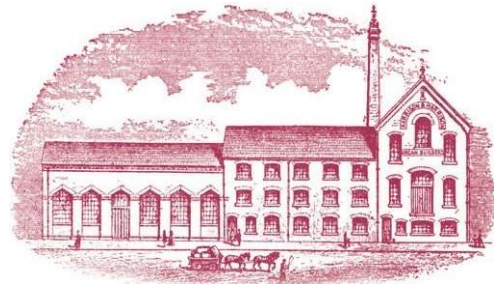
MARCH 2022

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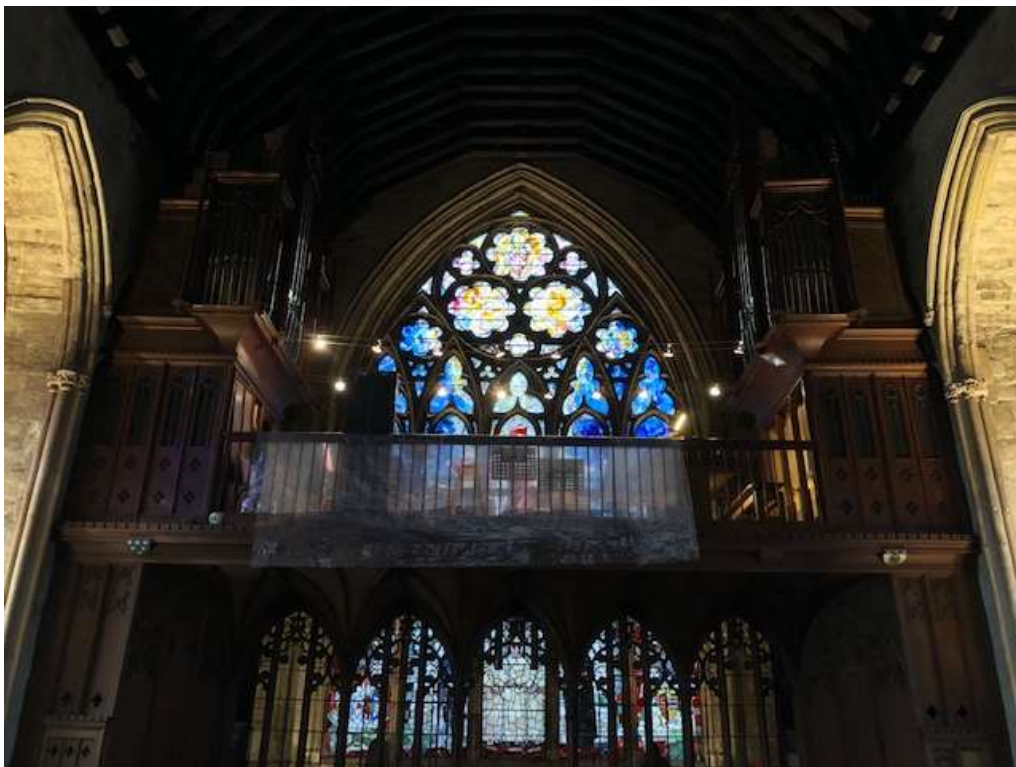
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St Etheldreda's Church, Ely Place, London

Report on the Organ



Introduction

Andrew Scott, our Head Voicer, and I made a brief visit to St Etheldreda's Church on Thursday 6 January 2022. I returned with Laura Johnson, our London area Tuner, on Tuesday 8 February to investigate particular issues further. We are grateful to Adolfo Crawford-Garcia for facilitating our visits.

The organ was built in 2009 by the Swiss firm Späth, and comprises two manuals and 24 stops, with mechanical key action. It replaced an earlier instrument of Lewis/Willis heritage which at 14 stops was considerably smaller and more limited. Such significant aggrandisement of the scheme, while doubtless providing useful additional tonal resources, has meant the construction of an organ which pushes at the limits of what is feasible within the existing casework.

This is in many ways a fine organ of its type, though compromised by its layout and access.

We understand that the organ is now out of guarantee.

Layout

The Swell stands on the liturgical north side of the gallery immediately behind the console, with the Great above. The Pedal is placed opposite, on the south side of the church, in a matching case, over the stairs. The bottom eight pipes of the 16ft Subbass and the electrical system are accommodated to the side of the staircase.

Access to the Swell box and pipework, console, part of the Pedal wind system and tracker runs and the electrical system is straightforward from gallery level. Parts of the wind system and the Swell stop action are buried under the Swell soundboard. As far as we can ascertain, none of the upper level of the organ can presently be safely accessed.

Short gallery wings to the west side of each case are intended to enable the placing of ladders up to the Great and Pedal soundboards at the upper level of the two cases. The case on the north side obstructs safe access to the gallery extension. There is a drop to the floor of around three metres from gallery level. The angle of ladders so placed appears steeper than a recommended maximum of 75 degrees, and climbing onto the ladder would leave inadequate protection from falling to the ground over the edge of the gallery. On the south side, a similar situation pertains, though placing the ladder over the stairs creates additional risks.



The west access to the south side of the organ. The gallery extension, height of the gallery from the floor, and the angle and method of placing a ladder over the staircase can all be seen. Ascending this ladder would effectively place the tuner over the drop to the floor

While these presumed access routes would violate Health & Safety procedures today, the same must also have been true in 2009 when the organ was designed and built.

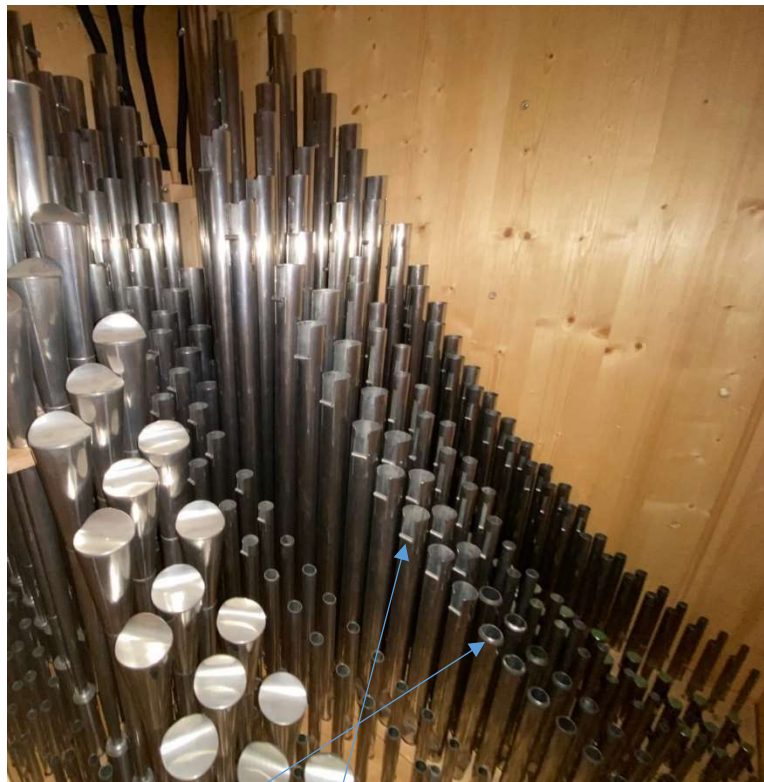
We would not be able to ask our tuners to access the upper level of the organ due to the risks, and would imagine that the same applies to the present tuners. Without access to the upper level, however, the Great and Pedal Organs cannot be tuned and maintained.

For tuning and maintenance access to be possible on a regular basis, a safe method of access must be devised. This is complicated by the listed status of the building, and by the relatively small area west of the gallery, which is heavily used for access to the church on the south side, and the BVM shrine on the north.

We discuss these matters further towards the end of the report. The work recommended in the report, however, assumes the provision of scaffolding to both cases.

Pipework

Without access to the Great and Pedal pipework during our visit, we have assumed the open metal pipes throughout the organ to be cone and scroll tuned in line with the pipework of the Swell. This method of construction should obviate the need for frequent tuning of these ranks, while care should always be taken to avoid damage to the pipe mouths from overzealous coning of the treble pipes. The canistered ranks may require more frequent attention, but, since they are new, so long as the canisters are well fitted their tuning variation in relation to the open pipes should remain relatively tolerable, especially if a fairly stable temperature is maintained in the church.



Swell pipework. Note the cone and scroll tuning and therefore the absence of tuning slides

The reed ranks (the Oboe, Trompete and Posaune) require more frequent tuning relative to the flue pipes discussed in the preceding paragraph. Of these, only the Oboe is presently safe to access. The tuning of the reeds is strongly affected by temperature changes in the building: at our January visit they were extremely out of tune, though at our pre-Mass visit in February when there may have been more heating on they were closer to being in tune.

The sound of the organ is characterful, and in many ways sweet. The flutes contribute solidity to the ensemble, and several flue ranks are strongly ascendant in the treble. At the console the Swell Organ (manual II) sounds louder than the Great (manual I) and Pedal Organs, but the balance is appropriate on the floor of the church.

The voicing of the string ranks is a little unsettled, especially the tenor and bass octaves of the Great 8ft Viola da Gamba, and parts of the Swell 8ft Salicional. One pipe interferes with the speech of its neighbour. Some Flute pipes and a few Principal pipes require regulation.

At our visits, the reeds required considerable attention. We found the tone of the half-length bass octaves to the Trompete and Posaune to be notably different from the tenor octaves, while rasping sounds (the pipe catching the lower octave to its speaking pitch), slipped tongues and poor regulation between adjacent notes were also evident. The Pedal reed is dominant, making it a less flexible stop than it might otherwise be.

Soundboards

Robert Patterson had reported issues with sticking sliders, noting in particular that the Pedal 16ft Subbass (the only Pedal 16ft flue rank) has not been operational for a couple of years. The motor could be heard trying to move the slider, but to no avail.

We were able to free the Subbass slider on 8th February, but would expect the problem to recur, possibly even by the time the organ was next used. We suspect this operation broke through some stickiness, and we wonder whether a substance has been used on the slider at some point which has caused it to bind. The only way to diagnose this would be to remove the pipework and any conveyances and lift the upperboard, following which remedial action could be taken. While it is possible that the slide seals have become damaged, fouling the movement of the slider, or that the slider is catching on a warped upperboard, our diagnosis takes into account the feel of the slide as it was freed from below.

It appears from the tuning book that the Swell Mixtur slider has to be freed every time the tuner visits, and that the Oboe slider is not wholly reliable. In the case of these sliders, any of the above issues may be the cause of the problem. The tuning book suggests that graphite has been used, though this seems unlikely to be required given the use of slide seals. However, having investigated under the Swell we note that the motor operating the Mixture slider appears not to be in good alignment with the slider. As far as we can see, the presence of a wooden joist where the motor would ideally have been located has caused it to be set up at a slight angle. When a motor and slider are not set straight, additional friction is introduced, and it may be that this requires more power to pull the slider than the motor is able to provide.

We detected some soundboard runnings when groups of notes in the treble register were held with no stops drawn. This is a little surprising on such a recent instrument, and we wonder whether, instead of it having been caused by significant variations in heating and consequent sharp changes in humidity in what is a relatively small building, it may be related to the dimensions and assembly of the bearers, slide seals and upperboards. Further investigation would require the removal of pipework and examination of the upperboards. The runnings were not present while the instrument was silent with stops drawn, and were not appreciable during playing, suggesting that in spite of their presence they are not presenting a major problem at present.

Wind noise is apparent in the bottom octave and at tenor A of the Swell.

Action and electrical

The mechanical key action of the instrument is simple and works well, though the tracker runs to the Pedal organ are longer than ideal due to the logistics of the space, with the two cases being necessarily placed against opposite walls of the church. While a few of the ribbon trackers which run under the choir loft floor have bent out of shape, this does not prevent them working.



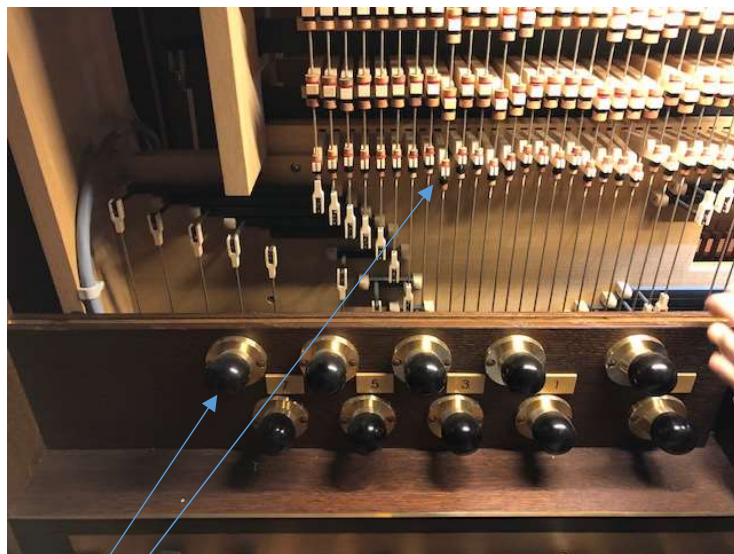
Pedal trackers and electrical fittings under the gallery floor

A few Pedal rollerboard actions have been fitted with double buttons, presumably to address particular problems, but we did not see the buttons stripping on the wires or the action becoming vulnerable. Overall, the action is responsive and well designed.



Pedal rollerboard with double bottom buttons

Mechanical actions of this sort should typically be adjusted every 5-10 years. Those to the manuals in particular are not in bad shape (we wonder if they may possibly have been adjusted in 2019 during the Späth visit). However, the coupler actions would benefit from regulation now that the organ has settled down in the conditions of the church. In particular, the Swell couplers through to the Great at different points in the descent of the key from note to note, and certain pedal notes on both couplers are set quite high on the action.



Pedal coupler actions showing a need for regulation. Note also the steep placement of the foot pistons, which are hidden to the player by the beam under the lower manual

The drawstop action is electric from console to slider. At our visit we saw no evidence of problems with the electric motors which drive the stop action, and suspect this the problems are in fact as discussed above under **Soundboards** above: it should be straightforward, however, to replace any poorly performing motors if required. We note that the voltage has been increased to the Sub Bass, and possibly in other places, resulting in a noisy stop action; if the sticking stop actions were freed, it might be possible to reduce this.

The piston system appeared to work well, and we did not experience any other faults in the electrical system, with the possible exception of the operation of the Swell Tremulant (see below under **Wind System**).

Wind system

The organ is supported by a wind system based on Schwimmer regulators, which is common in instruments of this type and period. They are more space efficient (a particular issue with this organ due to a significant expansion in size compared to its predecessor) and less costly to build and maintain than traditional reservoir-based systems, though they can also hold less pipe wind under pressure against the player's demands. As with many Schwimmer systems, high notes 'bounced' to some extent when chords were depressed beneath them during tests.

There is no space in the current configuration of the organ for a traditional reservoir-based wind system. The present system is functional for most uses, and should be retained, but its limitations must also be accepted. Some would indeed argue that this type of organ is not designed to be played in such a way as to run the instrument out of wind!

There are two blowers, one for each side of the instrument. Wind from each blower is regulated into the instrument by a roller blind, following which trunking leads to the Schwimmer and soundboard. On the Pedal side, the roller blind has failed and as a fix is currently held permanently open by a thin wire. This is not a viable permanent solution, and it does not allow air intake to respond to pipe air demand.



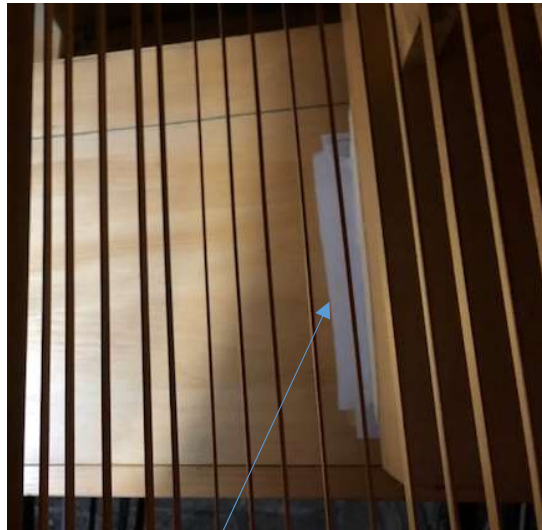
Pedal wind system. The roller blind is held open by the thin wire that can be seen in the middle of the photograph. The Schwimmer reservoir naturally inflates to the maximum with the rollerblind held open, so that the top part of the Schwimmer is hard against the top of the roller valve mechanism

There is a need to reinstate a permanent solution, so that the wind into the instrument can be properly adjusted and regulated according to demand, and so that the Pedal Organ

does not cease to operate when the wire eventually breaks. On test, the temporary system did not support high demand, as the Schwimmer top fell and bottomed out after only a few seconds. This may manifest as a tuning issue when the pipes are starved of wind.

The blower on the console side sits in the space and around the masonry between the top of the Confessional and the underside of the Swell soundboard. We believe it is reached via a trap door in the floor of the small gallery extension north-west of the console, which we were unable safely to reach. We are therefore unsure how easy access is from this point to the blower, roller blind, trunking, Swell Schwimmer and tremulant, or to the Swell stop action, for maintenance. With scaffolding we could further investigate this area of the instrument.

There is a mixture of wooden and copex trunking throughout the organ, typical of the style and period of its construction. This appears generally to be in good condition, though a small amount of patching has been undertaken on the Pedal side, presumably to address wind leakage.



Leather patching in the Pedal trunking

Copex is also deployed as conveyance from the soundboards to off-note pipes immediately behind the main case fronts at upper level on both sides. In several places this has been squashed, seemingly as an easy way to constrict wind intake to certain bass pipes, in place of appropriate winding or voicing regulation. This situation requires further investigation, replacement of the copex, and addressing the root problem.

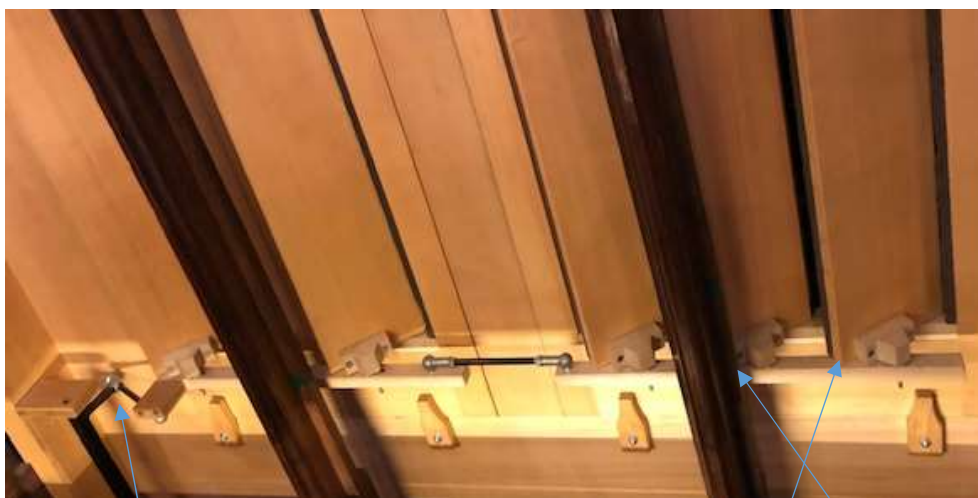


Example of constricted copex conveyance reducing wind supply to a pipe

The tremulant is not operational at present, and given limitations of access we were not able to diagnose the cause. That it is not making any noise may be because of an electrical fault. It is likely to be possible to fix it easily so long as access can be gained.

Swell box

There are two shutter fronts to the east and south sides of the swell box. The swell box mechanism is poorly regulated and opening the box is not a smooth experience for the player. Various noises are associated with its opening and closing, including some at the swell pedal (see below under **Console**). The mechanism to the south-facing shutter front has little space in which to operate the shutters, the arm being set at an awkward angle to avoid conflict between the shutters and pre-existing case members, likely a casualty of the size of the instrument. This limits these shutters to 45-degree opening.



South Swell shutter front. Note the limited (45 degree) opening of the shutters and the angle of the metal mechanism operating them, as well as their proximity to the casework columns in front.

At the swell box end, part of the metal mechanism makes contact with a wooden block with a thin layer of felt as the shutters open to their maximum. Cutting the block back and applying a thicker layer of felt would reduce noise from the contact. The right-hand shutter should also be adjusted to enable it to close fully as far as possible, like its neighbours.



Wooden block with minimal felt causing banging in the Swell south shutter front mechanism. This would be shaved and a thicker felt installed to limit noise

Casework

The main casework on each side looks well, with bright tin façade pipes, and the woodwork is generally in good condition. No work is required in this area.



South side case façade with new tin pipes

Much of the casework looks to have been retained from the previous instrument, though it has been cut away in places to enable the installation of the new organ. In particular, the wooden columns in front of the swell box have been cut at a diagonal to enable the installation of the Swell soundboard and box. They are not now easily held in position, and some form of pinning might be investigated which can stabilise them.

Console



The console. The rail below the Great manual is hidden in shadow



Behind the console. The manual and Pedal key and coupler actions, drawstop solenoids, wiring and robust coupler mechanisms and motors are all visible

At our visits the console was working well, and no particular mechanical problems had been reported. It has been well cared for, and the playing area is in good order.

Several features of the console unsurprisingly reflect continental European style and use. The pistons are small and placed well back from the edge of the keys, suiting a style of playing with relatively infrequent changes of divisional registration. Any alterations would mean dismantling, design work and major changes to the console, and we do not recommend these, though we note they have occasionally been undertaken elsewhere.

The dimensions of the console are also not to UK standards, and the beam under the Great manual sits especially close to the player's knees and intrudes on the playing experience. This is particularly true for an organist with longer legs, and while the adjustable bench can be wound down, as it was at the time of our visit, this is not ideal for technique or posture. Care should also be taken to avoid keeping the bench permanently at its absolute lowest level (it should be wound back a small amount from this), as should there be low humidity for a sustained period the wood could split.

Some minor improvement could be made in relation to the console beam, but there is a limit to how far such alterations could go without compromising the structure of the console. Any work undertaken would also disrupt the decorated edge of the woodwork under the lower manual. There is a trade-off to be considered, therefore, between the advantages of gaining several welcome millimetres of extra playing space, and the appearance of the console.

This particular issue applies not so much to the experience of playing the pedals, but when operating the swell pedal and particularly the upper level of foot pistons to its side: the generous provision of divisional pistons compounds the problem. While the kneeboard and steep foot piston layout could be redesigned, this would be a major intervention, and the benefits would have to be considered against the cost of work and alterations to the integrity of the instrument.

If required, the woodwork under the console could be chamfered out to a limited extent, leaving the area neat but lacking the detail of the current finish. To do this would require dismantling the console. While the area could be made good, the current finish could not easily be replicated.

Unusually, the upper layer of stops controls the lower keyboard, and vice versa. This has been necessitated by the large number of stops on the Great Organ, though it may be slightly confusing to players.

The swell pedal squeaks as it is moved and should be lubricated, and there is some overtravel on the mechanism.

The lower edge of the rubber covering of the swell pedal is starting to become worn, but remains in acceptable condition.

The console keys are presently covered with two dusters rather than a key cover.

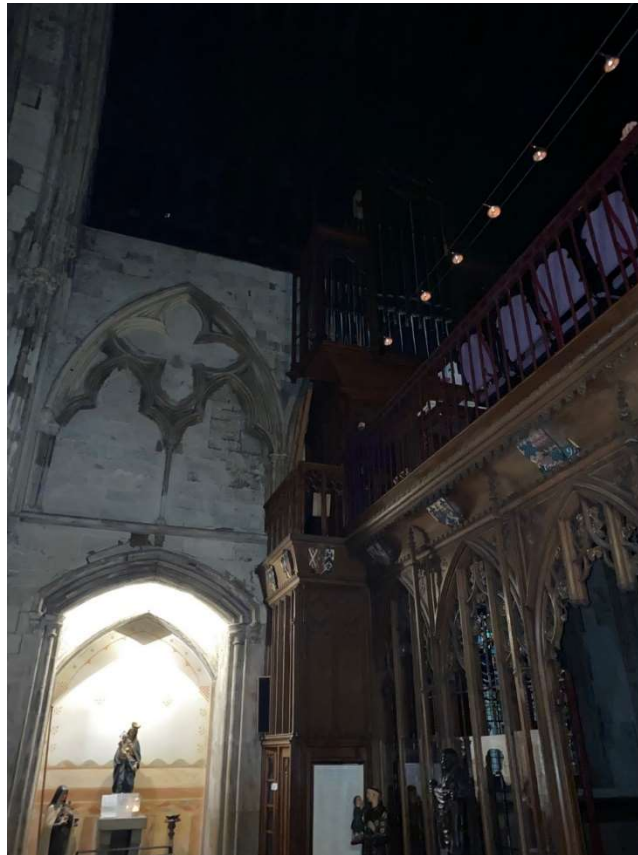
Access

Access is undoubtedly the elephant in the room in relation to this organ. Any suitable alteration will require significant and costly work. Some ideas were discussed with Robert Patterson, and these are included in the lists below.

We believe that the following solutions are unlikely to be viable:

- The present ladder-based system from the west gallery extensions, unless we have misunderstood it.
- Construction of a temporary tower scaffold. While operations can be undertaken from them, tower scaffolds are not designed for access. Access would also require the retention or bringing to site of sizable equipment for every tuning visit.
- A cherry picker or similar electrically operated platform. Even if it were possible to get such equipment into the church, again it is designed as an operating platform, not to enable high level access out of the cab.
- Access from within the cases. This would require extensive redesign and major alteration to the organ. Compounded by a severe lack of space, it would reduce the size of the instrument significantly. While redesign might be possible to the south case, it would reduce the resources and balance of the Pedal Organ. On the north side, the size of the lower-level Swell would be vastly reduced if access up to the Great Organ were to be achieved. A more satisfactory plan would see the Great and Swell Organs placed in opposite cases with a limited Pedal Organ behind and beneath, but this would essentially revert to the layout and size of the previous organ, and constitute to all intents and purposes a new organ, albeit with retained pipework.
- A ladder from the floor. Even if well fixed, the height is too great for unprotected ladder access.
- Provision of enclosed ladder access from the gallery level to the west side of the instrument. On the north side, this would not be viable with the current access from the console to the west side of the gallery, and it would interfere with staircase access on the south side. The look of such a ladder left permanently in place is also unlikely to be acceptable.

- Provision of enclosed ladder access from the floor to the north case at Great soundboard level. This would encroach on the BVM shrine and confessional access.



The BVM shrine, confessional door, west gallery extension and upper level of the organ to which access is required, on the north side

The following solutions deserve further consideration:

- Use of a harness when using a ladder in the present position. However, a means of escape within a short period is required for this to be viable, owing to the injuries that can otherwise be caused. The ladder would have to have a means of safe fixing, and the tuner would have to attend harness training regularly, adding to the cost of tuning.
- Build out the balcony at gallery level over the door and the BVM shrine. This would impact on the architecture of the shallow door and shrine arches, and the blind arcading above.
- Erection of scaffolding when upper level access is required. This would be expensive, particularly as a means of reaching a fault or regular tuning.
- Limit access to the upper level to once every few years, and accept the lack of regular tuning to the Great and Pedal reeds in particular. This would still require funds for scaffolding on a regular but infrequent basis and would limit the use of certain parts of the organ if faults developed, reed tongues slipped or tuning became unusable. To counter the latter two points somewhat, a certain amount of voicing work could be done to help stabilise the reeds. If maintenance faults

were to develop, however, it could put whole sections of the organ out of use for an extended period, with implications both for regular Liturgies and for Wedding and Funeral repertoire.

We believe that the best way forward would be to arrange a meeting between an organ builder (including a designer), architect and the church to explore the options in greater detail, and to enable the costing of viable possibilities.

Recommendations for work

We recommend that the following work be undertaken, which is provided for in our main estimate below:

- The Trompete and Posaune would be removed, their tongues re-set, work undertaken to improve their stability as far as the pipes and style of the organ will allow, and the pipes would be regulated. The power of the Posaune would be attenuated to draw it more satisfactorily into the ensemble, and the join between the bass and tenor octaves of the Trompete and Posaune would be improved.
- The speech of the Great 8ft Viola da Gamba and Swell 8ft Salicional would be improved where unsatisfactory, and the ranks would be regulated.
- Limited regulation in a few places would be undertaken to the Flute and Principal ranks, as necessary.
- The Pedal Subbass pipes and conveyances on the soundboard would be removed, the upperboard lifted, and the problem with the stop action diagnosed and remedied.
- The voltage of the drawstop actions at the sliders would be reviewed and lowered if appropriate.
- The Swell Mixtur and Oboe pipework would be removed and the upperboards lifted. Checks would be made to the stop action and condition of the slide seals and sliders, as well as the clearance of sliders in relation to the bearers, and any remedial work necessary would be undertaken. The angle of the installation of the motor controlling the Mixtur slider movement would be checked and, if necessary and possible without structural interference, improved.
- Wind noise in the bottom octave and at tenor A of the Swell soundboard would be investigated and corrected as far as possible.
- The broken roller valve to the Pedal Organ would be replaced and the rest of the mechanism reinstated and made good.
- The copex conveyances to pipework in both cases would be replaced where crushed, and the pipework or winding to the pipes properly regulated.
- The Swell Tremulant would be repaired provided that adequate access is available.
- The key actions would be checked over and the coupler actions regulated throughout the organ. This is a significant and time-consuming component of the recommended work.
- A mechanism for pinning into place the columns in front of the swell box would be investigated and created if space allows.

- The swell box mechanism would be improved and the associated noise significantly reduced. The easternmost shutter of the south-facing shutter front would be adjusted.
- At the console the swell pedal mechanism would be oiled and the overtravel in the mechanism adjusted as far as is possible without major dismantling.
- A suitable key cover would be provided.
- The organ would be put into a good state of tuning.

Alongside this main work we could undertake work to make limited alterations to the beam under the Great manual. We have costed separately for this work, which would involve dismantling part of the console.

The cost of bringing a designer to site for discussions concerning regular access, and the cost of drawing work in relation to this, would be charged at £45 per hour including travel time.

The cost of the provision of scaffolding is not included in our estimate below. This would need to be sourced by the church. We would provide a sketch of the scaffolding requirements and would liaise with the scaffold designer in refining the design. We would sign off the scaffolding in terms of our requirements, but are not qualified to sign it off in terms of its structural stability. We would require appropriate Scafftag and documentation of its safety prior to work commencing.

Conclusion

While this is a recent, and in many ways well-built instrument, several targeted interventions would leave it in a better operational and musical state.

For regular tuning and maintenance to the Great and Pedal Organs, a safe means of access will need to be found. We have given our initial observations, and would be happy to be involved in devising a suitable plan if required. The alternative is to leave these areas devoid of access at normal times, while making financial provision for their maintenance every few years. This would be cheaper in the short term than any improvement to regular access, but would run the risk of parts of the organ becoming unplayable at times, and would cost more over time. Initially, the associated risks should be lower, but inevitably over time they would increase as the organ became older and more susceptible to faults.

Estimate

To undertake the work listed in our main bulleted recommendations above would cost £22,770.

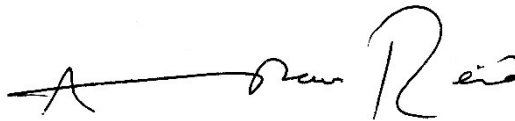
Work to chamfer the beam under the Great manual would cost £4,354 if undertaken in tandem with the main work.

These estimates are offered within the terms of the standard Institute of British Organ Building (IBO) contract.

The price excludes the following:

- VAT. This may be reclaimable under the Listed Places of Worship Scheme;
- Provision of scaffolding and lifting gear. Access scaffolding to both sides of the organ would be required, together with an area for pipe storage. It may make sense to link up to scaffolding between the sides to achieve this. We recognise that public access to the church and under the screen would be required to be maintained;
- Any work on the blower, mains electrical work, work on the fabric of the church, transport of parts between the church and our workshop by a haulier, or work relating to the disposal of dangerous materials including but not limited to asbestos. We do not anticipate a requirement for any such work from what we have learnt at survey;
- Provision of working facilities in or adjacent to the church;
- Any increase in costs after 31 December 2022.

We would require access between Monday and Friday for long days of work in the church, typically up to 12 ½ hours, with periodic short breaks. We would anticipate the work taking three weeks but running into a fourth week if the extra console work were included. We could arrange our work/breaks around a daily Mass.



Andrew Reid
Managing Director
Harrison & Harrison
11 March 2022

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St Etheldreda's Church, Ely Place, London

Specification of the Organ

PEDAL

1.	Subbass	16
2.	Octavbass	8
3.	Bourdonbass	8
4.	Choralbass	4
5.	Posaune	16

Coupler I - P

Coupler II - P

GREAT

6.	Bourdon	16
7.	Principal	8
8.	Rohrflöte	8
9.	Viola da Gamba	8
10.	Octave	4
11.	Holzflöte	4
12.	Quinte	2 ² / ₃
13.	Superoctave	2
14.	Tierce	1 ³ / ₅
15.	Mixtur	19.22.26 III
16.	Trompete	8

Coupler II - I

SWELL

17.	Bourdon	8
18.	Salicional	8
19.	Unda maris	8
20.	Fugara	4
21.	Traversflöte	4
22.	Flageolet	2
23.	Mixtur	22.26.29 III
24.	Oboe	8

Tremulant

Accessories

Great & Pedal Combinations Coupled

Generals to Swell Toe Pistons

8 pistons to the Great Organ

8 pistons to the Swell Organ, duplicated by foot pistons

8 foot pistons to the Pedal Organ

Stepper

256 memory levels for the general pistons and 8 for the divisional pistons

The manual compass is 58 notes, the pedal 30 notes.

Harrison & Harrison
11 March 2022