

Conversational Machines

Study of environmental Sounds with a focus on Vents

Soundscape Project - SS22

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Conversational machines

-“Cistern of bees, it stokes its honeys in gnawed vertebrae there, ovulates an ossuary of feathered serpents.

Oh insinuating red moon, moon of syllables and moons
tying the scattered with my hands”-.

- *Chronicles of the pyramid of fire*, Náhuatl poem, no author -

From an animistic perspective, the physicalities of the places that we inhabit behaves and changes also with a will of its own; eventually **stimulated by human agency but reacting through its own inner substance**. Concrete caves that gives shelter and resonates with constant changes of temperature. **Structure borne sound that was used in former times by some cultures as emissaries that propagates different tunes of messages**. The hostiles, the cheerful ones... unceasingly looping, engaging any receptor nearby and finally fading away on the horizon.

The **hearing apparatus perpetually unsealed is involuntarily capturing sound waves that behaves as party crashers**. Meaningful, pleasant, nightmarish, rachitic, depends on the “hearing glass”... What is noise for some, could be for others an unleashed symphony of accidental sonorous pleasures...

Shäfer's Taxonomy // Plus Design

Hi-fi / Lo-fi:

The hi-fi soundscape is one in which discrete sounds can be heard clearly because of the low ambient noise level. The country is generally more hi-fi than the city; night more than day; ancient times more than modern. In the hi-fi soundscape, sounds overlap less frequently; there is perspective – foreground and background

Soundscape Design:

Plus Design:

introduce neutral and nature-related sounds to mask undesirable sounds, Intervention

Categories	Examples
Natural sounds	Bird, thunder, rain, wind
Human sounds	Laugh, whisper, shouts
Sounds and society	Party, concert, store
Mechanical sounds	Engine, factory
Quiet and silence	Quiet park, silent forest
Sounds as indicators	Clock, church bells

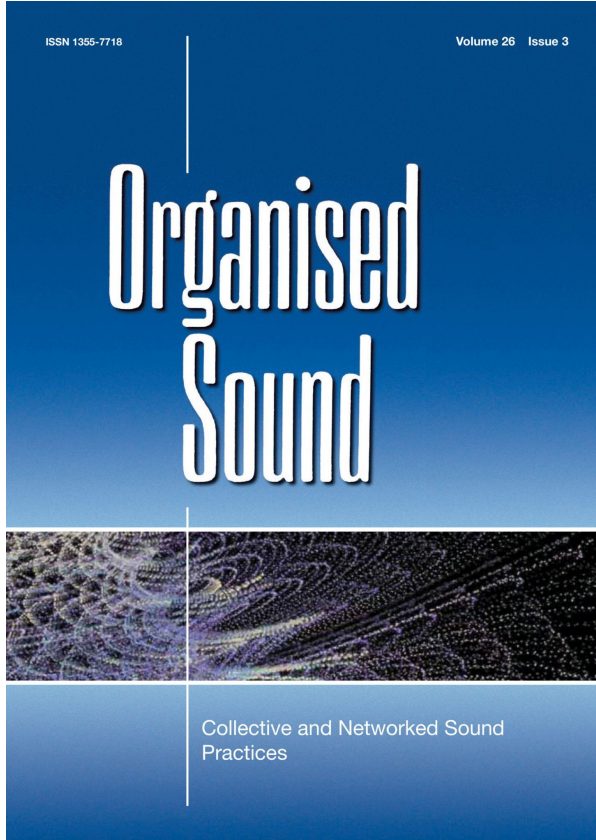
Soundscape Intervention

The term “**soundscape**”, as it has been established in the area of acoustic ecology, characterizes “**acoustic environment** as perceived or experienced and/or *understood* by a person or people, in context”.¹

A **soundscape intervention** is a site-specific design to preserve or improve a soundscape. There is a broad variety of interventions conceivable to design soundscapes, ranging from micro-scale actions in specific locations like a park, to interventions on a large-scale, referring to a whole city quarter. Soundscape interventions are related among other things to a **reduction of unwanted noise**, to the **introduction of pleasant sounds for masking purposes** or to the **preservation of soundmarks** that embody a local identity.

What makes a soundscape intervention unique from a noise control measure is that it goes beyond reducing noise levels, to instead promoting or improving the quality of a soundscape as a whole. At the end, a **combination of different types of soundscape interventions are frequently applied to achieve a significant impact on residents and soundscape visitors.**

Site-Sounds: On strategies of sound art in public space by Georg Klein



Through sound installation art, space becomes a concrete manner, is **explored**, or is **performed in** or even more “acquire its own specificity, called **site-sound (Ortsklang)**” (Klein 2009: 101)

“Acoustic art in public spaces basically involves **installing a space in another existing space**, both physically and sensorially, and metaphysically and mentally – an interior space in an exterior space, so to speak. The original quality of sound art lies in the oscillation of interior and exterior space. Thus public spaces intensified by sound art cause transitional spaces to come into being, in a political and a psychoanalytic sense.” (ibid.)

The installation site can be the point of departure for the artistic concept and becomes part of the artistic statement.

Prior to installation: analysis of the site. “How does the site present itself acoustically, visually and architectonically? What materials and objects dominate the site? What role does the site play in social life?” (ibid.)

“The factor of **confusion is the most important element** – to **interrupt** the everyday routine for a moment, to **make people pause** and assume a different perceptual attitude is the basis of every acoustic intervention.” (ibid.: 104f.)

How does the campus sound ?

What effect does it have upon us ?



Soundwalks:

- Noise pollution : “white” noises (vents, streets etc.)
- Visual pollution (vents)

- 🔊 Mensa
- 🔊 Elektrotechnik Gebäude
- 🔊 Essbarer Campus
- 🔊 Hauptgebäude

Placemaking is a multi-faceted approach to the **planning, design and management of public spaces.**

With community-based participation at its center, an effective placemaking process capitalizes on a local community's assets, inspiration, and potential, and it results in the **creation of quality public spaces that contribute to people's health, happiness, and well being.**

Grünfläche vor dem Hauptgebäude

In der Ferne konstantes
Rauschen (von der Straße?)

Durchgängiger Ton, Hintergrundgeräusch

Direkt über mir ein sehr
prägnanter Vogel, glaube Krähe

draußen

Sonne

Vögel zwitschern

Sommer

Die Blätter rauschen im Wind

Sehr stille Atmosphäre

Parkgefühl

Fühlt sich eher wie ein Park
als ein Campus an

Alles wirkt etwas gedämpft

entspannt

entspannte Gespräche

Abiturienten machen eine Stadtrallye und laufen 4
mal Gesprächig an mir vorbei: suchen das Rätsel

Ab und zu laufen Menschen vorbei

Ein Hund bellt kurz

Ein Laster fährt langsam vorbei

Ein Fahrradschloß klappert
im Fahrradkorb

Sand knistert unter den
Schuhen

Unterschiedliche Sprachen
werden gesprochen

Schritte

sehr wenige Menschen

2 Fahrräder fahren vorbei

Legende:

Grün: Emotionen

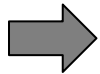
Blau: Assoziationen

Orange: Bedingungen für das auditive Erleben

Schwarz: Klangereignisse

Auditory Mapping on TU Campus

- mix of natural sounds, human sounds and mechanical sounds are dominating
- surprisingly human sounds were not as present as natural sounds (maybe because the mapping was done during lesson time, therefore not so many people present)
- the atmosphere was pleasant
- a lot of singing birds
- **But**: the other dominating and constant sound was a sort of white noise/noise pollution in the background (possibly car/street noise)



The mapping reveals the juxtaposition of natural sounds and mechanical sounds/noise pollution

Our intervention - a new context

One of the noises we perceive most often on campus is the sound of ventilation systems. In order to reduce this sometimes disturbing factor, the noise should be masked and a new (e.g. pleasant or irritating) sound or context introduced.

We experiment with different sounds that we create with self-made kind of instruments and the air flow of the ventilators. We also try out visual changes.



Inspiration sources - Visual Aspect

Street Art in Paris:

Polar Bears were installed upon the ventilation grids of the parisian metro to sensibilize to climate change

Interpretation:

Intervening on the visual aspects of the environment may influence the willing and feeling of the people to spend time in the space, but can also awake an interest for a cause (for ex.: global warming)



Inspiration Sources - Acoustical Aspect

Place: Sea-Organ in Zarda, Croatia

Medium: Water, Air

This Sea-Organ is a **mechanical installation** with musical features at the seaside promenade of Zarda. The sea waves drive air into a system of pipes, the functioning principle is similar to a mouth harp. It is tuned to produce a never-ending exchange of C major and G major chords.

Since the installation of the Sea-Organ into the Seaside Promenade (2005), the number of visitors has increased, a less “anti-social” behaviour has also been observed.



Acoustical Aspects - Windharp

The proper name for a wind harp is an **Aeolian harp**, named for Aeolus, the Greek god of wind. The Windharp is played by the wind, it is composed of a rectangular resonating box and several strings of equal length, **tuned to the same fundamental note**. Since the strings have all **different diameters** that is why, the wind causes different strings to sound as its speed varies. The **fluctuating wind speed** then produces a variety of **harmonics**.



Acoustical Aspect - Windharp

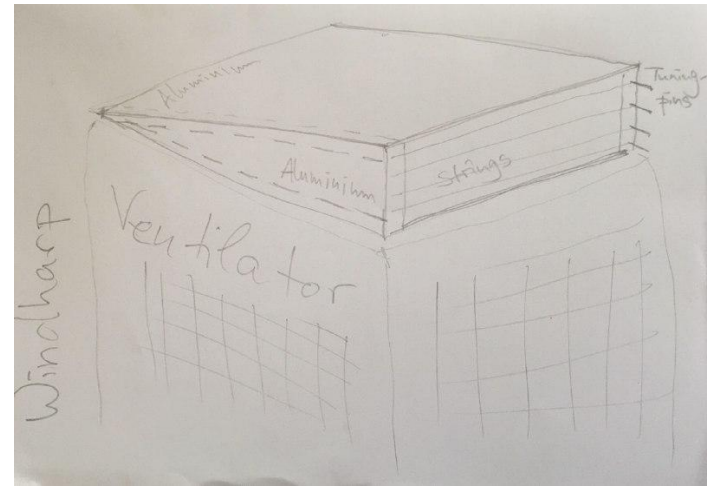
Location: at Hauptgebäude (Ernst Reuter Platz)

Concept:

Redirecting the air flow coming out of the ventilations, to create new sounds in order to “resignify” the soundscape of the campus, using mechanical means.

Idea/Expectation:

- Positioning a removable Windharp on the top of the ventilation (see drawing) to produce dynamic relaxing sounds using the existing structure and characteristics.
- Overlapping sounds of different natures to mask the original ventilating noise.



Acoustical Aspect - Dragon flute “Cai Sao”

At the “Red River”, in the north of **Vietnam** is every Year a Kite Festival for the traditional Feast “**Âm Lich**”.

A **Festival of Kites** mounted of a fluting structures cross the sky emitting relaxing whistling sounds. A recording is to be found in the following link:

<https://www.windmusik.com/sounds/caiorig1.mp3>



"Cai-Sao" (Vogelgesang) Drachen-Flöte aus Vietnam
jede Röhre besteht aus zwei getrennten Flöten,
die zum Haltestab hin mit je einem Boden verschlossen sind.



Acoustical Aspect - Dragon flute

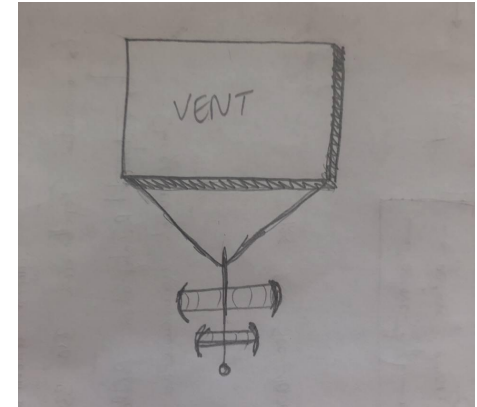
Location: at Hauptgebäude (Ernst Reuter Platz)

Concept:

Using the air flow coming out of the ventilation, to create new sounds in order to “resignify” the soundscape of the campus, using mechanical means.

Idea/Expectation:

- Hanging a removable Dragon flute with nylon strings to the ventilation (see drawing) to produce dynamic relaxing sounds using the existing structure and characteristics.
- Overlapping sounds of different natures to mask the original ventilating noise.

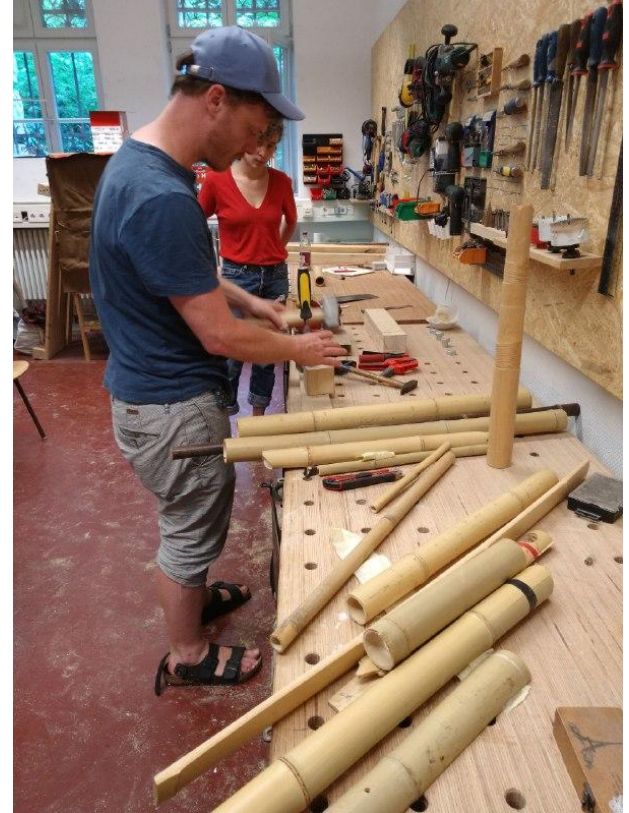


What happens next - Prototyping

Where ?

at the **TU-DO**

Workshop Space of the
TU-Campus



Take me to the beach

Location: Massive ventilator at Essbarer Campus (TU's back side)

Concept:

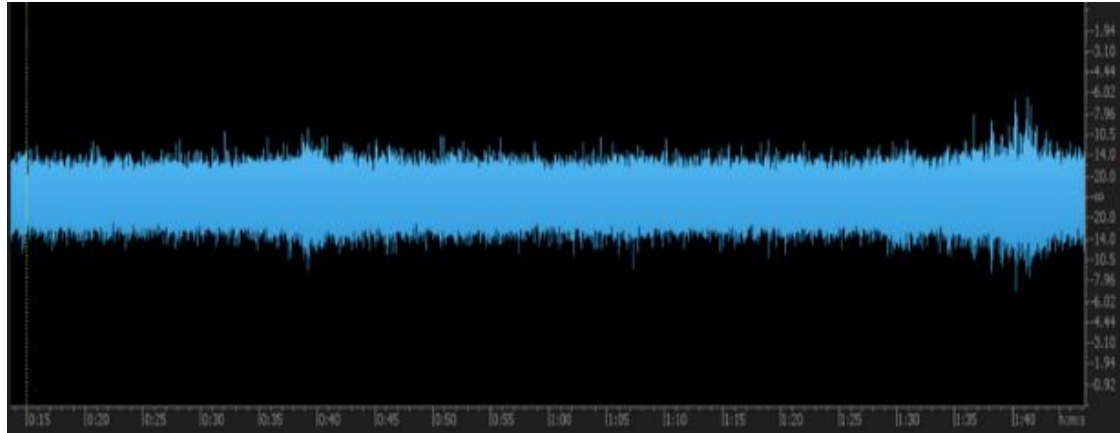
A simplistic installation that juxtapose audio spectrum vs visual stimuli confronting traditional social perspectives towards what we categorize as “unpleasant” sounds.

Idea/Expectation:

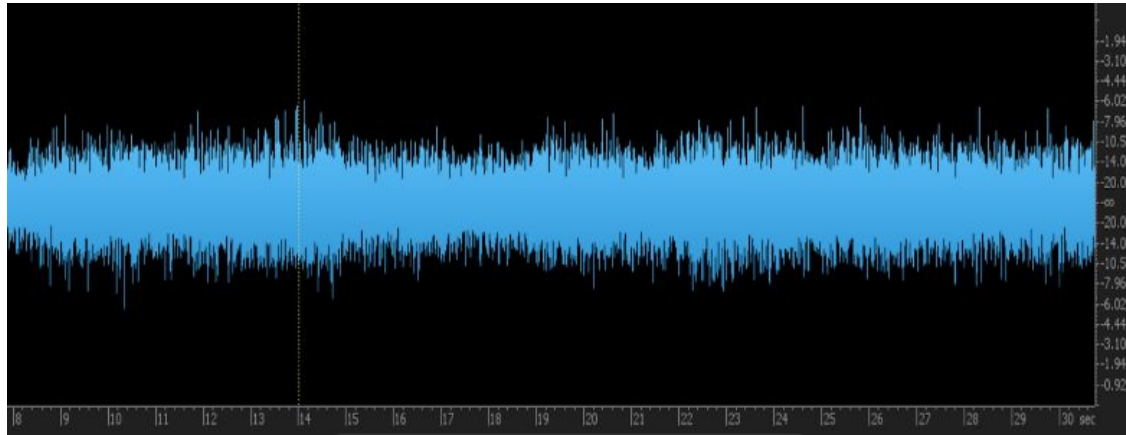
- Challenge the concept of “noises” as obnoxious sonorous elements within the anthropocentric environment.
- “The beach” is a robust fan that emits a stream of sound patterns similar to the aural spectrum of coastal areas. A cream of sine waves that overlays to create a sort of mechanical white noise that simulates the effect of the ocean crests breaking on water bodie's realm.

Ventilator vs Beach - sine waves

Ventilator

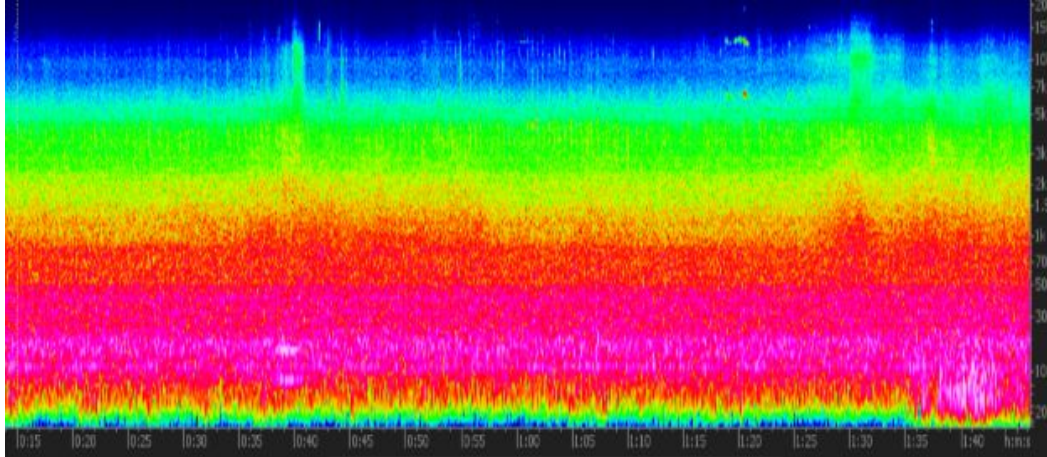


Beach

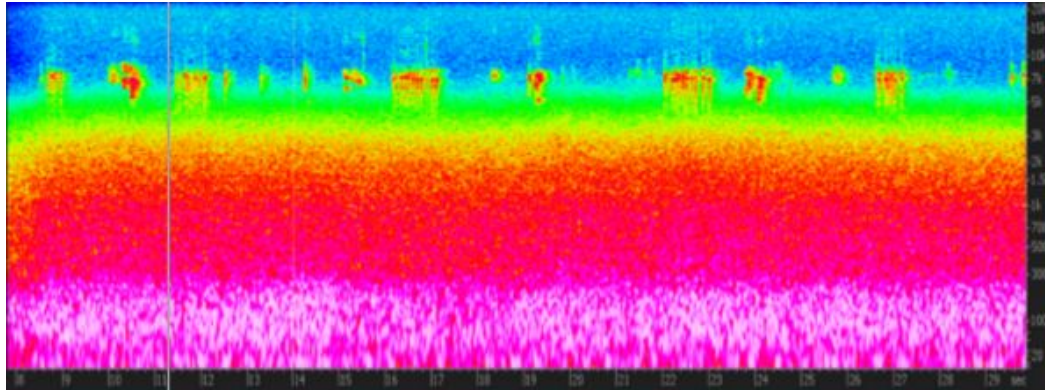


Ventilator vs Beach spectrogram

Ventilator



Beach



Soundbusting / Guerilla Intervention

Reversible or irreversible **installation of soundobjects** to:

- Call attention to noise pollution
- Mask uncomfortable sounds
- Reframing critical noise sources

References

Adbusting, street art, fluxus movement,,



Critic on sound installations

- What we want is a better sonic environment. Adding sounds in a noisy environment might worsen the situation..
- Although, the spot we chose is not a central spot for relaxation on campus. Therefore, the purpose of the installations may be reached in the informational way: Make aware of the issue that represent vents on campus.