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GRAND ORGUE
CATHÉDRALE
DE BORDEAUX

Birth of a Great Organ

The Newsletter of the Great Organ of Bordeaux Cathedral

Editorial

Last spring marked a turning point in the history of the cathedral. The organ was dismantled and, for two months, visitors were able to see the gallery standing empty at the west end of the nave. A rare sight indeed: nothing like it had occurred since an organ was first installed on the present gallery! The historic organ case and the components that are being retained, or may be reused in the new instrument, were transported to Austria. In May, we visited the Rieger workshop, in particular to inspect the conditions in which the organ case is being stored. We return to this visit in the first article of this newsletter.

At the end of May, work in the nave began with the installation of the site facilities, which was still under way as this newsletter went to press. This phase requires close coordination between the various project teams, particularly to agree on the route of the technical ducts beneath the floor. These will allow the mobile console to be connected at various points throughout the building.

As regards funding, approximately €2.4 million has now been secured. Just over €3 million is required before the second phase of the project can begin, which means that around €600,000 still needs to be raised by summer 2027. The relevant works orders must be issued by the end of 2027 at the latest. Keeping to this timetable is important in order to limit increases in the overall cost of the project, as prices are revised annually.

The pipe sponsorship scheme is one of the key ways of reaching this target. The involvement of the Fondation du patrimoine is another important development in this respect.

We are also preparing a new exhibition in the cathedral to explain the project more clearly and introduce it to visitors.

We conclude this newsletter by thanking you for your continued support. Please do keep spreading the word about this wonderful project!



The scaffolding for the first phase of the nave restoration is currently being erected.

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CATHEDRA

News: a visit to the Rieger workshop in Austria



Main entrance to the Rieger workshop.

As part of the first phase of the works contract, the project team travelled to the Rieger workshop in Schwarzach, Austria. The purpose of the visit was first to ensure that the historic organ case was being stored under suitable conservation conditions during the two years preceding its actual restoration, and secondly to review the project as a whole, both the restoration of the case and the construction of the



The components of the historic organ case are stored in a temperature-controlled building pending restoration.

new instrument. Several aspects of the case restoration were discussed: the delicate question of cleaning, which must remove the wax applied in the 1970s while preserving surviving traces of earlier decorative layers (colours and gilding); its future colour scheme, for which new proposals were presented; the supporting structure, in the light of observations made after dismantling; and the appearance of the future façade pipework (shape and lines of the mouths, number and diameter of the pipes, etc.). Regarding the instrument itself, a number of points were examined:

Part of the timber stock.



possible directions for finalising the external design of the mobile console, various aspects of both consoles, the overall stoplist, the detailed composition of the mixtures, the position of the en chamade reeds, the electrical installations, and other technical matters. The aim was to determine what needed to be definitively settled at this stage and what could



Woodworking shop.



Above and below: further views of the woodworking shop.



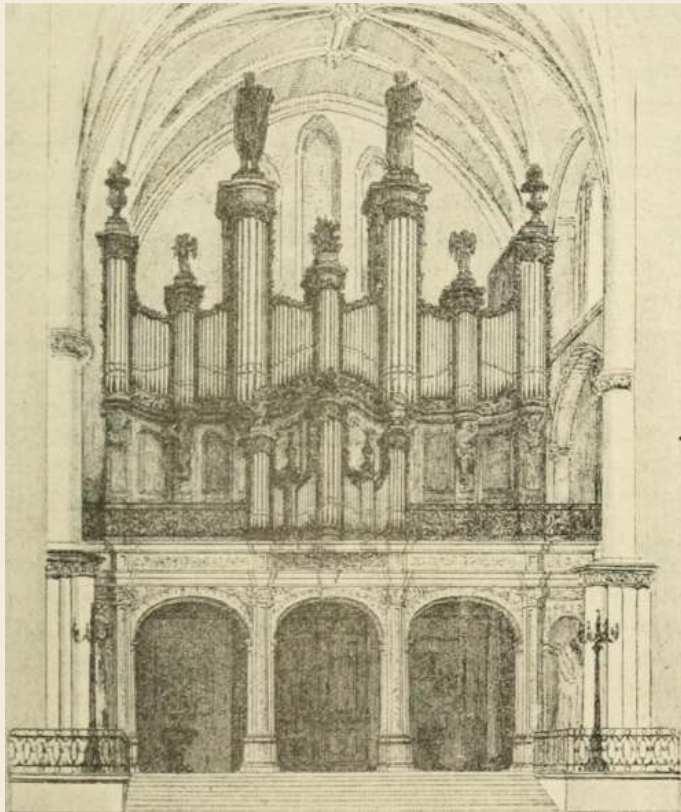
Pipe workshop.



remain open. The tonal aspects, for example, can now be fixed (drawing on our knowledge of the cathedral's acoustics and the tests already carried out), while certain technological features that may continue to evolve, particularly digital assistance systems, will remain open until they are implemented in 2028–2029. The main principles required to finalise the project were therefore discussed, leaving the organ builders to complete the final general drawings by the end of this first phase, next September. Some of these elements will be unveiled in the next newsletter.

The organs of the Cathedral: seven centuries of history – Part Four.

From 1837 to 1841, the organ builder Henry undertook a further restoration. He replaced the two convex side wings of the main organ case with the present concave ones, gaining additional depth to accommodate a Contra Bombarde. He also enlarged the Récit and expanded the organ to 49 stops.



Engraving showing the organ case between 1841 and 1875.

Shortly after building the new choir organ in 1872–1873, Georges Wenner was commissioned to work on the Great Organ. During the work carried out between 1875 and 1877, he enlarged and completed the instrument, installed a large 14-stop expressive Récit, and rebuilt the action and wind system. To conceal the imposing swell box of the Récit, the organ case was altered once again, this time in its central section, with the addition of an extra tier. The organ then comprised 56 stops over three manuals and pedal. Puget installed an electric blower in 1919. The same builder

carried out further work in 1921: he reinforced the Montre pipes, made several changes to the stoplist and undertook a general tuning. In 1933, the Nantes firm Debierre worked on the organ in turn. In 1946–1947, organ builder Robert Boisseau replaced the direct mechanical pedal action with a tubular-pneumatic system. In 1954, the note action was electrified by Beuchet-Debierre, who fitted the manual divisions with new electro-pneumatic actions. In 1962, several pipes from the two central flats added by Wenner fell into the nave. As the neighbouring pipes were also beginning to collapse and presented a danger, the whole group was temporarily replaced with electrolytic-zinc pipes.

Of the organ's 56 stops, 26 were by Dom Bedos de Celles, 10 were other historic stops, including several reused ranks installed during the 19th century, and 20 were Romantic and/or modern stops.

To be continued...

The organ in the 1940s.



Conceiving the organ of Bordeaux Cathedral

Rebuilding a great cathedral organ is a major long-term challenge. Jean-Baptiste Dupont, Titular Organist, shares the reflections that, over the years, have shaped the main principles of the project.

First stage: assessing the situation

My first encounter with the organ of Bordeaux Cathedral was in 2005, when I came to give a summer recital. Its reputation preceded it: "ugly" and far too discreet for the cathedral. Nevertheless, I had appreciated this neo-classical instrument, particularly some of its qualities in individual stops, although I had also noticed a lack of power in relation to the size of the building and, above all, serious drops in wind pressure and problems with tuning.

I continued to play the organ occasionally and, in 2012, a competition was held to appoint a new organist. Once appointed, I was able to look behind the scenes and see that

the instrument required considerable work.

Should it be rebuilt or restored? The detailed survey commissioned by the DRAC from Thierry Semenoux in 2013–2014 helped to clarify the situation. The findings were not encouraging: obsolete transmission systems, subsidence of the organ case and windchests, defective wind distribution, materials of sometimes questionable quality, design flaws, inappropriate scaling progressions and voicing poorly suited to the cathedral.

There was also an acoustic problem. The organ, already relatively lacking in power in the first third of the nave, seemed to disappear altogether around the crossing, to the point where one could whisper there without being disturbed by the full organ.

Second stage: learning from history

Rebuilding the organ on sound and durable foundations was

essential. But how could we prevent the new instrument from becoming lost in the building in exactly the same way?

Simply making it larger was not enough, because the number of stops is not everything: the Danion organ already had 76 stops and some 6,100 pipes.

Historical research showed us that, for several centuries, the Great Organs had often struggled to fill the cathedral. The disappearance of the stone rood screen probably made matters worse.

The 19th century offers some particularly useful lessons. The requisitioned organs from La Réole and Sainte-Croix succeeded one another without ever fully establishing themselves in the building. The latter proved so inadequate that, around 1850, there were plans to increase its power by doubling the already substantial chorus of reed stops. In 1875, Wenner partly solved the problem by adding a large symphonic Récit division speaking on exceptionally high wind pressures for the period.

Third stage: observation and experimentation

Between 2015 and 2018, a series of experiments was carried out in the organ. Pipes of various types and origins were introduced and sounded alongside the existing pipework at different wind pressures. Other tests involved positioning reflectors to project the sound forwards rather than allowing it to dissipate behind the open organ case.

These experiments showed that stops with flared pipework performed better in the building than pipes simply cut to speaking length, that clean and precise attacks were essential, and that rounder sonorities, such as harmonic flutes, carried particularly well.

The same applied to reed stops: a tone with a stronger fundamental projected more effectively than one dominated by high harmonics. The internal architecture of the instrument, the position of the stops and the role of the organ case therefore emerged as crucial factors in sound projection.

Other observations pointed in the same direction. The Harmonic Flute of the choir organ filled the cathedral remarkably well, while historical accounts consistently praised the effectiveness of Wenner's large symphonic Récit in this acoustic.

The cathedral nave forms an immense, broad volume with large expanses of glazing. An audience absorbs a significant proportion of the sound. High harmonics, although essential to the balance of the instrument, are at a disadvantage. At a distance of around 30 metres from the organ, the sense of presence falls away sharply.

In the Danion organ, this loss was not compensated for: the instrument lacked sufficient fundamental tone, while imprecise attacks sometimes prevented the sound from developing fully from the moment it was produced.

Fourth stage: defining an aesthetic direction

For several centuries, and particularly from the 19th century onwards, successive classical-style organs met with varying

degrees of success in the cathedral. Put simply, our observations showed that this type of organ, rich in harmonics but relatively poor in fundamental tone, was not fully suited to the acoustic. Since the experiments demonstrated how well a symphonic approach worked in the building, this became the starting point.

Building a new organ of this importance is also an opportunity to create an instrument representative of our own time. The aim is therefore to conceive a contemporary Great Organ founded on the French symphonic tradition, while creating an original, coherent and homogeneous synthesis.

My experience of German and Anglo-Saxon Romantic and post-Romantic organs has shown me that, despite their apparent differences, these traditions share certain technical and tonal principles. Between the late 19th century and the first third of the 20th century, these aesthetics occasionally came together with particularly successful results, providing valuable examples of what works, what can be combined and what remains incompatible. In Bordeaux, these traditions will therefore complement the French foundation, while also incorporating certain tonal developments and discoveries of the 20th century.

Once this aesthetic concept had been established, every other aspect of the instrument, particularly the wind system and windchests, had to follow from it with technical and musical coherence.

These proposals, together with other musical and technical ideas, were presented to the organ builders bidding for the contract. It was important to leave them sufficient freedom of interpretation to preserve the individual character of each firm, produce genuinely different proposals and encourage a real dialogue around a collective and innovative project.

The restoration of the choir organ, completed in 2023, served as a laboratory within the constraints of the existing material. Built by Wenner in 1873, the instrument had later been softened by Beuchet-Debierre. Restoring its original tonal characteristics (including flared pipework, higher wind pressures and renewed coherence between wind system, windchests and pipework), together with a number of measures designed to help the instrument "project out of its niche", demonstrated that an organ of only 18 stops could, despite its modest size, fill the cathedral much more effectively.

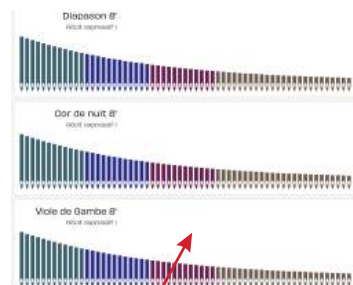
This provided confirmation that the observations made for the Great Organ were sound and that the project was heading in the right direction.

The desire to play the Great Organ and the choir organ simultaneously is therefore far from a mere extravagance. Acoustically, sound travelling from the west gallery inevitably tends to lose presence around the crossing, where the architecture and volume of the cathedral change considerably. Since its restoration, the choir organ speaks effectively in precisely this area. The aesthetic compatibility of the two instruments will therefore make it possible, whenever necessary, to bridge this acoustic gap at the heart of the building. The organist will be able to combine or contrast the two instruments from a single console.



Visit the pipe sponsorship website

orguebordeaux.fr
or scan this QR code



Choose a register and select your pipe!

What is an organ? Part Five.

Stops and pipes.

Having looked at the organ case and then at the different sound divisions, let us now turn to the very substance of the organ's sound: its stops (also known as registers) and pipes. These are what actually produce the sound and give each instrument its colour, character and personality.

A pipe produces a sound when air is blown into it. Unlike an instrument such as a flute or trumpet, however, an organ pipe produces only a single note. To cover the full compass of a keyboard, there must therefore be at least one pipe for every note. A stop is precisely this: a complete series of pipes sharing the same timbre and extending across the compass of a manual or the pedalboard.

Thus, when an organist draws, for example, an 8' Flute stop, an entire family of pipes becomes available, one for each note and all sharing the same tonal colour. If an 8' Trumpet is added, another family of pipes joins the first. Part of the organist's art lies in selecting and combining these stops to create blends of sound suited to the music, the acoustic and the character of the instrument.

Organ pipes may be made of metal or wood. Metal pipes are generally made from alloys of tin and lead, in varying proportions according to the tonal character sought. Copper and zinc are also used more occasionally. Wooden pipes, often employed for certain bass stops or flutes, tend to produce rounder, softer sounds with a stronger fundamental.

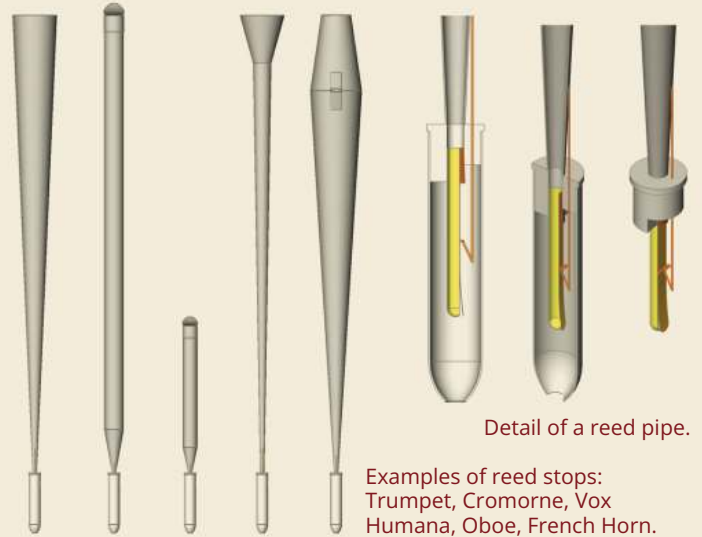


Organ pipes in situ (Rieger organ, 2023, Graz Cathedral, Austria).



Examples of flue-pipe forms: 1 Flute; 2 Principal; 3 Salicional; 4 Viola da Gamba; 5 Spitzflöte; 6 Gemshorn; 7 Bourdon; 8 Chimney Flute; 9 Wooden Flute pipe.

There are two main categories of organ pipe. Flue pipes work on a principle similar to that of a recorder: a sheet of air strikes a sharp edge, setting the column of air inside the pipe into vibration. These form the basis of the foundation stops. In Bordeaux, they will account for 78% of the pipework. Reed



Detail of a reed pipe.

Examples of reed stops: Trumpet, Cromorne, Vox Humana, Oboe, French Horn.

pipes, by contrast, use a metal tongue which vibrates under the pressure of the wind, rather like the reed of a clarinet or oboe. This principle produces highly distinctive, sometimes brilliant colours.

Within these broad families, stops fall into several groups. Among the foundation stops, Principals (known as Montres when displayed in the façade) form the backbone of the organ. Their tone is full, clear, direct and stable. Flutes, which generally have wider-scaled pipes, offer rounder and more supple colours. Strings, with their narrower scales, became particularly important in the Romantic organ and evoke something of the softness and timbre of bowed string instruments. Reeds (Trumpets, Oboes, Bassoons, Clarions, Cromornes, etc.) provide character, brilliance or distinctive solo colours.

Other stops further enrich the palette. Mutation stops sound particular harmonics, reinforcing the colour of a timbre or lending it additional brightness. Mixtures, in which several ranks of high-pitched pipes sound for each note played, add brilliance and clarity.

The figures accompanying the names of stops (8', 16', 4', 2', etc.) indicate their pitch. An 8-foot stop sounds at the same pitch as the corresponding notes on a piano. A 16-foot stop sounds one octave lower, while a 4-foot stop sounds one octave higher.

An organ may therefore contain several thousand pipes. The future Great Organ of Bordeaux will have around 6,800, distributed among numerous stops and sound divisions. Combined or contrasted with one another, they create a vast palette of tonal colours, ranging from an almost imperceptible pianissimo to the overwhelming power of the full organ.

Example of stop knobs as found by the organist at the console (here at Saint-Sernin, Toulouse).



Cathedral brief

In a great cathedral undergoing restoration, one phase of work follows another. The refurbishment of the interior spaces in the towers (storage and working areas), required to ensure the building can function properly during the forthcoming interior works, is now nearing completion.

Meanwhile, with the Great Organ dismantled, the major campaign to restore the cathedral interior is now beginning. The first phase concerns the nave and is due to be completed by the end of 2029. Its three stages will progressively reduce the space available: first the western third of the nave, then the central section, and finally the area adjoining the crossing. Once this work has been completed, the new organ can be installed.

As all these projects interact with one another, they must follow a carefully coordinated schedule. The installation of the organ will, for example, require the interior restoration works to pause for almost a year so that the final tonal adjustments can be carried out under real acoustic conditions. The ambulatory, choir and finally the transepts will then be restored in turn. These final campaigns will bring to an end almost half a century of virtually continuous restoration work, both inside and outside the cathedral.

The musical season continues. Summer is traditionally organ season, with the annual summer festival. In the absence of the Great Organ, the festival continues on the choir organ, with a reduced programme of four recitals and limited audience capacity for practical and acoustic reasons. The scale may be smaller, but the high calibre of the invited artists remains unchanged! The choir organ will also be heard in the Organ Hours, during which programmes built around the major seasons and feasts of the liturgical year will be performed and introduced.

We are experiencing a particularly hot summer this year, and the cathedral remains a place of relative coolness where everyone is welcome, whether to pray, reflect, attend our concerts, appreciate the architecture or join us for a service.

Visitors will also be able to discover our new exhibition about the organ, which we plan to install in time for the first organ recital of the summer.

Set the heart of Bordeaux's
new Great Organ beating:
adopt a pipe!



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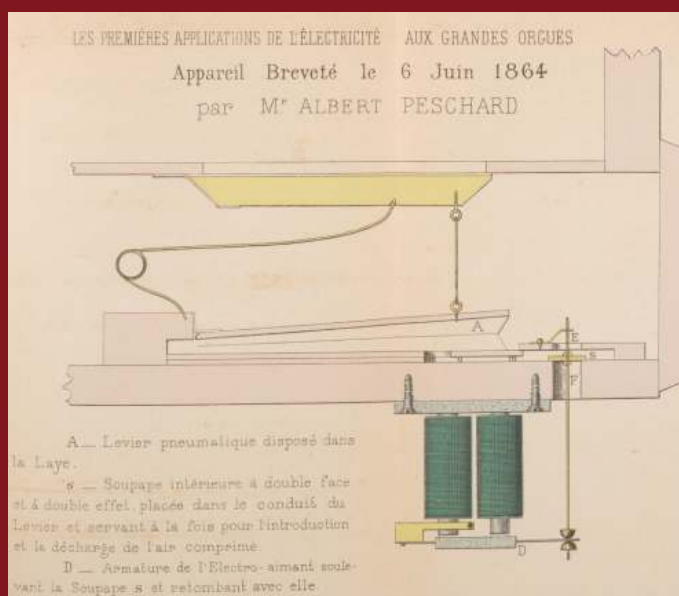
In the next issue...

- Entretien avec Gwennin L'Haridon.
- L'histoire des orgues de la cathédrale - 5^{ème} partie (fin).
- Qu'est-ce qu'un orgue - 6^{ème} partie.
- ... et d'autres actualités, nouvelles et articles ...

Did you know?

Inventions around the organ: electricity.

Electricity was not invented for the organ, but the organ was one of the first musical instruments to use it as a means of control. From the 19th century onwards, organ builders experimented with electric actions linking the keyboards to the pipes. The organ of the collegiate church in Salon-de-Provence, built in 1865 by Barker and Verschneider using Peschard's system, is thus regarded as the first organ equipped with electric action. Pressing a key closes an electrical circuit, an electromagnet operates a valve, and the wind then makes the pipe speak. This innovation paved the way for detached consoles, instruments of very large dimensions, and modern combination systems. The organ thus emerged as a remarkable laboratory for electro-mechanical technology.



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