

PCP Forum 32/2019: A musical PCP Forum

Pio Pellizzari: Editorial. Music, our audio heritage	2
Tim Kammasch: On the paths of Greenwich Park. Musings on architecture and music.....	2
Hans Schüpbach: Music, architecture and water: the making of design icons and city landmarks	3
Edmond Voeffrey: The Valère basilica organ in Sion (VS)	3
Isabel Münzner: Basel historical museum and its musical mission	4
Christoph E. Hänggi: The Museum of Music Automatons Seewen (SO)	4
Séverine Gueissaz: CIMA – international centre of mechanised art	5
Hans Hirsbrunner: History of the chamber organ in Switzerland.....	5
Adrian von Steiger: Preserving period wind instruments.....	6
Ulrike Henningsen, Michael Marek: Early wind instruments and 3 D printing	6
Armin Zemp: Biotech violins	7
Gabriella Hanke Knaus: Mariastein Abbey reorganises its music collection	7
Alexandra Kull: The harp of Ur – a 4 500 year-old sleeping beauty	8
Olivier Melchior: la Cité de la musique – a Parisian paradise for music lovers	8

Pio Pellizzari: Editorial. Music, our audio heritage

Dear reader,

We listen to music every day, sometimes passively, sometimes actively. A few of us might even make our own. Music is present in all cultures and fulfils a wide variety of functions: it accompanies ritual actions, offers a shared cultural experience, provides a source of entertainment or serves merely as ambient noise. Music is also used, and even misused sometimes, in a wide variety of ways, such as to elicit or heighten emotions, to seduce or to make a show of force. A party is not complete without music; a film is not complete without a soundtrack; a shopping experience is not complete without music playing in the background. Music is ubiquitous, omnipresent and instantly available. It comes in myriad forms, types and styles. We are constantly surrounded by it, so much so that we are often unaware of it. Music is also something that we collect, share, gift and, in some cases, even carry around with us. Music connects us to one another, and to our surroundings.

Music is multicultural and has its own understandable and emotional idiom. It transcends regions and cultures, perhaps with one exception: folk and traditional music. Although they tend to reflect the customs and mores of a particular community or ethnic group, the lines between folk and traditional music and other genres are growing increasingly blurred. Centuries ago, composers, musicians and instrument makers travelled across Europe, bringing their works to all parts of the continent. They provided their services to courts and cathedrals or were commissioned to write works at the behest of 'foreign masters'. Music manuscripts and especially printed music allowed works to be shared far beyond their birthplace. With the invention of audio recording and reproduction some 130 years ago, the dissemination of music finally went global. Another art form would emerge to join that of instrument-making: audio engineering.

Despite this precocious globalisation process, music remains a cultural asset that gives meaning, and creates a feeling of belonging and identity. Each generation has its own soundtrack but all derive meaning and a sense of history from it. Music is the audio history of society, reflecting its artistic tastes and fashions, as well as its upheavals, struggles and technological advances.

Yet, music is neither visible nor palpable; it is ephemeral, echoing only in our memories. As such, it corresponds to the UNESCO definition of intangible cultural heritage. To protect our audio heritage, its physical manifestations – manuscripts, printed music, recordings, and smartphone files – must be preserved. This is precisely the mission of the Swiss National Sound Archives (https://www.fonoteca.ch/index_en.htm). It safeguards audio documents, including music and the spoken word, as well as the instruments and equipment used to reproduce them.

The present issue explores the many different facets of audio heritage and the various forms its transmission takes. The focus is mainly on the tangible and visible dimension, such as the art of instrument-making, restoration and preservation, architectural and acoustics research and advances, the representation of music in art, the craftsmanship behind musical automata, and the work of museums to share this valuable heritage with the broader public.

Tim Kammasch: On the paths of Greenwich Park. Musings on architecture and music

What divides them also unites them. Of all art forms, music is the most ephemeral, architecture the most durable. They are the extremes of what Lessing calls “the art of time” and “the art of space”. As such, they influence not only us – the listener and observer – but also one another.

When we approach these art forms from a lay perspective, the effect they have on us is such that we are generally unable to establish an aesthetic distance or mental space in which to critically reflect on them. Whether overly familiar and quick to fade away, music, e.g. in a supermarket, and architecture, in its ubiquity, frame and structure our daily routine, almost imperceptibly. Both speak to our pre-reflexive, affective – or ‘mythical’ – perception. There is an ambivalence to the seductive powers of these art forms. Throughout history, these powers have been used to positive effect, but sometimes also misused for more sinister ends, and were even “[...] the beginning of Terror [...]”.

Yet, does this power that they exert on our senses open up the possibility of correcting the much-criticised desiderata of the Enlightenment and, through the cultivation of these central tenets, strike a balance between reason and emotion? Are there thinking spaces which co-opt our senses, say, through the rhythm of our movements, to such an extent that they become subsumed within us? This is by no means a foregone conclusion; neither is the free coalescence of our sensory perception and abstract ideas beyond the realms of the possible. In this article, the author recalls a conversation he had with a friend on this subject as they enjoyed a stroll round Greenwich Park.

Hans Schüpbach: Music, architecture and water: the making of design icons and city landmarks

Water is everywhere – in mythology and religion, in language and figures of speech, in poetry, painting and, of course, music. One of the most famous pieces of music inspired by this vital element is undoubtedly *The Moldau* by Smetana. Water manifests itself in myriad ways: as a great flood in all its destructive force, as a life-giving elixir, or as a soothing wellspring. Whatever form it takes, water stirs the emotions! Sailing the open seas awakens both a sense of adventure and a yearning for home.

Like water, music has the power to kindle our senses and emotions. Perhaps these shared characteristics go some way to explaining the growing tendency to build auditoria and concert halls close to the water. For years, the *Bregenzfestspiele* have been performed on a giant floating stage, a concept later copied by the *Thunersee* and *Walensee* regions in Switzerland. Once, ancient amphitheatres like Verona and Avenches, and beautiful picture-frame stages like *La Fenice* opera house in Venice, reigned supreme among performance venues; today, some of the most popular concert halls are built by the water’s edge. They include the Sydney Opera House, a UNESCO World Heritage Site since 2007, and newer structures like the *Palau de les Arts Reina Sofia* in Valencia, the *Auditorio de Tenerife*, the *Elbphilharmonie* in Hamburg, the Oslo and Copenhagen Opera Houses, as well as similar structures in Asia and the Gulf region. With the *KKL* in Lucerne and the *Zürcher Kongresshaus und Tonhalle*, Switzerland too is part of this trend.

Construction, financial and scheduling problems notwithstanding, all of these relatively new venues seek from the outset to acquire iconic status and become cultural beacons and city landmarks, whether through their function, design, architecture or the materials used to build them.

Edmond Voeffrey: The Valère basilica organ in Sion (VS)

The Valère Organ is said to be the oldest working organ in the world. Based on the painted decoration on the side of the instrument, experts have dated it to around 1435. Over its lifetime, it has been modified several times, including in the late 17th century.

By the end of the 19th century, the organ stood mute and neglected. Thankfully experts recognised its value and restoration work began in 1954. Even a festival was established in its honour in 1969. It went under further restoration work in 2003, which was carried out by Swiss organ builders Füglistler.

In spring 2019, the organ will be tuned in meantone as part of events celebrating the 50th anniversary of the festival. This temperament was used during the Renaissance and Baroque periods and is better suited for the performance of Early Music. The present article explains what this temperament (a method for tuning fixed-pitch instruments) is and tells the back story of the restoration and conservation of the Valère organ. Festival goers in the future will be able to delight in the organ's mellifluous tones and how it would have probably sounded to audiences when it was made.

Isabel Münzner: Basel historical museum and its musical mission

There are over 3 200 musical instruments in the Basel Historical Museum collection. They range from 15th century altar bells that once rang out in Basel Cathedral to the oldest surviving folded trumpets (1578), and even Mauricio Kagel's 1971 'sucker roll'. Instruments offer us an insight into the different chapters of our musical history, materiality, the craftsmanship of the instrument makers, as well as the tastes and fashions of the day.

Most of these instruments are locked away in a storage facility. Only 650 are on public display in the Museum of Music, which since 2000 has been part of the historic *Lohnhof* complex, not far from the city square *Barfüsserplatz*.

The major dilemma that any music museum faces is that ICOM (International Council of Museums) rules stipulate that their primary mission is to preserve, interpret and study the communicate and study the objects in their safekeeping. As such, this rules out the playing of the instruments in its collections. Although most of the instruments in the Museum of Music collection are too fragile to play, there are a few hardier examples that make regular appearances at the museum's lunchtime concerts and special events. The public will have a further opportunity to hear them being put through their paces at the upcoming *Klangbilder – Basler Musikalien des 16. Jahrhunderts*, which will open on 24 May 2019. The exhibition, jointly organised with the *Schola Cantorum Basiliensis* (FHNW), the Department of Musicology at Basel University and Basel University Library, showcases a collection of sheet music which was printed or used some 500 years ago in the city, and includes Virdung's treatise *Musica getutscht*.

Christoph E. Hänggi: The Museum of Music Automaton Seewen (SO)

In 2019, the Museum of Music Automaton celebrated its 40th anniversary. When it opened its doors in April 1979, the museum was privately run. In 1990, it passed into public hands when the founder Dr. h.c. Heinrich Weiss-Stauffacher (*1920) and his daughter Susanne Weiss gifted the museum and its collection to the Swiss Confederation. A large extension was built, which doubled the exhibition space to around 1200 m² and brought the institution up to modern museum standards. It has been open to the public since 2000.

The museum is home to one of the world's largest collections of Swiss music boxes, internationally important examples of Swiss cylinder and disc music boxes, musical timepieces and jewellery, as well as other mechanical musical automata from Switzerland and elsewhere that date from the 18th century to the present day. The collection has expanded continually since 1990 thanks to the acquisition of carefully chosen pieces. It now boasts around 1 350 objects, as well as some 12'000 music rolls and other recordings. In 2006, the Museum took over the phonograph and gramophone collection of the *Kornhaus Burgdorf Foundation*, substantially boosting its holdings.

The museum's operations are spread over four floors. The publicly accessible part of the museum – the four climate-controlled exhibition rooms – is located on the ground floor. Offices, a conference room, library and photo studio are on the first floor, with the restoration workshop on the third. The

basement is home to a secure cultural property shelter where objects that are not on display are stored according to professional museum standards. Institutions and members of the public may use the museum library on request.

The anniversary exhibition *'Automaton Music 4.0 – 40 Years, 4 Themes, One Exhibition and Visions of the Future'* is a retrospective of forty years given over entirely collecting and sharing.

Séverine Gueissaz: CIMA – international centre of mechanised art

Founded in 1985, the CIMA Museum in Sainte-Croix (VD) is home to a vast collection of music boxes, mechanical automata, barrel organs, orchestrions, mechanical pianolas and songbirds. It also has a life-size replica of a vintage mechanical workshop, as well as many historical sound reproduction machines, such as radio sets, gramophones and record players by makers Paillard and Thorens.

The advent of electronics plunged the region into crisis. One of the primary missions of the CIMA museum was to preserve and enhance this heritage, while safeguarding local expertise in mechanised art. It therefore set about attracting new skills to the region by offering an environment and facilities that were conducive to advancing this specialist know-how. Thirty years on, quite a few highly qualified craftspeople, including automata repairers, early music box and timepiece restorers and clockmakers have settled permanently in the region.

The CIMA Museum, together with local craftspeople, regularly stages temporary exhibitions, special events, induction workshops (making music boxes and basic automata) and school visits. It also runs its own season of concerts that give musicians the opportunity to interact with pieces from the museum collections.

Hans Hirsbrunner: History of the chamber organ in Switzerland

In Switzerland, the history of the chamber organ differs markedly from the rest of Europe. Between 1750 and 1820 alone, as many as 100 chamber organs were built in Toggenburg by five organ builders; in Emmental, 20 local organ builders produced some 200 instruments over the same period. The earliest surviving chamber organ in Switzerland is a Bal-dachin dating from the mid-16th century; it is now on display at the Rhaetian Museum in Chur.

The Basel Historical Museum collection features a positive organ which was made towards the end of the 17th century for a private chapel. The cantons of Zurich and Bern are also home to a number of early 18th century chamber organs. Works by 16th century composers like Hans Kotter and Clemens Hör, as well as various anonymous music manuscripts from the 17th and 18th centuries would have been played on a variety of keyboard instruments, including the chamber organ. At that time, chamber organs were found in grand townhouses across Swiss cities of the Reformation. By around the mid-18th century, they had been replaced by harpsichords, clavichords and, later, fortepianos.

Chamber organ-building became increasingly concentrated in rural areas like Toggenburg, Appenzell-Ausserrhoden, Zurich Oberland and Emmental. Protestantism and the emerging pietist movement led to a surge in the popularity of chamber organs. In contrast to their fellow organ builders in Emmental, Toggenburg craftsmen signed their works. Also, in contrast to Emmental, a handful of chamber organ works still survive in Toggenburg. Another difference between the two organ-building centres is the instruments from Emmental have a darker, mellower sound than those from Toggenburg.

At the end of the 19th century chamber organs began to fall out of favour and were replaced by pianos and harmoniums. In around 1930, however, organ builders began making practice organs for professional church organisations. These instruments had two manuals and a pedal, and allowed organists to practise at home.

Contemporary chamber organs come in different styles. Some are built based on Renaissance and Baroque designs. Others copy the style of the salon organs made by famed French organ builder Aristide Cavallé-Coll. Romainmôtier has a number of unusual chamber organs, including a large Albert Alain chamber organ with three manuals, a pedal and 43 registers. The chapel of Meggenhorn Castle and the Museum of Music Automaton in Seewen are home to large self-playing organs built in the early 20th century by Welte-Mignon. Historical square pianos, harpsichords, clavichords and chamber organs dating from the 18th and 19th centuries are also found in Swiss private collections.

These parts of our musical heritage deserve to be inventoried.

Adrian von Steiger: Preserving period wind instruments

There is an inherent dilemma when it comes to preserving period musical instruments: should they be decommissioned and, in doing so, see their value limited to that of a historical document? Or, should they continue to be played, albeit occasionally and under supervision and therefore run the risk of damaging or even destroying them? Here, wind instruments are particularly vulnerable due to breath moisture.

The historical performance practice of Early Music puts museums under considerable pressure to let professional musicians play period instruments in their collections. The ideal solution to this problem is replicas. However, it is impossible to craft an accurate reproduction without playing the original instrument first. When restoring historical instruments, it should be kept to a minimum and aim to return the instrument to basic playable, but not concert-level, condition.

A research project led by Bern University of the Arts has found that drying the inner surfaces of brass instruments with a ventilator after they have been played almost completely prevents corrosion. Another project succeeded in restoring period woodwind instruments – an advance that will also be helpful when creating accurate replicas. The expansive collection of over 1000 wind instruments in the *Klingende Sammlung in Bern* (ex-Karl Burri Collection) has played a decisive role in this research work.

Ulrike Henningsen, Michael Marek: Early wind instruments and 3 D printing

The digital revolution is one of the greatest changes taking place around us. Discussions on 3D printing, for example, are peppered with buzzwords like 'Industry 4.0', 'innovation driver' and 'engine for development'. Scientists claim that this new technology will completely transform our daily lives. 3D printing offers so many possibilities which fields like medical technology, the automotive, aeronautical and construction industries, and even music (instrument-making) have already begun to tap into.

Additive manufacturing technologies, to use the technical term, are a window of opportunity for sectors where the use of high-performance machinery is not the norm. In the world of instrument-making, high-tech and tradition have frequently clashed. Things, however, have moved on somewhat, with the advent of carbon-fibre instruments like violins, flugelhorn, trombones and trumpets.

Ricardo Simian successfully combines the centuries-old culture of cornetto-playing with the latest 3D printing technology. Ulrike Henningsen and Michael Marek visited the Basel-based musician and instrument maker to discuss the opportunities and risks that 3D printing and its high-tech machinery poses for the art of instrument-making.

Armin Zemp: Biotech violins

Do violins made of wood that had been treated with fungi sound the same as a fine, antique instrument? Acoustics experts at Empa are currently studying the body and soul of instruments made of *mycowood*. Precision structure-borne sound measurements and psycho-acoustic tests with volunteers should reveal whether a fungal treatment can really improve an instrument. This is made possible by Walter Fischli, whose foundation helps fund the project.

Precision structure-borne sound measurements and psycho-acoustic tests with volunteers should reveal whether a fungal treatment can really improve an instrument. Global warming is one explanation, says Francis Schwarze from Empa's Applied Wood Materials lab in St. Gallen. "Nowadays, trees grow more rapidly and unevenly than during a very particular cold spell in the 17th century, when the wood for Stradivari's instruments was felled," explains the wood researcher. Apparently, today's timber has less favourable properties for violin-making.

Even in the run-up, the *mycowood* violins received plenty of praise. The first specimens have already competed successfully against a 1711 Stradivarius in a blind test in front of an audience. Currently tests are being carried out in order to acquire further insight into the future chances of success of the project.

Gabriella Hanke Knaus: Mariastein Abbey reorganises its music collection

The reorganisation of the Mariastein Benedictine Abbey music collection ran from 2010 to 2017. The aim of these efforts was to make its holdings accessible again to the public. Its rather random and virtually untapped holdings of autograph scores, transcripts and contemporary printed scores are now integrated in a music collection that meets the necessary indexing, long-term preservation and accessibility standards.

To achieve this, a complete overhaul of the collection was needed. Historical sources (manuscripts and early printed books dating up to 1850) and printed music published from 1850 onwards were transferred to the *Music Archives* and *Music Library* holdings. Two of the key requirements at the forefront of the reorganisation efforts were:

- the safeguarding and long-term archiving of the collection, and
- the streamlined management and care of the collection and making it available to a broad public.

The team catalogued over 12'000 manuscripts and printed material, and entered this information on the public database: <http://www.musiccollections.ch>

This part of the music collection offers valuable insights into the general history of Mariastein, and its history of music patronage specifically, from 1683 to the latter day. It is also evidence that monastic music collections not only document their own musical compositions (monastic composers) but also serve as repositories for new musical trends and acquisitions.

Alexandra Kull: The harp of Ur – a 4 500 year-old sleeping beauty

Many of the cuneiform tablets discovered in Mesopotamia feature multiple depictions of musical instruments, singers and dancers – proof positive of the existence of a music scene in the region and the important part that music played in the life of its people. The remnants of musical instruments – metal plating and non-perishable parts – which were found in the graves of the Royal Cemetery at Ur add another dimension to our existing knowledge.

So far, excavations have unearthed nine lyres, two harps, a silver double flute, a sistrum (a type of rattle) and cymbals. In some cases, moulds could be made by carefully pouring plaster of Paris into the cavities left by the instruments' decayed organic material. Afterwards, they were used to fashion replicas. The remains of the harps and lyres found at the Royal Cemetery at Ur are the only known surviving examples of string instruments from the third millennium BC.

Since 2016 the ancient city of Ur, which lies around 320 km south of Baghdad, has been part of the UNESCO World Heritage Site of the *Iraqi Marshlands (al-Ahwar of Southern Iraq): Refuge of Biodiversity and the Relict Landscape of the Mesopotamian Cities*. The excavations in the late 1920^s were led by Leonard Woolley, and the finds attracted global attention due to their outstanding artistry and craftsmanship. Today, they are on public show in the *Iraq Museum*, the *British Museum* and *Penn Museum (University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia)*. The Iraq Museum and the Ancient City of Ur are now open to visitors again, but it is advised not to travel there.

Olivier Melchior: la Cité de la musique – a Parisian paradise for music lovers

La Villette in the 19th arrondissement of the French capital is home to the Philharmonie de Paris, itself part of the *Cité de la musique*. This complex was designed by architect Christian de Portzamparc and is famed worldwide for its collection of instruments and art works. Opened in 1997, its 1900 m² museum boasts a collection of over 8000 musical instruments and more than 1000 works of art.

The museum traces the history of music from the 16th century to the Modern Age and offers an impressive insight into global music culture. The design of the permanent exhibition means that the musical instruments and works of art are displayed in the appropriate historical setting. The museum also offers visitors many different ways to experience music, including guided tours, free concerts and music workshops for children. Promenade-concerts and story-telling through music and the spoken word are also part of this fascinating journey through the multifaceted universe of music.

As well as an exhibition space, the *Musée de la musique* is a centre of musicology and conservation expertise. Much of its research findings are published both in print and online.

A particular challenge for the museum is ensuring that its exhibits are preserved under the best possible conditions, while at the same time bringing them to life for visitors. Its solution is to stage concerts that include performances by professional musicians on period instruments from its collection.

In 2010 the museum underwent a complete re-design. Displays now place the instruments and works of arts in their historical and geographical context, while many recordings have been digitised and are now accessible to visitors. Objects and instruments are continually being added to the exhibition; around 8419 exhibits are currently on show, of which some 5500 are instruments. The

museum also hosts temporary exhibitions that have already delighted the museum-going public in many other parts of the world.

Today, the museum is one of the leading music institutions worldwide and its research division enjoys great renown, publishing some 150 research papers to date.

The museum catalogue (available at <https://philharmoniedeparis.fr/>) features roughly 5000 musical instruments, as well as 800 paintings, engravings and sculptures with musical motifs. It also includes an array of instrument-making tools and utensils, and as many as 20'000 photographs. The digitalisation of the archives continues and, once complete, these files will be shared with the public.