

Bernd-Michael Land



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An Audiovisual
Investigation of
Space, Faith, and
Seismic Memory

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In the Echo of the Foundation

Between Stone and Voice: Sound Art as a Resonant Space for Past and Present.

Fundament (*Foundation*) is a 45-minute audiovisual sound artwork that explores Frankfurt's Paulskirche as a historical, spatial, and acoustic resonant space.

The starting point is the German National Assembly of 1848, which can be understood as a central reference point in the history of German democracy and as a symbolic foundation stone of parliamentary self-determination.

The term **Fundament** thus refers both to the historical foundations of democratic order and to the question of which values sustain and hold a society together.

Between memory, the present, and social polarization, an artistic dialogue emerges around freedom, participation, equality, and collective identity.



Sound recordings created using geophones and binaural technology explore the Paulskirche as a physical and acoustic resonant space.

Complemented by processed speech samples relating to the debates of the National Assembly, the work translates historical voices and narratives into a contemporary, sensorially immersive sonic language.

Fundament thus brings together space, history, and sound in an audiovisual reflection on the conditions that underpin democratic coexistence, asking: What foundation does an open and pluralistic society stand on today?

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The National Assembly of 1848

The Historical Foundation of the Paulskirche

The conceptual foundation of the **Fundament** project is rooted in a central historical site in the history of German democracy: Frankfurt's Paulskirche.

Image on the right:
St. Paul's Church in Frankfurt am Main was inaugurated in 1833 and, after its destruction during World War II, was rebuilt in 1948 as a symbol of a democratic new beginning.



In May 1848, the first pan-German National Assembly convened there. The delegates aimed to establish a democratically legitimized nation-state and to formulate fundamental civil liberties and citizens' rights.

Although the political aims of the Revolution of 1848/49 ultimately failed, the assembly in St. Paul's Church (Paulskirche) marked a decisive turning point in the history of democratic development in Germany.

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Research Question and Motivation

Personal Background of the Sound Art Project

The motivation for this art project is closely connected to my personal biography and to the social developments that I have observed over many years.

From an early age, my family upbringing encouraged me to think in democratic terms. Values such as tolerance, respect, acceptance, and diversity were firmly embedded in our family life and had a lasting influence on my understanding of society.

I grew up in social housing in a culturally diverse environment.

Many of my friends came from families of guest workers from different countries of origin, including people with a wide range of ethnic and cultural backgrounds.

These experiences of growing up together in a pluralistic society have profoundly shaped my understanding of community, belonging, and social interaction.

Image on the right:
House No. 161 on
Hugenottenallee in
Neu-Isenburg,
circa 1977



Over the past decades, however, I have observed changes in the social climate. In particular, the appreciation of democratic principles and cultural diversity seems to be increasingly under pressure.

This observation has inspired me to engage artistically with questions of identity, memory, faith, and human solidarity.

The realization of the Fundament project is therefore not only an expression of my artistic interests, but also the result of a deeply personal and timely reflection. The project seeks to make spaces and their stories audible and visible, while exploring the significance of memory, cultural diversity, and democratic values in the context of contemporary public life.

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Dieses Verhältniß ist einzig und allein durch die Verfassung Belgiens begründet, und die deutschen, so ganz verschiedenen Zustände möchten doch die Begründung des dort beliebten Verhältnisses ebenso sehr erschweren, als widerathen. Mir scheint, daß Manche die absolute Trennung der Kirche vom Staate nur deswegen fordern, weil sie dieselbe nach ihren Beobachtungen und Erfahrungen in ihren engeren Kreisen für wünschenswerth und nothwendig halten. Ich komme von einem Lande, wo die absolute Trennung der Kirche vom Staate am Allerungefährlichsten sein dürfte; allein mir scheint, man muß doch auch die anderen Länder mit ihren verschiedenen Zuständen und Verhältnissen im Auge behalten. Ich erlaube mir, daran zu erinnern, daß das Verhältniß zwischen Religion und Staat doch auch große Vortheile gehabt hat. Was will man zu ehren, so würde von Staatswegen weder den Eimen, noch den Andern ein Hinderniß in den Weg gelegt werden, vorbehaltlich der Restriktionen, die der Art. III. hat, und die auch ich bei § 12 und 13 beibehalten habe. Den § 12 wünsche ich so gefaßt: „Jeder Deutsche ist unbeschränkt in der gemeinsamen öffentlichen Ausübung der christlichen Religion; auch ist die öffentliche Ausübung der jüdischen Religion allen Beschränkungen entzogen.“ Ich will nicht wiederholen, was ich gedruckt in Ihren Händen befindet, denn ich nehme Ihre Zeit nicht gern lange in Anspruch. Deshalb will ich aus meiner Mittheilung nur kurz herausheben, daß hierdurch einem religiösen Bedürfniß nirgends so nahe getreten wird, und von einem Rechte, die öffentliche Religionsausübung für alle Secten zu fordern, nicht die Rede sein kann. Den § 13 würde

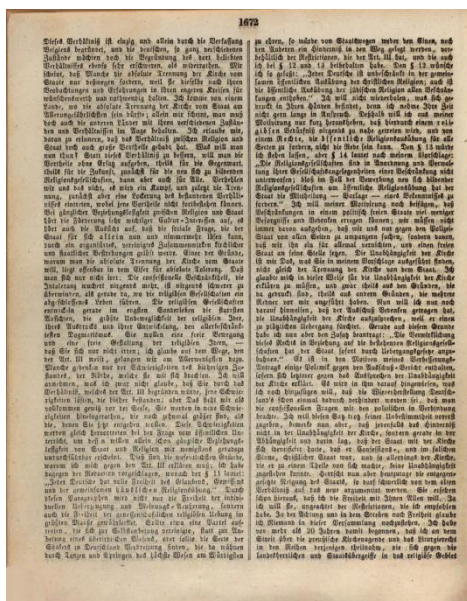
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Sound as a Bridge

Between Memory and the Present

This sound work aims to create an artistic bridge between the past and the present.

It connects the culture of remembrance with current social issues and provides a sensory approach to democratic processes that are often perceived as abstract or simply taken for granted.



The focus is less on an exact documentary reconstruction of past events than on the question of how history is embedded in spaces, how memory can be made perceptible through sound, and what significance historic places hold for the collective consciousness of a society.

The interplay of sound, space, and memory makes it possible to perceive the Paulskirche not merely as a monument or memorial site, but as a resonant space for social experiences and political ideas.

The project explores how inherited narratives, individual perceptions, and collective memories overlap and influence one another within an artistic medium.

In this way, the work becomes an aesthetic reflection on the foundations of democratic coexistence and their significance for the present.

Fundament can thus be understood as an audiovisual exploration of the relationships between space, history, faith, and social identity.

The work invites audiences to perceive the origins of democratic culture from a new perspective and to consider the question of what foundations an open, pluralistic, and democratic society rests upon today.

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Space and Vibration

Acoustic Exploration and Sonic Mapping

For the project ***Fundament***, the sound recordings were made using geophones as well as binaural recording techniques.

Together, these two methods serve to explore the church interior as a physical, acoustic, and historical resonant space. They make it possible to experience different yet complementary dimensions of spatial perception—from the hidden vibrations of the architecture to the three-dimensional experience of sound.



The geophones were deployed at various points along the walls and floor to capture seismic microvibrations within the building structure.

These highly sensitive sensors register the tiniest mechanical movements and structure-borne sound events that would normally remain imperceptible to the human ear.

In particular, the vibrations and micromovements of the massive foundation were made accessible as acoustic material in this way.

The signals recorded not only document physical processes occurring within the architecture, but also open up an artistic perspective on the building as a living organism and a vessel of historical memory.

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Artistic Methodology

The Technical Realization of the Field Recordings

In parallel, binaural spatial sound recordings [A1/A2] were also made to capture the specific acoustic characteristics of the church interior, including footsteps and the ringing of the bells.

This technique enables a three-dimensional documentation of the sound field and authentically reproduces the experience of spatial listening. Reverberation times, resonances, atmospheric sound events, and the distinctive acoustic signature of the space were preserved.

Image on the right:
Seismic Sensor
"Geophone L" by
LeafAudio



While the geophones make the hidden vibrations and material movements of the architecture audible, the binaural recordings capture its acoustic presence within the space.

The combination of both methods creates a multilayered sonic portrait of the site, reflecting both its material substance and its atmospheric qualities. [A3/A4/A5]

Following the field recordings, the sound materials were analyzed in the recording studio, extensively processed, and further developed compositionally.

Based on the documented vibrational data, resonances, and spatial sounds, an independent audiovisual composition was created specifically for exhibition contexts. [A6]

The sonic processing is not intended as purely scientific documentation, but rather as an artistic transformation of the material. The hidden layers of the building are translated into an aesthetic form that brings together historical, spatial, and emotional dimensions.

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Voice as Fragment

Loss of Intelligibility as Sound Dramaturgy

The gradual restriction of speech intelligibility toward the end is not merely the result of an aesthetic process of distortion; rather, it serves a dramaturgical function: it symbolically evokes a gradual process of democratic erosion.

Analogous to the gradual loss of linguistic clarity, the erosion of democratic structures is not experienced as an abrupt rupture, but as a slow, often barely perceptible process.

Acoustic Deformation

Tools of Distortion

Ring Modulator & Bitcrusher

The use of a ring modulator and bitcrusher gives the voices a metallic, harsh, and artificially aged sonic character. Through the deliberate reduction of resolution and the generation of inharmonic overtone spectra, the voices lose their natural presence and appear fragmented and mechanically distorted.

This sonic aesthetic of fragility and disintegration functions as an acoustic metaphor for systemic decay as well as for the political and social conflicts of the revolutionary period. The distortion not only makes the historical rupture audible, but transforms it into a sensuously perceptible sonic structure. [A7/A8]

Pitch Shifting via Analog Tape Material

Changing the tape speed in the analog tape process modifies the pitch of the voices and partially detaches them from their individual identities.

A significant lowering of the pitch lends them a threatening, superhuman sense of authority, or the sonic weight of an anonymous, collective mass.

At the same time, disrupting the familiar intonation creates a perceptual sense of disorientation: the voice appears simultaneously human and alien.

This decoupling of voice and identity reflects the existential uprooting and loss of familiar structures that characterize periods of historical upheaval. [A9]

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Temporal Sound Direction

Microstructures Between Space and Time

Time-Stretching

Through the extreme temporal stretching of the speech recordings while maintaining the original pitch, words and syllables are exposed down to their microtonal and spectral components. Language loses its immediate communicative quality and is transformed into a sonic object whose internal structures become audible.

As a result, individual terms acquire a monumental, almost sacred weight and open up a contemplative listening space in which historical meaning and sonic materiality interpenetrate.

Delay & Reverb

The use of delay and reverb effects detaches the voices from their original spatial and temporal locations and transfers them into an imaginary, expanded acoustic space.

Through the virtual extension, temporal delay, and multiple reflections of the sounds, the words appear to emancipate themselves from their physical source and transcend the boundaries of real space.

The sound is therefore no longer perceived merely as an immediate event, but as a floating presence that mediates between past and present.

In this sonic transformation, the voices appear as acoustic spaces of memory. They carry traces of past events within them and allow the demands for freedom and social change articulated in them to continue resonating beyond the moment of their original emergence.

The reverberating and repeating sonic material creates the impression of an ongoing memory, in which historical voices do not appear concluded or silenced, but rather extend into the present space as living resonances.

Reverb and echo become an acoustic memory of the enduring impact of historical movements and point to the temporality of memory. Historical events do not disappear completely; rather, they remain preserved as sonic traces whose aftereffects continue to be audible and perceptible into the present. [A10]

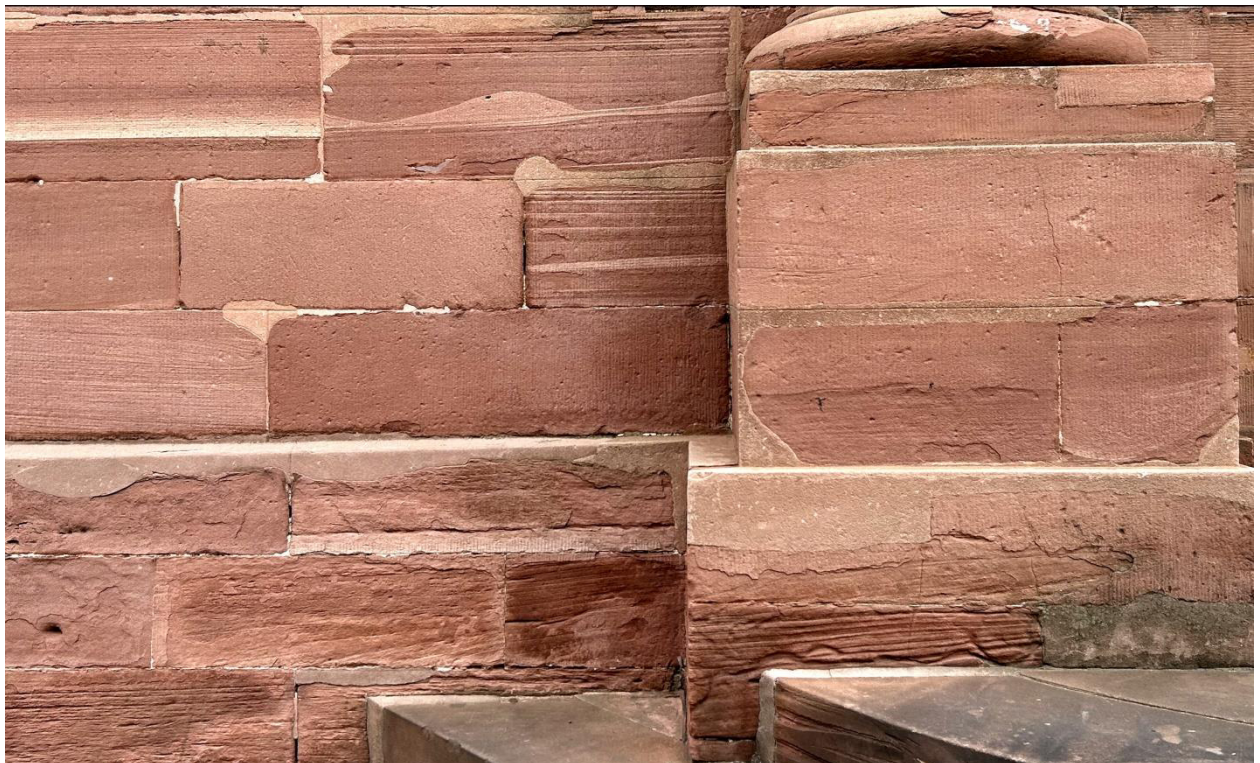
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Visual Stratigraphy

Revealing the Layers of Time, Material, and History

The visual design of Fundament follows a reduced, material-oriented visual language that seeks to make the hidden and historical perceptible.

At the center of the visual composition are detailed recordings of rough surface structures, all of which were captured directly from the original foundations of St. Paul's Church. These authentic stone textures are overlaid with fragments of historical imagery. This creates a visual fabric that reveals the temporal layers of the site in a collage-like manner.



The resulting projections do not function merely as illustrative accompaniment to the sound. Rather, they establish a completely autonomous visual layer that directly interacts with the architectural conditions of the foundation.



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Dialogue and Resonance

Democratic Reflection in Space, Time, and Memory

Through the interplay of light, structure, and space, a dialogical relationship emerged, allowing the historic architecture of the Paulskirche itself to become an active part of the staging.

The project's clear objective was to create a reflective space of experience in which scientific measurement methods, artistic transformation, and historical reflection converged.

Thus, a place was created that invites people to pause and reflect—with the overarching aim of strengthening awareness of our democracy as a precious yet vulnerable achievement.



Through the interplay of sound, projection, and architecture, questions of time, memory, and materiality become a tangible sensory experience.

The historic building was not understood merely as a stone shell, but as a living bearer of cultural meaning and democratic identity.

This work revealed those hidden layers that usually remain invisible in everyday life, making them audible and visible and thereby opening up new perspectives on the profound relationship between space, history, and our collective memory.

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Interpretation of the Source Material

Material Selection: From Archive to Present

The project establishes a connection between the historical reference point of the Frankfurt National Assembly of 1848 and research into spatial acoustics.

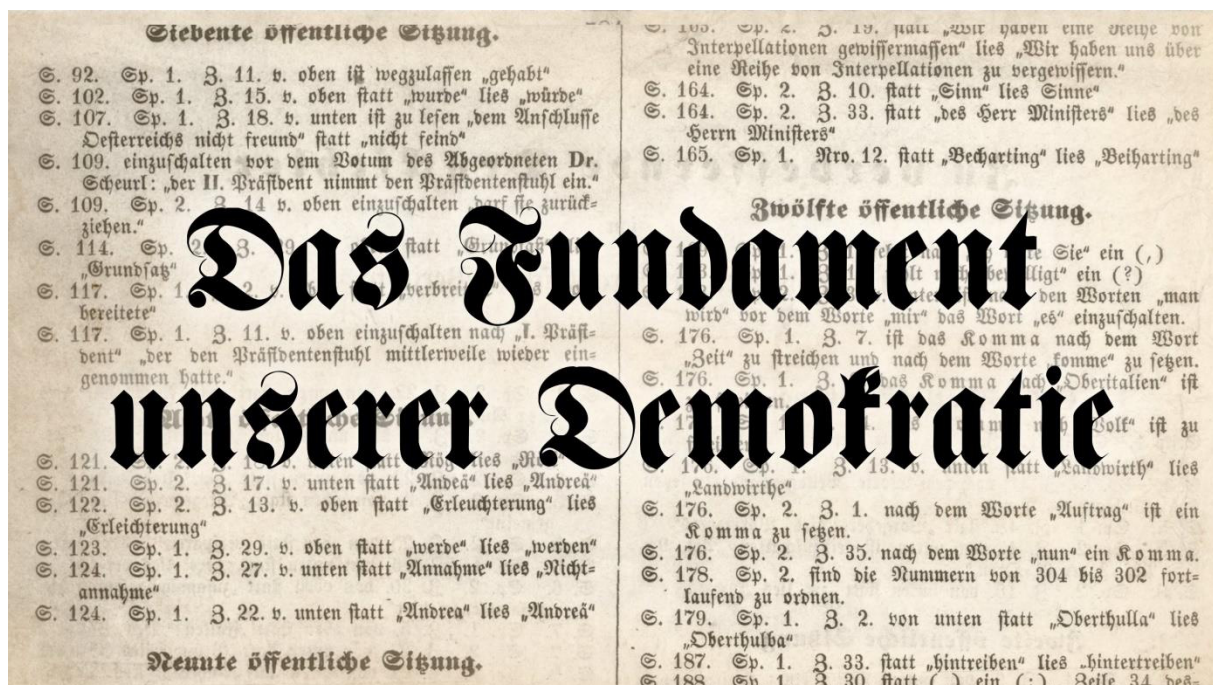
The integration of speech samples does not serve as a purely documentary reconstruction, but rather as an artistic translation of historical voices into a contemporary soundscape.

The Connection to the National Assembly of 1848

The project takes as its starting point selected keywords and key passages from the original debates held in the Paulskirche in 1848.

The historical texts were interpreted by the artist through studio recordings and transformed into a new artistic context.

By bringing together voice, space, and visual design, a multilayered narrative structure emerges in which historical sources merge with contemporary reflection.



Historical Voices in a Resonant Space

The integration of historical speech fragments does not aim at a purely documentary reconstruction, but rather serves as an artistic translation of voices from the past into a contemporary space of sound and perception.



Interpretation of the Source Material

Caught Between Time and Space

The text composition is structured into four sections:

Section 1 comprises original historical quotations from the speeches of the Frankfurt National Assembly of 1848/49. These voices of political awakening emerge as authentic testimonies of an era in which questions of freedom, participation, democracy, and social change were debated with great intensity. The historical text fragments retain their original force, entering the contemporary space as direct voices from the past.

Section 2 consists of artistic additions that connect with the historical statements in the spirit of 1848. These extensions are not reconstructions, but rather a free poetic and associative continuation of the ideas of the time. They open up a space of resonance in which historical demands, hopes, and conflicts are translated into a contemporary perspective. The past is therefore not merely observed, but experienced as a living space for reflection.

Section 3 incorporates excerpts from historical debates and social conflicts of the period. These passages highlight the complexity of the political processes of the time and demonstrate that democratic developments are always shaped by differing positions, tensions, and conflicting voices. History is thus understood not as a linear narrative, but as a dynamic field of arguments, hopes, and contradictions.

Section 4 creates a condensation through keywords and resonances. Individual terms and brief textual impulses appear as concentrated linguistic images, moving through the visual composition like traces of echoes or memories. They bring together central themes and create transitions between the historical sources, the artistic additions, and the perception of today's audience.

Thus, a multilayered space of resonance emerges in which historical voices are not merely preserved, but reactivated. The project explores how language, sound, and space can act as carriers of collective memory, and how historical experiences can regain meaning in the present through artistic transformation.

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Sequential Rhythmic Structure

Composition of the Temporal Dramaturgy

The temporal composition of the text structure follows a precisely defined dramaturgy. The short textual elements appear at exact 30-second intervals, establishing a recurring temporal order within the overall composition.

Between the individual textual insertions, an acoustic space unfolds, composed of echoes, reverberation, and seismic recordings of the building's foundation. These sonic intervals function as fields of resonance in which the linguistic fragments continue to reverberate and connect with the material presence of the site.

Up to the 30-minute mark, a continuous sequence develops between historical voices and artistic transformations. At each full minute, the original historical quotations emerge, marking the temporal anchors of the composition. In between, the artistic additions appear as interpretative and poetic extensions that respond to the historical statements.

The rhythmic organization thus brings language, sound, and time together within a shared compositional structure. The deliberately slowed dramaturgy creates a concentrated space of perception in which individual words and fragments of sentences can develop their own temporal and emotional presence. Text and image enter into a dialogical rhythm: language is not conveyed merely as information, but becomes an experience—visual, acoustic, and spatial.

The combination of historical quotations, artistic texts, and the subtle acoustic movements of the foundation creates a multilayered composition between memory, materiality, and the present. The rhythm of the textual projections follows not only a temporal order, but also a musical logic of listening and perception.

In addition, further visual text fragments are introduced as brief statements that support the dramaturgical progression and accentuate individual moments. These fragments function like brief impulses or flashes, intensifying both the emotional and thematic tension.

Thus, an artistic text composition emerges in which historical voices, contemporary questions, and poetic additions interweave. The work moves between archive and imagination, between documentary transmission and artistic transformation. The events of 1848 are not presented merely as a chapter of the past, but as an enduring space of resonance in which fundamental questions of freedom, democracy, and social responsibility continue to be heard.



Temporal Structure & Sequence

Section 1

Original Quotations (Historical)

01:00 „Wir sollen schaffen eine Verfassung für Deutschland.“
02:00 „Der Beruf und die Vollmacht liegen in der Souveränität der Nation.“
03:00 „Die Nation ist souverän.“
04:00 „Alle Staatsgewalt geht vom Volke aus.“
05:00 „Die Freiheit der Person ist unverletzlich.“
06:00 „Alle Deutschen sind vor dem Gesetze gleich.“
07:00 „Die Presse ist frei.“
08:00 „Die Wissenschaft ist frei.“
09:00 „Der Glaube ist frei.“
10:00 „Jeder Deutsche genießt Gewissensfreiheit.“
11:00 „Die Wohnung ist unverletzlich.“
12:00 „Die Auswanderungsfreiheit ist gewährleistet.“
13:00 „Es gibt keine Standesvorrechte.“
14:00 „Die Todesstrafe ist abgeschafft.“
15:00 „Das deutsche Volk.“

Note:

The original quotations used in the project are in the public domain (CC license) and were taken from the Stenographic Report on the Proceedings of the German Constituent National Assembly in Frankfurt am Main. The historical source is provided by the Bavarian State Library in Munich.

Sektion 2

Künstlerische Ergänzungen (im Geist von 1848)

16:00 „Die Freiheit beginnt mit einer Stimme.“
17:00 „Demokratie lebt vom Zuhören.“
18:00 „Jede Stimme trägt Verantwortung.“
19:00 „Kein Fundament ohne Freiheit.“
20:00 „Erinnerung ist Zukunft.“
21:00 „Das Parlament hört zu.“
22:00 „Die Geschichte spricht.“
23:00 „Das Fundament trägt uns.“
24:00 „Wer schweigt, verliert.“
25:00 „Die Freiheit braucht Mut.“
26:00 „Das Volk entscheidet.“
27:00 „Die Würde ist unteilbar.“
28:00 „Vielfalt schafft Gemeinschaft.“
29:00 „Demokratie ist niemals selbstverständlich.“
30:00 „Das Fundament lebt.“



Temporal Structure & Sequence

Section 3 Historical Debates

01:30 „Ein freies deutsches Volk.“
02:30 „Die Gewalt geht vom Volke aus.“
03:30 „Freiheit des Glaubens.“
04:30 „Freiheit der Meinung.“
05:30 „Öffentliche Verhandlungen.“
06:30 „Verantwortliche Regierung.“
07:30 „Unabhängige Gerichte.“
08:30 „Gleiche Rechte.“
09:30 „Keine Willkür.“
10:30 „Ein freies deutsches Volk.“
32:00 „Ein Parlament für Deutschland.“

Section 4 Resonances

31:00 „Freiheit.“
31:30 „Verantwortung.“
32:30 „Menschenwürde.“
33:00 „Verfassung.“
33:30 „Gleichheit vor dem Gesetz.“
34:00 „Pressefreiheit.“
34:30 „Bürgerrechte.“
35:00 „Einheit Deutschlands.“
35:30 „Parlament.“
36:00 „Die Stimme des Volkes.“
36:30 „Das Recht auf Mitbestimmung.“
37:00 „Freiheit verlangt Verantwortung.“
37:30 „Die Verfassung schützt die Freiheit.“
38:00 „Macht braucht Kontrolle.“
38:30 „Demokratie lebt vom Dialog.“
39:00 „Niemand steht über dem Gesetz.“
39:30 „Vielfalt ist Stärke.“
40:00 „Jede Stimme zählt.“
40:30 „Die Zukunft beginnt heute.“
41:00 „Freiheit ist niemals selbstverständlich.“
41:30 „Erinnerung schafft Verantwortung.“
42:00 „Demokratie braucht Mut.“
42:30 „Der Wille des Volkes.“
43:00 „Gerechtigkeit für alle.“
43:30 „Gemeinsam tragen wir Verantwortung.“
44:00 „Gemeinsam tragen wir Verantwortung.“
44:30 „Das Fundament unserer Demokratie.“
45:00 „Die Geschichte klingt nach.“

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Image Appendix

Visual Documentation and Technical Contextualization

The following collection of images supplements the preceding texts with a visual dimension.

It documents the specific recording situations on site and captures the distinctive atmosphere of the space, thereby making the process of creating the sound recordings in St. Paul's Church comprehensible.

In addition, it illustrates the technical equipment in actual use.

[Figure 1]

Image on the right:

Recording of seismic movements from the natural stone wall in St. Paul's Church



[Figure 2]

Image on the right:

Zoom H4n Pro Digital Recorder with FetHead Preamp and Geophone L



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Image Appendix

[Figure 3]

Image on the right:

Zoom H3-VR Binaural Audio Recorder

360° audio recording with 4 integrated microphones in an Ambisonics configuration



[Figure 4]

Image on the right:

FetHead by Triton – a preamplifier for low-level audio signals.

Power is supplied via 48V phantom power.



[Figure 5]

Image on the right:

**Zoom H4n Pro
4-track digital audio recorder**



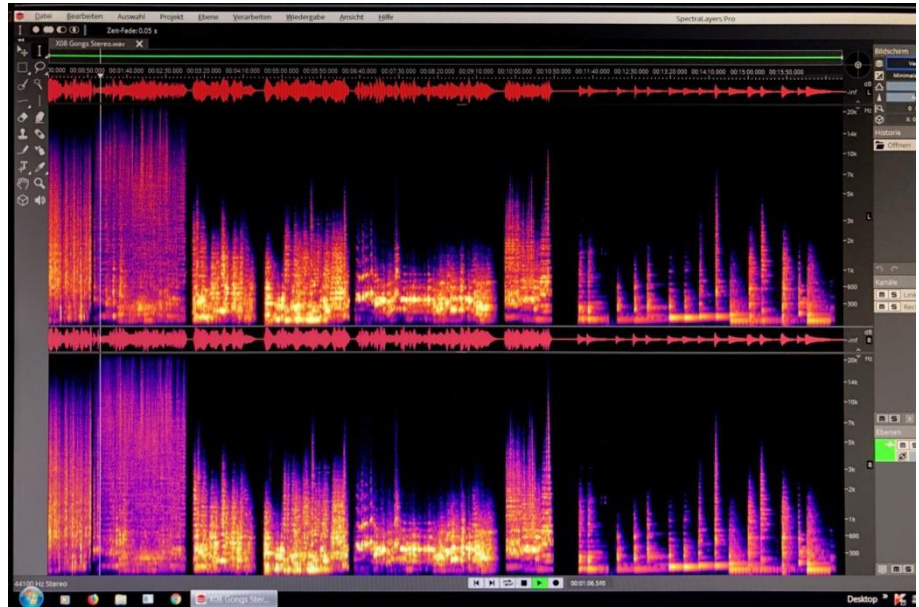
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Image Appendix

[Figure 6]

Image on the right:

**SpectraLayers by
Steinberg**
Audio tool / editor for
spectral editing



[Figure 7]

Image on the right:

**Various ring modulators
were used:**

**Christian Günter XG-1
(left)**

**Moogerfooger MF-102
(right)**



Image below:

DACS Freque II – Stereo Ring Modulator & Pitch Shifter



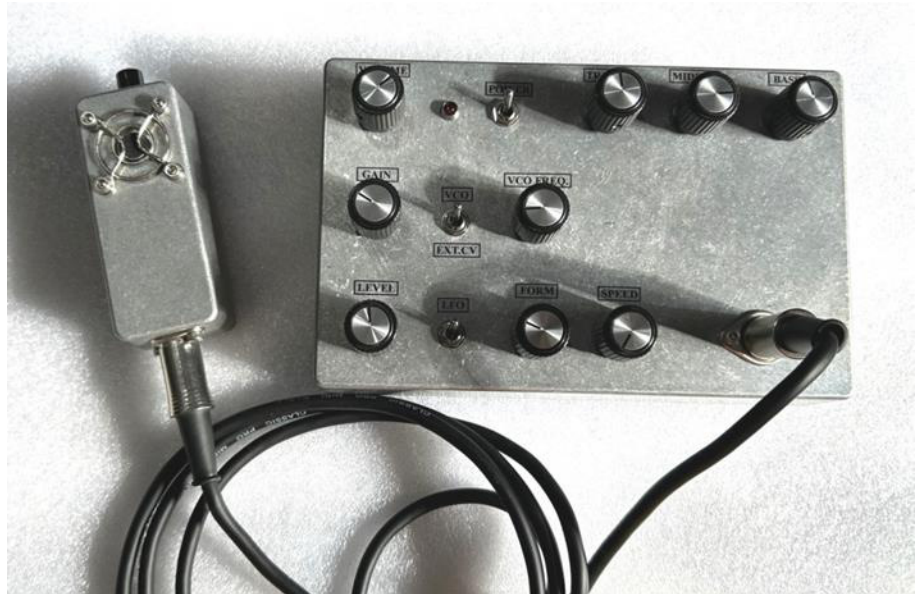
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Image Appendix ildanhang

[Figure 7]

Image on the right:

JMT Synth – Noisy Mic-2
Voice synthesizer,
ring modulator,
analog multiplexer



[Figure 8]

Image on the right:

Sonic Alienator by Frostwave
– Bit Crusher + Decimator



Image on the right:

The Pipe by SOMA
– voice- and
breath-controlled
effect processor and
synthesizer.



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Image Appendix

[Figure 9]

Image on the right:

NAGRA III
Analog tape recorder
with various tape speeds
(9.5 – 19 – 38 cm/s)



Image on the right:

Sony TC-D5
Cassette recorder



Image on the right:

Loopman II by
Error Instruments
(Eurorack module)
with manual and
CV control for
tape speed / pitch



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Image Appendix

[Figure 10]

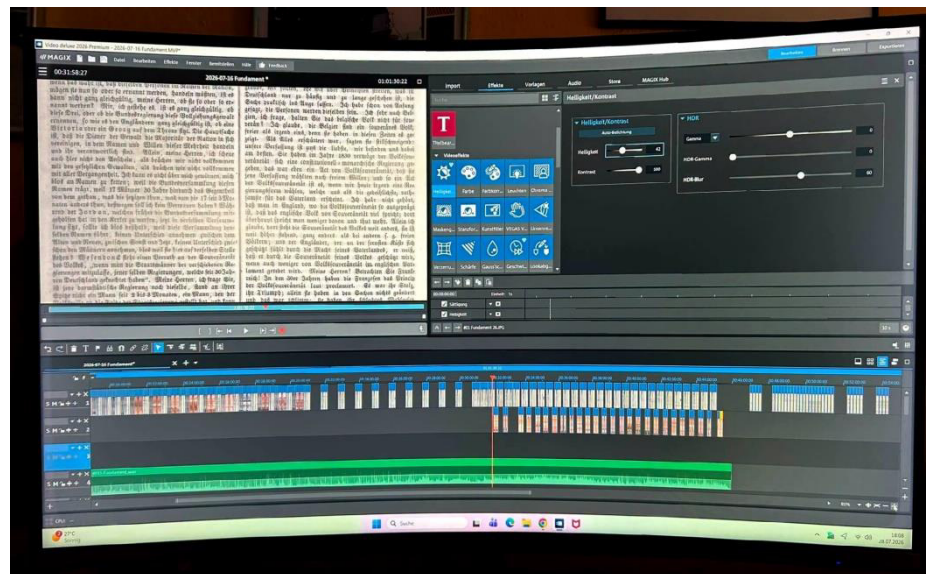
Image on the right:

LVX by Meris
– one of several delay
and reverb effects used



Image on the right:

**Editing the individual
frames of the video
using MAGIX Video
Ultimate 2026**



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