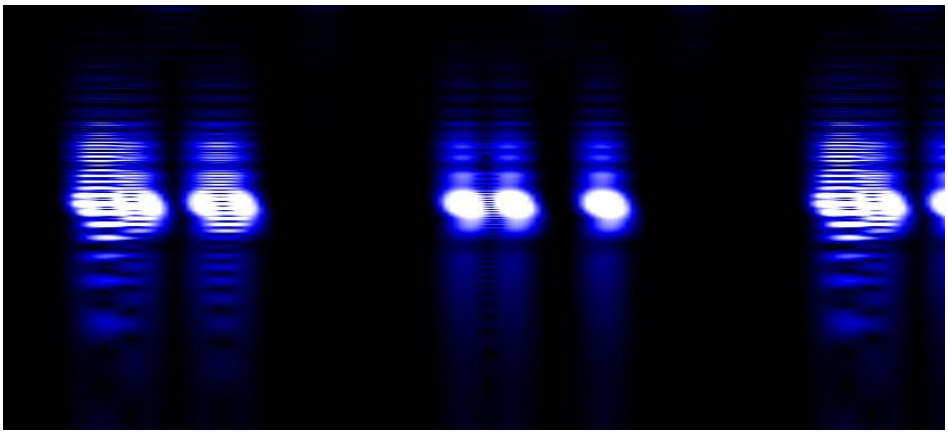
TOWARDS A DECENTERING OF THE LISTENER IN PLANNING AND DESIGN RESEARCH

ATTUNING TO AFFECTIVE SONIC MATERIALITY FOR TRANSITORY RAILWAY SPACE ALONG BRUSSELS LINE L28

Caroline CLAUS



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Prof. Dr. Burak Pak

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Abstract PhD:

English: Within a context of militarized urban transformation seeking sonic strategies for dealing with alienation, repression and immobility, the importance of understanding and operationalizing sound's affective and disruptive capacities, is quintessential. A situated engagement with affective sonic materiality in urban planning and design research promotes a rethinking of the position and role of sound in urban development and simultaneously becomes an instrument of sonic artistic and critical spatial practice. Through exploratory longitudinal case study focusing on old industrial railway space conversion into greenspace along Brussels line L28, I studied how a decentering of human listening and sonic experience necessitates the planning and design of new sonic (infra-)structures in ways that breaks those confines whilst facilitating the (co-)production of alternative sonic futures emancipated from certain impasses. By connecting the avant-garde work of urban sound researchers and curators to the experiences and practices of young people involved in urban transformation, I aim to set out a path to a sonic vocabulary, methods, tools, and techniques for a relational, performative engagement with sonic matter in planning and design research.

Nederlands: In een context van gemilitariseerde stedelijke transformatie op zoek gaan naar sonische strategieën om met vervreemding, onderdrukking en immobiliteit om te gaan, kunnen we het belang van de affectieve en verstorende capaciteiten van geluid niet onderschatten. Een gesitueerd engagement met affectieve sonische materialiteit in stedelijke planning en ontwerponderzoek, bevordert een heroverweging van de positie en rol van geluid in stedelijke ontwikkeling en wordt tegelijkertijd een instrument van sonisch artistieke en kritische ruimtelijke praktijk. Door middel van een exploratieve longitudinale casestudy naar de reconversie van oude industriële spoorwegruimte tot groene ruimte langs de Brusselse lijn L28, onderzocht ik hoe een decentering van menselijk luisteren en beleving, de planning en het ontwerp van nieuwe sonische (infra-)structuren noodzakelijk maakt op een manier die deze beperkingen doorbreekt en tegelijkertijd de (co-)productie van alternatieve sonische toekomsten die geëmancipeerd worden van bepaalde impasses, mogelijk maakt. Door de avant-gardistische output van stedelijke geluidsonderzoekers en curatoren te verbinden met de perspectieven en praktijken van jongeren die betrokken zijn bij stedelijke transformatie, tracht ik bij te dragen tot een sonische woordenschat, methodes, instrumenten en technieken voor een relationeel, performatief engagement met sonisch materie in planning en ontwerponderzoek.

This PhD research was carried out in the Altering Practices (Alt_Shift) Research Group at KU Leuven Faculty of Architecture Campus Sint-Lucas Brussels and was funded by KU Leuven Funds.

ACKNOWLEDGEMENTS

While working on this manuscript in October last year, I could hear a machine gun sounding from a balcony of an apartment just down the street from our house in Brussels North. The incident took place during the shooting of a music video for a new drill track of a popular local musician. Two weeks ago, a 20-year-old man was killed in a shooting near Beekkant Square in Molenbeek-Saint-Jean. A week ago, a few days before I finalized this document, I could hear gunshots being fired around the corner from our house.

There are many people to thank, all of whom have contributed in one way or another to the making of this research project.

Supervisor Burak Pak, Professor of Architectural Collaborative Design, Collective Spaces and Digital Media at KU Leuven Faculty of Architecture and co-founder of the Altering Practices (Alt_Shift*) Research Group: thank you for taking me under your urban design wing and guiding me through the process of participating in the design studio and completing the PhD research project. Your feedback and our collaboration for the design studio, motivated, already early in the process, exploratory research on urban design as a critical research method. Good luck to you and the research group.

Co-supervisor Peter Cusack, field recordist, musician, and researcher: thank you for sharing your interest in old industrial urban sound environments, as well as your knowledge and expertise in critical sonic practice. I learned a lot from our long conversations and spontaneous discussions on field recording. Looking forward to your future sonic-spatial explorations and collective listening practices.

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For seeing the research project before it was a PhD: the curators of early artistic research projects, fellow researchers, urban designers, and sound artists.

All sorts of people at the KU Leuven Faculty of Architecture: the 5th floor researchers, Alt_Shift*, Masterstudents, the Faculty Administration, …

Brussels: Sophie, BNA-BBOT, Lionel, Jérémy, Abdel Aziz & the Molenbeek Youth Council, Simon, TMBR, Kobe, JES, Omar, Béatrice & Jardin Collectif de Tour & Taxis, Stijn, Stijn & Aifoon, Permanent, Hector, Ginette, De Week van de Klank/La Semaine du Son, Jorg, Wouter, Philippe, Ruth, Charles, Hans, Yau & the Open Lab for Bio-Acoustics Brussels, …

Caroline Claus,
Brussels, May 2022

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1 PART I | INTRODUCTION

1.1 Urban Context

The open space along the Western ring railway L28 has long been marginalized in Brussels planning processes (Agora & Leefmilieu, 2014). The development of public space on former railway land is relatively recent here. Because of its natural, historical, and ecological richness and the recent plans for development and transition, the railway area of the L28 line can be considered as an excellent object for research into sound and green space development. The sites in question are the transformative open railway spaces situated along line L28 between Midi Station and Schaarbeek-Vorming, Brussels. To date, Brussels urbanism is only narrowly concerned about the quality of the sound environment of these old industrial spaces in transformation. Sonic approaches to greenspace development along the L28 primarily consist of controlling negative health effects and expanding acoustic comfort zones (Ateliers Lion et al., 2007; Bijzonder Bestemmingsplan Tour & Taxis, 2017; Leefmilieu Brussel, 2018), (Quiet.Brussels, 2019; TAKTYK et al., 2019). Conflicts over social noise nuisance are dealt with preventively and repressively in the short term, at street level (Roelant, 2017; VT, 2018).

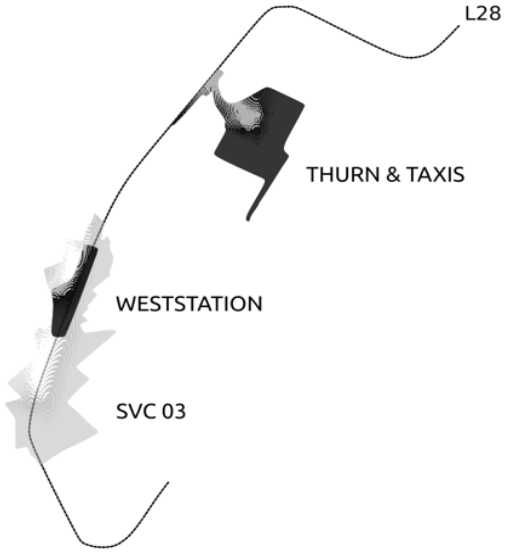


Figure 1. L28 Railway Space

Friday November 13th, 2015, Brussels and the western part of the canal zone and different locations along the line L28 such as Beekkant, Osseghem and Bockstael square, became the site for what Blackmore (2005) and Sassen (2010) define as 'asymmetric war'. Four months following the Paris attacks, which were planned in Syria and organized by a Brussels-based terrorist cell and claimed by the Islamic State of Iraq and the Levant (ISIL), the Capital of Europe itself became a key target space of terrorism (Lasoen, 2019; 2020). In response to the Paris attacks which were interpreted by the French Government as an 'act of war' (Faucher & Boussaguet, 2018), the Belgian Government, by agreement with regional and local authorities, organized and controlled the increase of police and military presence in the public space of big Belgian cities. This militarized response was followed by the implementation of a Federal Canal Plan for Brussels, an initiative of Jan Jambon(N-VA), at the time Belgian Minister of Home Affairs (Lasoen, 2020).

In what follows, I will argue that as we engage in planning and design research on possible sonic spatial strategies for the redevelopment of a railway space that became the scene of contemporary urban violence, we cannot underestimate the importance of the affective and disruptive capacities of sound. The violence of the Paris and Brussels attacks and its military response involved explosions of machine sounds and the enactment of silence in zones controlled by soldiers. Around the same time, within the context of parallel planning processes defining public space development along Brussels' railway line L28, urban sound was dominantly discussed with a restrictive connotation: from the perspective of the project developers and authorities the sonic focus is on health and the quietness of green space: a cutting out of sounds (Ateliers Lion et al., 2007; Bijzonder Bestemmingsplan Tour & Taxis, 2017; Leefmilieu Brussel, 2018; Quiet.Brussels, 2019; TAKTYK et al., 2019). Conflicts over social noise nuisance are dealt with preventively and repressively in the short term, on street level (Roelant, 2017; VT, 2018). However, explorative research on these conflicts from the perspectives of young people and socio-cultural professionals, exposed some alternative, more creative sonic spatial approaches to old industrial transformation.

1.2 Research Proposal: state of the arts, research objectives, questions, and methodology

Although sound is a central feature of urban life, anno 2017, it still receives narrow attention in the planning and design of urban space. I argue that one of the challenges here is that the current planning and governance practices focus on quantitative approaches and urban sound quality remains largely undefined: decibels say little about the position and role of sound in urban space's capacity to create new subjects and forms of belonging.

Urban studies increasingly recognize sound as a medium for community building and political action (Farinati & Firth, 2017; MIT Colab, 2017). Recent research in sound studies focuses on how collective listening practices help to develop a critical ear for urban space, thus contributing to productive reflection on future spatial plans (Flügge, 2017). Accounts of the sonic in terms of conscious hearing or listening are troubled by Goodman (2009) in favor of an unconscious, affective account of sound as material impact. In much of his theoretical work on sonic warfare, Goodman reflects upon a 'politics of frequencies' by describing experimental practices that intensify vibrations and thereby unfold the body on a discontinuum of vibrations traversing the built environment, sound technologies, oscillators, human and non-human bodies, and different media of the earth. The 'vibrational nexus' Goodman defines as each actual occasion of experience that populates this discontinuum, draining a sequence of elements into its collective shiver. Via this conception of a differential ecology of vibrational effect he outlines a non-anthropocentric ontology of ubiquitous media, a topology in which every vibrating surface is a potential host for viral conceptions, perceptions and affects.

The search for alternative sonic-spatial approaches, draws inspiration from the work of artists and musicians making new aesthetic experiences and new ways

(physical) mobilization developments possible. Avant-garde artists such as Mark Bain (Bosma, 1999; Pascual, 2017) and Ganchrow (2009) explore in their work the possibilities of vibration and sound in urban space. Their work can be situated at an intersection of acoustics (landscape) architecture, urban planning, and actions for conceptual and experiential integration. Much of their work consists of research into the way vibrational and sonic events affect buildings, urban space and the bodies they occupy. Sculptural aspects of sound and vibration are investigated on how resonant materials, structures can define and thus manifest urban public space. In *Sonic rupture: a practice-led approach to urban soundscape design,* Jordan Lacey (2016) introduces new ways of artistic practice and reflects on their potential to create new and deeper urban experiences by interacting with noise.

The conception of urban space as a constructible atmosphere of sonic and vibrational possibilities encouraged a (re-)vision of the role and position of sound and vibration in old railway space conversion to green park/places along the line L28, Brussels. Through practice development, building on the work of avant- garde artists, urban (sound) researchers and designers, this Ph.D. Research Project aims at the definition of a planning and design perspective on urban sound and vibrations of transformative railway space.

STATE OF THE ART

The Urban Sonic Environment as Planning and Design Challenge:

Development processes directly influence the sonic environment of urban areas in transformation, often in negative ways that eliminate or diminish unique sounds, causing loss of social identity and cultural diversity. While building regulations modelled on noise contours are a necessary measure to limit exposure to noise, they are in no way adequate to guide urban development. Specific factors relevant

to the distinct parts of the sonic environment make different approaches necessary and intelligent design interventions can invert negative constraints to creative qualitative environments. The Ph.D. Research Project will explore and define alternative approaches and conceptualizations as inevitable frameworks for design.

Non-Anthropocentric Perspective on Urban Sonic Environments:

This research involves a critical reflection on the shift in thinking about the role and position of sound in the design and development of urban public space in Brussels. Through an exploration of an intermodal and ecological perspective, starting from the concept of 'Vibrational Nexus', I will problematize anthropocentric and phenomenological concepts such as 'Soundscape' (Schafer, 1977) and 'Sonic Effect' (Augoyard, J. F., McCartney, A., Torgue, H., & Paquette, D., 2006). Through fieldwork in a series of specific locations, public spaces, social territories along the railway track, I set out for a planning and design research on urban complexity and interactivity.

Constructive Approach to Social Noise Problems:

In the context of public space development of the L28 area, urban sound is dominantly discussed with a negative connotation. From the perspective of the project developers and authorities the health and peace of the future public space should be guaranteed. However, an exploration of these phenomena from the perspective of youth and social professionals involved, provides us with an alternative more creative and constructive perspective. From an interest in the capabilities of sonic conflict in transformative space, I seek to contribute to the development of a planning and design practice able to approach sonic encounters in terms of quality.

OBJECTIVES

Transdisciplinary Framework:

This study aims at the construction of a conceptual framework and methodology enabling the study of human and non-human relations interacting across time and space, co-constituting the sonic environment and sonic experiences of a transformative railway space. From a questioning of the position and role of sound in on-going planning processes, I will constitute a working practice exploiting and nurturing productive encounters between different disciplines.

Definition of Planning and Design Strategies, Tactics and Tools:

The second objective of the research is the development of a 'method as analytical tool that can be used in planning and design practice.' Through practice development, I will question the capacity of strategies, tactics, and tools in considering a decentering of the listener in old industrial railway space conversion to green space.

Collaborative and Network Practice:

Through collaborative and network practice, I will research the potential of methods and tools for community engagement, social innovation, and the co-production of new sonic infrastructure in a context of urban planning and design processes. Collective design exercises embedded in education will be used to explore the potential of a sonic materialism in urban design and planning research.

Synthesis and Communication:

A final goal of the Ph.D. project is to move the discussion on sound and vibration in urban space beyond the fields of experts to a broader popular audience. The activities, paper presentations, and research related artistic output will be documented on a website and finalized in a book publication.

RESEARCH QUESTIONS

Understanding urban sound and vibrations as informational affect, the Ph.D. research project develops a non-anthropocentric planning and design perspective on auditory and vibrational interactions of the transforming L28- railway area. Building on the work of avant-garde artists, urban (sound) researchers and designers, the research questions to be explored are:

1. What is the position and role of sound and vibration in the redevelopment of old industrial railway space which also is the scene of urban conflict and performance?

2. How can we extend planning and design research's focus on hearing or focused listening to a non-anthropocentric conception of sound as vibrational affect?

    2.1. What new ways of mapping and understanding urban space become possible?
    2.2. How does this shift in thinking lead to new planning and design perspectives on urban transition?

METHODOLOGY

To explore these questions, I conducted a mixed method research combining theoretical study with practitioner-led research.

In the first stage of the PhD (2018-2020) action research was realized through field work, and participation network and educational practice. Design scenarios, methods and tools have been developed and tested in a collaborative manner together with inhabitants, social professionals, artists, researchers, and students. Following the decision by Professor Burak Pak to organize educational practice in the early phase of the PhD project, I have opted for an abductive approach focusing on theoretical study and field research in the final phase. Exploring the potential of 'sonic journalism', a practice developed by Peter Cusack, findings and observations from fieldwork, collaborative and network practice are situated relative to the following interactive tracks:

> **Track 1. An Ecological Approach:** An exploration of the conception of a vibrational nexus formed the starting point for a critical reflection on the position and role of sound in public railway space development. This motivated the search for the definition of a non-anthropocentric ecological approach. Theoretical study has been combined with a grounding in a specific reality of the case: old railway conversion to green space along Brussels line L28. The term "ecological" in this context is used to refer to the interrelationships between living, non-living things, and their environment.
>
> **Track 2. Critical Cartography:** For a better sonic understanding of urban space in transformation, the sonic urbanists produce sound maps. As soon as elements on a map exist, they have value and generate new meaning by

their name. Mapping a sound environment requires an understanding of the conditions that lead to certain sounds and vibrations and their possible effects and affects. Throughout the process of mapping the Brussels L28 railway area in transition, I explored possible skills an planning and design researcher concentrating on urban sound might need by testing the following figurations: the artist- cartographer - to introduce the critical potential of artistic cartography, the socio- spatial planner to examine the social and cultural characteristics of an urban sound environment; a field recorder- sound artist to collect and capture sounds and vibrations, the architect- designer to demonstrate sonic vibrations.

Track 3. Planning and Design Perspectives: Through participation in educational practice, urban sound planning and design has been explored as a method of composition, an activity of construction and performance. The planning and design of urban sonic space was associated with having an interest in forming, intervening, or interrupting an urban sound environment and sonic experience. This approach proceeds from situating sonic experience in a vibrating material environment.

Track 4. Site Sounds: In order to elicit audience engagement and contemplation on a subject it is sometimes helpful for making a performance to provoke. The search for alternative strategies for critical engagement and spatial design was supported and inspired by the work of sonic artists and musicians making new aesthetic experiences and new ways of (physical) mobilization possible. The idea is that experiments in urban electronic music and sound art can in various ways (re-) negotiate and articulate planning and design strategies.

1.3 Structure of the Manuscript

The objective of this research project is threefold: first, a better understanding the position and role of urban sound and vibrations in a context of old industrial railway space conversion to green space and contemporary urban violence, secondly the constitution or definition of a practice and system for analyzing, critiquing, re-thinking, and co-constituting contemporary planning and design approaches and finally, a question for a re-negotiation or re-politicization of socio-environmental relations in a context of transitory planning.

PART II describes the search for a critical positioning towards dominant sonic – spatial conceptualizations informing both planning policies and popular music defining transformative railway space. Aligned with the practice-led research questioning a re-definition of the position and role of sound in planning and design practice, I define a theoretical framework based on the combination of lines of thinking coming from three different disciplines. Navigating different disciplines, I argue for a deviant engagement with urban sound and hereby an opening up planning and design research to the not always audible, urban ecology of sonic experience. From here, I define a conceptual framework for research on the manifestation of contemporary urban violence and processes of acoustic territoriality in a context of urban railway conversion to green space.

In PART III, I explore the implementation of a sonic materialism in planning and design research focusing on the specific case of Brussels L28 railway space conversion to green space. Through case study, I question relations between mediations of sonic experience, appropriation, and accessibility in the transformative urban railway spaces. Repeated study of railway sites situated along L28 comprises collections of material assembled by use of an interdisciplinary combination of methods: field recording, semi-structured interviews, literature on

planning context, mapping, and assistance in design education. Constituting a practice of sonic cartography, I study the presence of affective forces in the urban sound spaces of transformative urban space. In what follows, I will describe the production of a working practice exploiting and nurturing creative, critical encounters between different disciplines.

By demonstrating how I arrived at insights on the mediation of sonic experience by nuisance control in planning and design projects, contemporary urban violence and surveillance, and performative practices in relation to accessibility of transformative space, I will argue for the implementation of a sonic materialism in planning and design research.

In PART IV, I go back to the initial research questions, explaining how the research enabled a critical rethinking of the role and position in urban sound and vibrations in old industrial railway space conversion to green space, and from there, how it exposes lines of flights or possibilities for a re-negotiation or re-politicization of urban socio-ecological relations involved in urban sonic experience.

2 PART II | LITERATURE STUDY

PART II describes my search for a critical positioning in relation to the dominant sonic-spatial planning approaches. In response to the first research question, I have studied different ways of addressing the position and role of sound and vibration in the redevelopment of old industrial railway space that has become the scene of contemporary urban violence. Focusing on different conceptual tools that have been developed from different disciplinary positions, in what follows I describe the construction of a theoretical framework in three steps: First, I look at urban studies and cultural philosophy for a better understanding of contemporary urban violence in urban public spaces, opening up to affect and nano-scale; Second, I move to sound studies where I zoom in on the 'turn to matter' and its critiques; Finally, following a reflection on assemblage theory in relation to Actor-Network Theory (ANT) and the conception of machinic assemblages, I explore the potential of a re-thinking of sound as vibrational affect and mediated sonic experience for the study of urban and/or militarized space by discussing several projects using an ecological analytical framework for research on sound and vibration in relation to urban space.

I conclude PART II with a proposal for a relational, performative sonic approach. Linking conceptions of contemporary urban violence and urban sound as vibrational affect with ecological approaches to urban sound and vibration in planning and design research, I argue for a decentering of the human listener in planning and design research via a proposal for a situated sonic material engagement in planning and design practices. Criticizing dominant approaches structured around decibel measurements and anthropocentric conceptions of soundscape and sonic experience, the research attempts to engage in contemporary discourses by arguing for a deviant sonic planning approach open to criticism and a broadening of the space of urban sonic capabilities.

2.1 Sonic Experience of Transformative Railway Space as Debordered Exposure

The experience of conflict through the sound and vibrations coming from helicopters flying over the city, intensifying sirens, the panicked voice of the subway conductor, as well as the experience of silence in a project area prior to the first attacks and arrests that followed the day after, motivated a rethinking of the position and role of urban sound and vibrations in planning and design processes. In what follows, I will argue that planning and design research cannot simply consider urban sound and vibrations as 'nuisance'.

Building on Patricia Reeds's (2021) critique on 'unlearning' in *The Toxicity of Continuity* and Steve Goodman's (2009) theoretical work on Sonic Warfare, I will argue for a departure from the aesthetic soundscape approach and the phenomenology of sonic experience in planning and design research. Reed argues for an extension of Mbembe's work on 'debordering' into the conceptual domain and points out the importance of exposure to the unknown or unfamiliar, 'conceptual contamination' and permeability. Criticizing recent calls for 'unlearning', she suggests considering learning as part of a conceptual dehabituation, as brainwork made possible by 'debordered exposure'. From the idea of tackling a spatial planner and designer's confrontation with sonic experience of contemporary urban violence as 'debordered exposure', building on Goodman's conception of 'unsound', I seek to demonstrate the necessity of a conceptual framework capable of addressing the affective and disruptive capacities of sound in planning and design research.

The concept of 'soundscape' (Schafer, 1977) and the paradigmatic notion of 'sonic effect' (Augoyard, J. F., McCartney, A., Torgue, H., & Paquette, D., 2006), are well-known tools used for qualitative research on sound environments. Another concept

relating space to sound is 'aural architecture' (Blesser and Salter, 2009). In exploring the potential of these conceptual tools for planning and design research on old industrial railway space conversion to transitory green space along the Brussels L28, we experienced a kind of incapacity in dealing with the urban environmental concerns of the transformative railway sites in question (Claus, 2017; 2018). In what follows, I will argue that these concepts offer limited space for planning and design research on disruptive, affective encounters in transformative infrastructure spaces.

2.1.1 Towards a Decentering of the Human Listener in Planning and Design Research

The acoustic ecology developed by R. Murray Schafer and his team at the Simon Fraser University is the most widespread and well-known qualitative sonic approach. Schafer's pioneering work in soundscape studies came with a warning for industrial, mechanical sounds: technological 'noise' (Schafer, 1977). Over the past fifty years, the field of soundscape studies has evolved in different directions and disciplines with different definitions and aims as a result. The International Organization for Standardization defines the soundscape as "a perceptual construct, related to a physical phenomenon" (ISO, 2014). The standard differentiates between the perceptual construct (soundscape) and the physical phenomenon (acoustic environment) and specifies that a soundscape occurs through a human perception of the acoustic environment. Soundscapes studies have been criticized for objectifying sound rather taking it experiential (Ingold, 2007), (Helmreich, 2010). According to Ingold, the environment that people experience is not divided along lines of sensory pathways by which they enter it. For him, a landscape is not restricted to a specific register and sound he understands as a medium rather than the object of perception.

In the early to mid 1990s, the French CRESSON research group, developed the phenomenological concept of 'sonic effect'. It was their response to soundscape studies and what they problematized as a lack of tools for interdisciplinary research, applicable at a smaller scale of urban situations, and capable of integrating domains beyond aesthetic design. Introducing the notion of 'sonic effect', researchers Jean-François Augoyard, Henry Torgue and colleagues searched to address everyday human audition in relation to architectural and urban space, and thus breaks with the tradition of soundscape studies to concentrate on a perceptual aesthetic unit in a sound environment. They associate the concept of 'sonic effect' with "this interaction between the physical sound environment, the sound milieu of a socio-cultural community, and the 'internal soundscape' of every individual" (2006, p. 9). Conceived as an interdisciplinary project they positioned the concept in three fields: social sciences, urban studies, and applied acoustics. The conceptualization of 'sonic effect' inspired a methodology for research on the nature and status of sonic phenomena and the modal or instrumental dimensions of urban architectural configurations. The concept enabled a re-interpretation of the idea of the 'sonic city' possessing merely 'passive acoustic properties' by replacing it with a 'sonic instrumentarium of urban environments.' Augoyard and colleagues argue that: "as soon as a sound physically exists, it sets into vibration a defined space" (2006, p. 11). *Sonic Experience: A Guide to Everyday Sounds* can be interpreted as a catalogue of sonic effects, connecting urban sound to architectural space, everyday culture and its consequences for the psychology and physiology of human perception. From a more practical perspective, this work introduced a list of criteria for monitoring and analyzing acoustic and aural conditions of urban architectural environments.

In response to the soundscape approach developed by Schafer and his associated research team, Blesser and Salter (2009) argued to address the exposure of listeners to architectural spaces, rather than focusing on a description of a

collection of sounds that produces space. In *Spaces Speak, Are You Listening?* they introduced the concept of 'aural architecture' for describing qualities of space that can be experienced by listening. From this perspective, a sonic environment always includes both the sound sources and the aural architecture of its surroundings: "Aural architecture emphasizes sound primarily as illumination, whereas soundscape emphasizes sound in itself" (Blesser and Salter 2009, p. 16). According to Blesser and Salter, the spatial experience of a listener is always related to one or multiple types of space such as 'social space', 'navigational space', 'aesthetic space', and 'musical space'. They consider the integration of 'aural architecture' in the design of a space as a stimulus for connecting 'auditory spatial awareness' with multiple spatial, sonic and cultural characteristics of experience.

Both the concept of 'aural architecture' and the notion of 'sonic effect' allow for the integration of observation and action in planning and design research. Drawing on both the generic assumption that the perceptive organization of specialized listening is fundamentally the same for everyday listening and the anagogical assumption that unification of sound phenomena must happen through a rediscovery of the pre-categorical approach to listening, Augoyard and Torgue argue that it is possible to arrive at an integrative process bringing together distinct cultural sound experiences.

Neither the concept of 'aural architecture', nor the conception of 'sonic effect' as developed by the CRESSON research group, seem to offer enough conceptual space for dealing with conflict in planning and design research. In search for a sonic approach capable of addressing urban conflict in a context of greenspace development, a conceptualization of sound's disruptive capacities became apparent.

Since the turn of the century and certainly in the past decade, there has been an increase in research focusing on the interconnections between sound, occupation of public space, urban conflict and urban planning and design (Rodríguez et al., 2009; LaBelle, 2010; Heys, 2011; Croce, 2017; White, 2020). Research in cultural geography and sound studies seems to have found theoretical paths for dealing with questions of contemporary urban conflict in relation to urban space by concentrating on material-affective processes and the role of sound as affect in spatio-temporal configurations creating affective atmospheres acting upon bodies in motion (Goodman, 2009; Gallagher, 2016; Gallagher et al., 2017).

2.1.2 Abductive Research

One of the objectives of this research project is the articulation of a conceptual framework and methodology for planning and design research that enables the study of affective forces propagating through space by use of the medium of sound and vibrations. Building on the use of assemblage thinking in recent sound and urban studies, I search for a non-anthropocentric, relational understanding of the position and role of urban sound and vibrations in old industrial railway space conversion to green space. Via a literature study of relational, non-anthropocentric perspectives on urban space, conflict, and sound, I aim to arrive at a theoretical framework enabling research on the disruptive, antagonistic, and indeterminate capacities of urban sound and vibrations in affecting transformative urban railway space and the bodies navigating it.

An interdisciplinary mixing of research tracks plus an intermittent reshuffling of the research timeline to fit the educational program, motivated the adoption of an abductive research approach. Abductive reasoning, a form of logical inference formulated by Charles Sanders Peirce (Campos, 2011), has been interpreted as a

form of creative guessing, based on repetitive observation followed by a definition of the simplest and most likely conclusion coming out of these observations. Following the prescheduled invitation for participation in the conception and teaching of Professor Pak's design studios and elective courses at the Brussels KU Leuven Faculty in Architecture, early in the research process, the definition of a conceptual framework happened simultaneously with the exploration of a sonic approach in planning and design research. The mixing of these two research tracks required a methodology of conceptual navigating attuned to the context and progress of the on-going case-study. In seeking generality, abductive case studies built on a perspectival approach with theory-laden empirical facts as an outcome (Hanson, as cited in Andersson et al., 2020). Practice-led research focusing on railway space conversion along the Brussels railway line L28 inspired the search for new and alternative theoretical and disciplinary paths, which in turn supported a critical rethinking of the position and role of urban sound and vibrations in planning and design research on railway space conversion.

2.2 Towards a Relational, Performative Sonic Material Research Approach

In what follows I will describe the search for a theoretical framework for addressing the position and role of urban sound in relation to the redevelopment of an old industrial railway area that is marked by the presence of urban performance and conflict. To define the ontological position of a critical sonic approach. I will focus respectively on urban conflict as contemporary urban violence, sound as vibrational affect and socio-spatial-temporal configurations co-generating affective sound spheres. The three components define the axes along which the sonic material research approach implemented in the case study has been structured.

2.2.1 Confronting Conflict in Transformative Urban Railway Space

In what follows, I'll look at three different ways of confronting urban conflict in transformative railway spaces, to find points of contact with both the turn to matter in sound studies, planning and design research focusing on spatio-temporal configurations co-generating affective sound spheres and the Brussels context of the greening of old industrial railway space. I will discuss three approaches to urban conflict. These are centered respectively on 'urban space as site of warfare', 'contemporary urban violence and subjectivity' and 'new military urbanism, volumetric cybernetic control, and the affect of nano-terror'. The sequence of this section involves different positions from where conflict is being addressed: from the global scale to the city, to subjectivity and cybergothic terror, and via a reflection on military urbanism and atmospheric intensification of fear in the urban realm, to the micro level of affect. I will argue that the conflict of transformative railway space along Brussels line L28 can be thought of as 'contemporary urban violence'.

2.2.1.1 Urban Space as a Site of Warfare

According to the 'new military doctrine of asymmetric war'— also described as 'low intensity conflict', 'netwar', the 'long war' or 'fourth generation war'— everyday urban spaces and circulations of the city are increasingly becoming the central spaces of warfare, as well in Western cities as abroad (Blackmore, 2005). Dutch-American Sociologist Saskia Sassen (2010, 2012) argues that densely populated and conflict-ridden urban space marked by inequality and injustice are potential sites for a variety or multiple types of conflict. Researching the urbanization of war, she explains how 'asymmetric war' and the pursuit of national security is putting cities on a new and expansive map of 'warring'. Sassen (2010) situates asymmetric warfare in a larger global context with cities increasingly becoming confronted with global governance challenges such as the environmental questions and the transit

of refugees, including people fleeing from war and other types of urban conflicts, arriving in already dense and conflictive urban spaces she also associates with inequality and injustice.

Taking a relational perspective on different cities, Sassen (2010) demonstrates how cities are embedded, or rather caught in what she defines as "assemblages of territory, authority and rights" (p. 34). In doing so, she aims to explain first how the urbanizing of war and its consequences are part of a larger disassembling of traditional all-encompassing formats of the nation-state and the interstate system. Secondly, researching how the urbanizing of war manifests itself differently on diverse urban sites, she aims to grasp how cities contribute to this disassembling, showing how urbanization of war makes powerlessness more complex, and how it contributes to new modes of norm-making within cities, rather than on the level of the nation-state. Reflecting upon different ways how the city resists and "talks back" (Sassen, 2012), she proposes the use of the notion of 'urban capabilities' to address urban space's capacity in creating new subjects and identities.

Sassen (2010) identifies four types of asymmetric war: 1) the actual encounter between conventional and unconventional forces on urban terrain, 2) the extension of the space for war outside the actual warzone like for example Madrid and London because of the bombings there, 3) the embedding of conventional state conflicts in an act of asymmetric war, 4) the activating by asymmetric war of older conflicts. She shows us how cities can be thought of both as a means of technology for containing conventional military powers in control as well as a technology of resistance for armed rebellion. She proposes to interpret the bombings in Madrid and London as 'material practices or actions initiated by local armed groups, independently from each other but as part of 'a multi-sited war' she describes as a "distributed and variable set of actions that gain larger meaning from a particular conflict with global projection" (p.37).

In New Wars Sassen and Kaldor (2020) bring together research on cities entanglement with the war and generalized insecurity concentrating on the city as a site of contemporary violence but also as a site of resistance and opportunity for the emergence of peace. They use the term 'new wars' to refer to a wide field of violent conflicts that, among other things, appropriate the city as an operative site. As examples of urban violence where human rights are violated, they refer to terrorism, criminal gang activity, sexual violence as well as evictions of impoverished settlements in the context of office park or gated community development. According to them, urban conflict often combines different forms of violence.

To grasp the presence of 'urban capabilities', Kaldor and Sassen approach the presence of 21st century urban violence and peace in cities from the perspectives of inhabitants. From an interest in understanding 'contemporary urban conflict' as today's 'frontier space' exposing systemic edges from within the city, Sassen and Kaldor explore the idea of new wars as social condition, or culture, ecosystem involving both conventional forces as irregular combatants. They point out how key characters of new wars reflect a preference for the city and urban-based conflict and how from a focus on these elements one can arrive at a better understanding of their persistence. As key characters of what they understand as 'contemporary urban violence' they identify: the network of state violence and non-state warriors operating both on a global and local scale, using a social basis of new identity politics; the quest for political control of territory via forced eviction, targeting of civilians, installation of surveillance and fear by use of contemporary communication technology; new megacities' fragile economics often marked by high unemployment rates, and the co-occurring informal and criminalized economies that often operate from within global power assemblages and, among other things, provide opportunities for warfare financing. Concentrating on case studies in the Global South, they argue that inner cities of the West are also

becoming sites of these ‘new wars.’

Kaldor and Sassen use a perspective on ‘security cultures’ to distinguish new wars from other models of global security interventions such as old wars, the war on terror and the liberal peace. Through case studies on the simultaneous or uncoupled occurrence of these types of cultures, they analyze how they differently relate to urban capabilities. Acknowledging that ‘security’ also refers to the safety of individuals or the state, understanding it as a set of capabilities, they locate it above all in political authority. Avoiding any normative judgement, they associate the concept of ‘culture’ with a set of practices connected to a purpose. Building on case-study, they argue that new wars can be described as a culture and point out how involved weaponized networks and actors reproduce themselves both through their reliance on weaponized violence, tactics, and practices they use to penetrate everyday life instilling experiences of insecurity. Acknowledging how new wars dominantly contribute to the experience of uncertainty at the local level of cities, they point out how this type of urban violence is embedded in global networks and in some places joined by other types of security culture such as ‘the war on terror’ and ‘the liberal peace’. The war on terror they associate with direct attacks, but also with ‘processes of enclavization’: partitions, the instalment of ‘security zones’, extensive surveillance infrastructure. They link this to the installation of green zones in Afghan and Iraqi cities. In the final part of this section on urban conflict, I’ll discuss how Graham (2011) argues that this tactic of green zones as part of security culture, has been adopted in the planning of western cities. Kaldor and Sassen also discuss ‘the liberal peace model’ of security. This model consists of the implementation of an agreement with actors involved in new wars and relies on a set of practices such as controlling weaponization, spacing out opposing sides, and the installation of peace-building programs. Here, too, physical segregation and surveillance are being used.

In line with Sassen, and Kaldor & Sassen, Belgian historian, specialized in Belgian intelligence, Kenneth Lasoen (2019; 2020) highlights how tactics of urbanized insurgency are being transferred to Western cities, exploiting there the openness and mobility of urban daily life through violent terrorist attacks. He points out that Belgium was the first Western country being confronted with the violence of a terrorist who came out the Syria war zone. In his study of the role of policy and security services in the follow-up to the Paris (2015) and Brussels (2016) attacks, Lasoen (2020) acknowledges how Molenbeek became the operative center of the Paris attacks. Lasoen (2019) argues that with the increased vulnerability of cities to contemporary transnational security threats, the traditional state monopoly on violence is being contested by combatants who in their targeting of citizens and figures of state authority employ the effects of brutal and violative surprise to install more intimidation and fear. Lasoen points out how these tactics of proximity transform urban public space into a battle space of asymmetric warfare.

According to the most recent *EU Terrorism Situation and Trend Report* (as cited in Europol, 2021), in the EU in 2017, jihadism has become the most serious forms of terrorist activity. It has been reported that jihadist terrorists can be coordinated by the Islamic State (IS) or rather inspired by the rhetoric or ideology of IS. Jihadist terrorists are being associated with different weapons such as “bladed weapons, automatic rifles, explosives and vehicles, and are expected to continue to do so” (Europol, 2021). In line with Bart Schuurman and colleagues (as cited in Lasoen, 2019), Lasoen takes a rather reserved position on assigning new dimensions to the techniques that the terrorists used for the Paris and Brussels Attacks. He suggests interpreting “Daesh's staging of terrorism” as “the replay of yesterday’s outrage and the transferability of techniques” (p. 958).

Building on Sassen (2010), Kaldor and Sassen (2020) and Lasoen (2019; 2020), I argue we can interpret the planning and executing of the Paris and Brussels

terrorist attacks as ‘contemporary urban violence’. I consider Lasoen’s analysis of Daesh's employment of technology as similar to Fisher's (2016) interpretation of Daesh as a ‘cybergothic phenomenon’. Fisher's analysis was a reaction to Badiou's (2016) interpretation of Daesh as fascism. I will discuss this in the following section.

2.2.1.2 Cybergothic Terror

On November 23, 2015, a few days after the Paris Attacks, Badiou (2016) gave a lecture at *La Commune* theatre, Aubervilliers in which he attempted to deconstruct the events. Exploring possible strategies for eliminating what he defines as “one of a number of current symptoms of a grave malady of the contemporary world, of this world as a whole” (p. 5), Badiou warns for a reaction structured around the nation state, war and affect. According to him, the murderers involved in the attacks are ‘fascists’. He argues that the triumph of global capital and the coupled situation of weak states are nourishing conditions for the emergence of fascist armed gangs with a religious coloration such as Daesh. Reflecting upon the triumph of globalized capital with its transnational deployment of capital and the occurrence of powerful forms of imperialism, he discusses its socio-cultural impact and further elaborates on the emergence of three types of singular subjectivities that he sees as specific to the present time:

The first type of subjectivity Badiou introduces, he describes as a subjectivity characterized by the contradiction between on the one hand, a historically grown arrogant self-satisfaction, rooted in a rather brutal materialism, and on the other hand, the constant fear of losing privilege. Here Badiou points out to the risk of instigating fear by use of media hacks and so on. The two other subjectivities he locates in the confrontation between one the one hand, being excluded from the world market and on the other hand, a constant exposure to the “spectacle of the luxury and arrogance of the others” (p. 17). Again, Badiou points to the role of the media. The first opposite subjectivity he associates with the ‘desire for the West’

(p.18): the desire to appropriate and share symbols of the luxury West. The second opposite subjectivity he describes as 'nihilist subjectivity': a subjectivity structured around the desire for revenge and destruction, Badiou associates with a "desire for departure and alienated imitation" (p.18). Badiou argues there is a connection between this type of violent desire and the appeal of reactive mythologies which in some cases trigger a weaponized defence against the Western way of life and the desire for the West. He stresses that the two opposite subjectivities: the "subjectivity of longing for the West" (p. 18) and the nihilistic subjectivity of revenge and destruction, form a couple that, in the conjunction of a positive and negative version, circulate around the captivating nature of Western domination.

Badiou argues that without alternatives or proposals for a collective uprising in support of the perspective of another structure of the world, these three subjectivities are entirely internal to our contemporary world's structure. Problematizing this interiority, Badiou demarcates what he understands as 'contemporary fascism': "a death drive articulated in a language of identity," with religion as possible but not the core "ingredient in this articulation" (p. 19). Not religion, but desire for the West, whether explicit or depressed, forms according to him, the basis of this fascism. Badiou understands fascism as a 'reactive subjectivity', a subjectivity that is intra-capitalist because it doesn't offer an alternative structure outside capitalism. Taking this perspective on subjectivity, he describes 'fascizing' as a move away from the desire for the West towards a nihilist and destructive attitude towards the same object of desire.

On a more practical level, Badiou associates this attitude with the logic of the gang, criminal gangsterism and processes of territoriality or the search for business monopolies. The appeal of this fascism to young people he situates in the combination of self-sacrificing and criminal heroism and 'Western' pleasures. Badiou argues that one's decision on how to deal with this frustration is more

decisive than religion or even origin. For Badiou “it is fascization that Islamizes, not Islam that fascizes” (p. 20). He suggests focusing on the contradiction between on the one hand, the deadly nihilism of fascists, and on the other hand the destructive empty imperial deployment of globalized capitalism rather than on different forms of fascist atrocities.

Cultural theorist Mark Fisher was, like Steve Goodman, a member of the CCRU, an experimental cultural theorist collective formed in late 1995 at Warwick University, England. Fisher is known for his theoretical work on ‘hauntology’ and his music writing and critique on music, pop culture, politics. In Ghosts of my Life, Fisher (2014) problematizes the experience of the lost promise of the past as ‘hauntology’ what he describes as the experience of a haunting urgency that there is something out there, beyond common sense that has been ignored, with an absence alternately inspiring and unsettling. Fisher associates hauntology with the mourning that mankind may individually or collectively engage with, because of the loss of a future that has never arrived. Understanding how in the first decade of the 21st century cyberspace began to dominate popular culture’s and especially music culture’s circuit of “reception, distribution, and consumption” (p. 20), Fisher attempts to connect the notion of hauntology with popular culture. Exploring different uses of this term he takes from Derrida (as cited in Fisher, 2014), Fisher analyses how hauntology surfaces in a specific way in early 21st century urban electronic music and in a more general way via “persistences, repetitions and prefigurations” in popular culture (p. 28).

In a reaction to Badiou’s analysis of globalization, subjectivity, and terror, Fisher (2016) criticizes his interpretation of Daesh as ‘fascism.’ According to Fisher, this classification darkens rather than exposes the nature of Daesh’s violent character and its liaison with the current stage of capitalism. Fisher agrees with Badiou’s description of Daesh as ‘gangsters’: “they are indeed part gang, part apocalyptic

cult, part franchise. If nothing else, ISIS is a slick brand—a brand that is far more effective than anything capital can come up with now in any case" (p. 1). Fisher describes it as nihilism, as a bored, existential poverty aligned to a material poverty caused by capital. Criticizing Badiou for failing to see the extent to which Daesh offers at least a partial escape from the dismal identities that capitalism has assigned to many young people, Fisher argues that the main motivation for joining Daesh is belonging and fellowship. From a critique on postmodernism, emphasizing how it offers false solutions in response to 'real' problems, for Fisher, Daesh is nothing more than a "cybergothic phenomenon which combines the ancient with the contemporary" (par. 9), operating as an obstruction to a future that is already in the process of assembling itself. He concludes by pointing to the emergence of new forms of belonging that he believes will eventually unmask Daesh as archaisms, and obstructions.

In a similar way to Fisher, Kaldor & Sassen (2020) draw attention to the emergence and role of new forms of belonging. In the 'commingling' of diverse urban struggles they situate a potential for the cultivation of a broader, and deeper push forward to a new normative order. Acknowledging how urban space fosters the creation and development of urban 'capabilities', they consider the dialectic between urban violence and 'commingling' as fundamental to the open urbanity of European cities and urban space supportive to expanded citizenship. In what follows, I will review the work of urban researchers who aim to grasp interconnections between the military and the city. A concern for the installation of threat and fear in urban space, moves the research to the level of affect and affective atmospheres. In line with Pavoni and Tulumello (2018), in the section on the turn to matter in sound studies, I will argue that a critical approach to urban space necessitates a relational approach away from a focus on subjective perception and experience. In a later section I will employ this conclusion to argue for a deviant engagement with urban sound in planning and design research.

2.2.1.3 Urban Atmospheres of Fear

Urban researcher Stephen Graham (2009; 2011) exposes how the militarization of urban life connects with the rapid urbanization of the world through multiple circuits of militarization and securitization embedded in the urban fabric. He defines 'new military urbanism' as a comprehensive and continuous set of "evolving ideas, doctrines, practices, norms, techniques and popular cultural arenas through which the everyday spaces, sites and infrastructures of cities—along with their civilian populations—are now rendered as the main targets and threats within a limitless 'battlespace'" (2009, par. 1).

According to Graham, the planning and instalment of high-tech surveillance and tracking systems cannot be merely comprehended as state responses to security threats. Considering them as efforts towards a militarization of civil society. Graham (2011) points at an increasing interest of Western states in the identification of rebellions, terrorists and threats impacting urban life, and the co-occurring phenomenon of militarization penetrating a wide range of policy debates on public space, landscape, urban infrastructure, as well as popular and /or cultural realms, in addition to the instalment of — anti-drugs, anti-crime, anti-terror, anti-insecurity policies itself. Reflecting upon an increased use of surveillance technology in urban space, referring to Crandall (as cited in Graham, 2011), he problematizes the process of profound militarization caused by the complementation or replacement of social identification of people or flows in the context of civilian law enforcement via a machinic seeing of 'targets.' Pointing out how this logic of militarization also penetrates popular culture; he concludes that the militarization of everyday life is perhaps most evident in those circuits of popular culture that involve electronic and virtual entertainment and the production and consumption of news.

Problematizing an all-encompassing discourse of security in urban planning, Graham (2011) points out how also the development of green zones in strategic areas can be interpreted as a military technique for protecting these strategic areas, a technique he considers as being adopted from war zones. Graham uses Foucault's (as cited in Graham, 2011) term of the "boomerang effect" (p. 19) for describing the blending of security and military doctrines in Western planning and design approaches with those that are being used in the colonial peripheries. He associates the emergence of these boomerang effects with cultural geographies of the political right and the extreme right that frame cities a priori as problematic space and therefore as challenge to national security states. The military-urbanism paradigm inspired a structuring of urban analysis around a volumetric conception of urban space. Together with Lucy Hewitt, Graham (2015) explores the potential of a vertical expansion in urban geographical research. Their research on verticality or the introduction of the 'view from above' points to the importance of aerial photography in surveillance and warfare, and the use of satellite imagery for urban design and architecture. Graham's ideas on verticality recalls Virilio's (as cited in Gane, 1999, pp. 86-87) understanding of war as a problem of volume, the idea of 'battlespace', rather than a battlefield. Virilio (as cited in Gane, 1999) criticizes conventional architecture for being too much concerned with the flat and the vertical. Exploring angles, tangents, and the implications of military practices for urban design, he suggests a realignment of urbanist perspectives, from 'territories' to 'ballistics.'

Urban researchers Pavoni and Tulumello (2018) point out how security emerges as a distinctive urban problem of capitalist urbanization adopting the form of post-political neutralization of violence. By addressing security in this way, they attempt to illustrate how an ecological approach, structured around the conception of atmosphere as affective assemblage, has the potential to contribute to research on urban violence.

Acknowledging capitalist urbanization as an increasingly planetary process, they argue for an opening up of urban research to both the planetary scale of its socio-spatial configuration and violent process of urbanization, as well as to its material and affective relations. Exploring a conception of 'atmosphere', which they associate here with a concrete actualization of this process in urban space, they interrogate how violence of capitalist urbanization takes place in a multi-directional creation of the material and affective reality of everyday urban experience. Inspired by recent turns in the humanities such as the turns toward the affective, material, and the post-human, Pavoni and Tulumello argue to re-orientate research on urban violence to the ways in which representations and narratives of violence become embedded and sedimented into the materiality of urban environments. Atmospheric thinking brings them to reflect upon the historical and emergent structuring of affects, emotions, and feelings and how these are being used for political, economic, or security reasons.

Reflecting upon 'urban violence' as a construction, they point at the need to address not only its structuring power relations but also its dependence on constructions of the "imaginary of security" (p. 58). According to Pavoni and Tulumello, security is most pervasive in its symbolic dimensions rather than in its direct and structurally violent dimensions. They explain this pervasiveness via the idea that security, by definition, must assure itself of the 'legitimate' use of force to become operative. Via Wark (as cited in Pavoni and Tulumello, 2018), they point out how security needs a constant legitimation and justification and therefore a supposed opposite, namely insecurity, and its allies: "violence and the fear of violence" (p. 61). They stress how an orientation toward fighting or eliminating violence goes together with a self-fulfilling non-stop projection of a normality onto the social. Rather than in the future elimination of violence, they are interested in the actual material and affective violence that this projection generates.

From this affective assemblage thinking on urban violence, Pavoni and Tulumello problematize the notion of 'comfort' by addressing how it sums up well the relation between the socio-historical entanglement of violence, security, and urbanisation and their material and affective actualization in the city. Via Sloterdijk (as cited in Pavoni and Tulumello, 2018), they acknowledge how comfort becomes an important mode of urban politics once it becomes central to the structuring of urban life into technological, normative, affective, and physical interiors, in other words, secure spaces, relations, and practices that mitigate risk and insecurity. Referring to Thrift (as cited in Pavoni and Tulumello, 2018) Brighenti and Pavoni (as cited in Pavoni and Tulumello, 2018), they point out how in this context concerns for safety, the objectives of comfort and recreation are often combined. Relating this to an expansion of categories under which 'expressions' of urban violence can be included; they argue how this expansion legitimizes both structural and direct mechanisms put in place to repress them.

According to Pavoni and Tulumello, the efforts to control or neutralize (direct) violence leads to an increase in structural and cultural violence, which they associate with violent materializations in the city in the form of pervasive atmospheres of fear. Building on Massumi (as cited in Pavoni and Tulumello, 2018) and others, they conclude that urban violence becomes manifest as atmospheric potential with this violence always happening asymmetrical, along lines of gender, ethnicity etc. Elaborating this perspective on affective assemblages, they stress that it goes beyond subjective perception or experience, and that urban violence necessitates a contextualization within a broader evolution of the physical and affective aesthetics of the urban in the context of capitalist urbanization. Pavoni and Tulumello's problematization of how urban everyday life is constituted from within socio-spatial configurations in which the violence of oppression and exclusion is allowed to take place, secretly or otherwise, in intangible and nonetheless material spheres of fear, brings me to Parisi and Goodman's reflection on nanoterror.

Following Brian Massumi's (1993) suggestion to take 'fear' as the affective syndrome or barometric affect of contemporary capitalism, Parisi and Goodman (2005) explore the instalment of new modi of control by looking at the evolutionary status of fear. From a perspective on affect, they discuss the installation of a new modus of control, one they associate with a pre-emptive engineering that is "taking hold of the biotic matrix" (par. 3). Situating the operating of this new modus at the level of the virtual, Parisi and Goodman argue that this modus follows the rule of the pre-emptive attack with an orientation towards a persistent activation of the future rather than preventing humans from an unwanted future to happen. They point out how the intensification of fear becomes nanoterror, via the introduction of a new weapon of control.

Referring to Whitehead's (in Parisi and Goodman, 2005) conception of the human body as a complex amplifier, they propose to interpret this shift as "intensifying nano and micro vibrations into collectively contagious affects and sensations on a higher scale" (par. 3). Understanding fear as 'feedback of futurity' and the body as an 'open sensor', they argue that nanoterror induces a reaction to fear differently than a fight or flight response. According to them, nanoterror causes the immobility of the collective body, "a cultural response suspended in the collective fright of ever tightening security" (par. 3). Parisi and Goodman (2005) conclude that the emergence of implosive nano- politics characterized by pre-emption indicates the installation of a new modus of control. In the attempt to secure possible micro threats, they point to potentially new battlefields where even more ontologically profound nano-threats may be invoked.

In *Sonic Warfare*, researcher, DJ and founder of the *Hyperdub* record label, Steve Goodman (2009) questions sonic warfare operating at the micro level of affect. Researching the deployment of sound systems in the modulation of affect, he argues for a politics of frequency. Mapping out a (dis)continuum of vibrational

force, he discusses different uses of acoustic force and how they affect populations, both in the context of warfare for the instalment of threat, security, and control and in the context of music and performance, as part of the search for new aesthetic experiences and new ways of mobilizing bodies. Goodman points out the importance of addressing the politics of frequencies. From here, he speculates on peripheral sonic perception using the concept of 'unsound' which he continues to explore with AUDINT group (Goodman et al., 2019).

2.2.2 The Turn to Matter and Affect in Sound Studies

In this section, I will discuss the turn to materiality and affect in sound studies. Starting point of this part was an interest in Goodman's theoretical work on sonic warfare. I will introduce some of the main elements of his ontology of vibrational force and review his critiques on anthropocentric conceptions of 'soundscape' and 'sonic effect.' Next, I will review discussions on the turn to matter in sound studies to arrive at a positioning in relation to this debate.

2.2.2.1 Sonic Materiality and Affect

Discussing the materiality of sound, Raviv Ganchrow (2009), sound artist and researcher, moves beyond a psychological and a physical understanding of acoustics to arrive at a conception of a sonic spatiality in which both the object and the listener are muted, exposing the material body of reverberation itself. From this perspective, 'sonic spatiality' cannot be understood as something that belongs to the individual listener, nor as an absolute sonic spatiality in need of a definition. Rather, this position induces a conception of sound space as heterogeneous and intermittent contextually constituted materializations of sound, with each situation highlighting a slightly different perspective on spatial characteristics.

Over the past decade, there has been an explosion of scholarly interest in the material, vibratory and affective nature of sound (Goodman, 2009; Enns & Trower, 2013; Gallagher, 2016). By re-examining sonic experience as 'material vibrational', Steve Goodman (2009) challenges conceptions of sound concentrating on the ear and the sense of hearing. In line with what Marie Thompson (2017) describes as the "ontological turn in sound studies" (p. 266), Goodman moves away from a human-centred philosophy of sound towards a wider ontology of vibrational force. The shift towards this materialist perspective allows him to question modalities in which human and non-human components jointly participate in processes of sonic production by concentrating on the way vibrations define relations by moving in between and within human and non-human bodies. From this perspective, matter is understood as processual and fundamentally relation-bound with bodies interconnected by vibrations, emerging within relations that did not pre-exist.

Along with an increasing interest in the affective nature of sound, a growing body in sound studies and cultural geography concentrates on the role of sound and vibrations in the production of political geographies of affect (Kanngieser, 2012; Gallagher, Kanngieser, and Prior 2017). Exploring a non-anthropocentric conception of sonic experience enveloped by a wider field of power, Goodman (2009) argues for a more deeply questioning of how affective tonality and environmental vibrations operate within relations of power.

In search for a deviant sonic approach structured around sonic experiences of transformative railway space that has become the scene for contemporary urban violence, it seems of relevance to study how sonic experience is mediated and how all mediations are affected by relations of power. In what follows, via literature study on the material and affective turn in sound studies, I will argue for a non-anthropocentric engagement with urban sound and vibrations, and from here for an opening up of planning and design research to material-affective analysis of

urban space.

2.2.2.2 Urban Sound as Vibrational Force

For his ontology of vibrational force, Goodman zooms in on the moment before the activation of cognitive listening, to the "level of basic processes of entities affecting other entities" (p. 81). He understands affect "in its broadest possible sense to mean the potential of an entity or event to affect or to be affected by another entity or event" (p. xiv). From this perspective, vibration is thought of as the medium through which transmission occurs. Goodman argues that sound as vibration impacts the body before the exteroceptive sensory channels are assigned. Using an expanded conceptualization of the body, Goodman describes the 'nexus of experience' as a collective entity determined by its vibrational consistency. Inspired by bass materialist research concepts and practices, for him, transmission of force can be thought as 'a-modal'.

According to Goodman, the vibrational nexus of sensory modalities is crucial for every sonic experience. He proposes a conception of the body as a transducer of vibration like a 'multi-fx-unit' (p. 46). Departing from the conception of the listener as a detached subject that is separated from its surrounding sonic objects, Goodman neglects the approach of soundscape studies. In line with Massumi's work on fear and pre-emption, he assumes that a pre-emptive mode of power operates on a subconscious, visceral level and therefore necessitates affective analysis. He argues that a concealment of cognitive processing and phenomenological subjective agency hides the real forces of power. Non-affective analyses and related techniques he considers as superficial and potentially dangerous.

Exploring an abstract model of threat in cybernetic control societies, Goodman suggests the conception of a cybernetically upgraded mode of audition, one that is

marked by a technically expanded bandwidth of audible frequencies. He proposes a conception of 'unsound', for thinking the not yet audible, the dimension of sonic virtuality situated in a confrontation between the sonic and the trans-sensorial. In his recent paper on 'the unheard', Ewé, (2021) points out how Goodman reflects upon "sound-as-vibration as well as sound-as-experience" (p. 451) and how he coined the term 'unsound' for indicating different types of sonic potentiality. Building on the work of François J. Bonnet, Ewé defines the 'sonorous' or 'unheard' as "that which falls short of being 'aurally perceived'" (p. 449). Following this reasoning, an 'unheard unsound' is a virtual sonic event that does not necessarily need to happen. Unhearing he understands as the effort of tuning in the very potential of the unheard to affect it. According to Ewé, the virtuality of the unheard interfaces with the actual via its capacity to induce material alterations there.

Questioning the role of resonant frequency of the built environment in the modulation of affect, Goodman argues for an ecological approach and proposes a conception of the 'city as a medium' rather than as 'site of warfare'. Pointing out how tone can be used as a tool for tuning conflict strategies in the city, Goodman comes close to Augoyard and Togue's (2006) suggestion of playing the city as an instrument. He warns for the risks of a technical upgrading of the human sensorium as part of a 'politics of frequency' and the use of vibration as the very weapon of warfare, targeting not only the operating systems of machines, but also the affective operating systems of the people inhabiting a city. This brings Goodman to the conception of an ecology wherein "an event would simultaneously draw in the physics of its environment (its vibrations) and the moods of its populace (its vibes), sending an immense collective shiver through the urban as resonating surface" (p. 76).

Constructing an 'ontology of vibrational force', Goodman references the vibratory anarchitecture practice of the American artist Mark Bain, the experimental work of

Hans Jenny who coined the term cymatics for describing acoustic effects of sound wave phenomena, and “the vernacular seismology and sonic dominance practiced by the bass materialists of the musical diaspora of Jamaican sound system culture” (p. 79). Goodman associates these practices with the intention to accelerate vibrational unfolding bodies onto a vibrational discontinuum that intersects the Earth, the built environment, analogue and digital technology, and the human body in various ways. The vibrational nexus he describes as: “each actual occasion of experience that populates this discontinuum,” that is “drawing in an array of elements into its collective shiver” (p. 79). From here, Goodman arrives at a conception of a non-anthropocentric topology of vibrational surfaces with all matter becoming a reservoir of mediatic contamination. The outlining of a vibrational anarchitecture he associates with the modelling of a topological mediatic space that is crosscutting analogue and digital sound waves and granular material opening to the level of the atomic. Approaching this topology of vibrating surfaces outside of semiotic registers, he considers media themselves as expressive.

Building on Whitehead’s process philosophy, Goodman (pp. 91-103) situates the ontological foundations of a ‘micropolitics of frequency’ in this quantum field of ‘vibrational anarchitecture’. Concerned with potential vibration, with vibrating entities being out of phase with themselves and the abstract rhythmic relation of oscillation, Goodman’s approach differs from a phenomenology of sonic effects structured around the experience by a human subject. He considers a focus on individualized subjective feeling as a failure to address the distributed agency of a vibrational encounter and the role of non-human participants involved in a nexus of experience and suggests instead a conception of a ‘vibrational nexus’ transcending and preceding the subject-object distinction, constituting a network of relations in which discrete entities pick up each other's vibrations. Goodman points to the possibility of mapping the ‘active mobilization of a population’ of a

rhythmic anarchitecture by concentrating on both its composition or ‘rhythmic consistency’ and its ability to affect and be affected by other entities.

Following an ontological grounding in a ‘rhythmic anarchitecture', Goodman seems to engage with rhythm-analysis and the political concerns of post-structuralism. By exploring a conception of urban sound as vibrational force and populations as preconscious rhythmic assemblages, he searches to understand the socio- political impact of this vibrant matter or texture. Moving away from an anthropocentric ontology, he searches to grasp the power structures that are marking material bodies as subjects of power. Human’s capacity to affect and to be affected is conceived of as one amongst others, with the individuated body consisting of a multitude of bodies. Drawing from Deleuze and Guattari but also Whitehead, he searches to reconcile phenomenal sonic experience with technical and natural sciences.

Speculatively extending Deleuze and Guattari’s notion of the ‘war machine’ into the sonic, Goodman explores the role of the ‘vortex’ or ‘abstract vorticism’ in forming a rhythmic anarchitecture. Acknowledging this vorticism’s incapability of setting directions or orientations, Goodman argues that micropolitics can only be tactical rather than strategical. Noise is thought of as a rhythmic reservoir. He uses Cannetti’s conception of a “’throbbing’, rhythmic crowd” (p. 110) for a reflection on the integration of a transitory body of a crowd, their affective temperatures, the built environment, and urban street systems in what he describes as “a topology of vibrating collective entities” (p. 111).

Referring to Kodwo Eshun’s (1998) concept of the ‘rhythmachine’ Goodman searches to explain how rhythm organizes heterogeneous materials and thereby transforms affective potential. The focus of this study is not music but rather the atmospheres generated by music's interaction with space, sound systems and

bodies. Exploring the idea of sonic accelerationism as part of Black culture, Eshun points to the capacity of dance to make the human something else rather than exposing aspects of the human. Eshun argues that Black Culture "alienates itself from the human: it arrives from the future" (p. 5). A coupling of Blackness with the machinic triggers a reflection on the human as a category. Expanding on this rhetorical move and acknowledging human desire for the inauthentic and the artificial, Eshun argues that the goal of this sonic accelerationism is to stimulate machine-made music's "despotic drive" (p. 4). He explains how the electronic sound and beats of late nineties Detroit techno create abstract sonic environments calling in the body into machinic patterns of movement. "Abstract doesn't mean rarefied or detached but the opposite: the body stuttering on the edge of a future sound, teetering on the brink of new speech" (p. 71).

Rhythm is acknowledged as a leading tool in a process where music technologies pre-program the phase space of sonic possible worlds with human sound designers becoming the output of a machine rather than the author of music. Thinking of the future as "a much better guide to the present than the past", Eshun looks at the 'rhythmachine' as a synthesizer processing any datum, integrating a sequence of moments into a transitory present. From an interest in invention, the part of this processing that is confronting futurity is considered as the most essential one.

Recalcitrant toward the analysis of grooves, or finding a language to describe them, Eshun is more interested in "Unidentified Audio Objects" (p. 5). Shifting perspective from roots to air, Eshun is also not that much interested in a writing that seeks authenticity in music among others by associating it with an organic community. As a writer he is not looking for 'keeping it real' and rejects the idea of 'the street' as a mythical, social, or public space out of which the real emerges. From a perspective on the military industrial complex interfering with civil society, which brings him to the notion of 'military entertainment complex', Eshun thinks of the

street rather as “a playground in which low-end developments of military technology are unleashed, to mutate themselves” (p. 85).

Hesitant about its claims to street-level authenticity, Eshun doesn’t show much interest in the sonic world of hip hop. He considers it not really as a genre but rather as “an omni-genre, a conceptual approach towards sonic organization rather than particular sound in itself” (p. 89). Eshun only discusses the work of some hip hop pioneers such as Rammelzee’s gothic futurism he interprets as a reaction to the militarization of all aspects of life. He acknowledges how Rammelzee explores futures induced by breakbeat experiments with the turntable. Eshun emphasizes the active role of machines in driving this production. Eshun emphasizes that machines drive this sonic production as authors using human DJ as its medium. He points at a techno DJ’s capacity to intensify estrangement through alien sound design.

Pointing out how machinic music seems to present itself as ‘Unidentified Audio Object’, Eshun explains that the erasure of Blackness is possible, only through Blackness or its analogues. Acknowledging 1990s Hip Hop music heightened awareness of the manufactured, designed and posthuman existence of African Americans, Eshun traces in the sonic fiction of Techno music a way out, away from the streets. For Eshun: “To technofy is to become aware of the co-evolution of machine and human, the secret life of machines, the computerization of the world, the programming of history, the informatics of reality” (p. 103). The digitalization of popular music, not least, via the processing of analogue signals into echoes or loops, introduces a spatiality with listening becoming: “a field trip through a found environment” (p. 66). Early forms of media technology and sound experiments are harnessed according to its own capacities in the process of creating urban sonic spatiality or atmospheres.

Drawing from Eshun, Goodman acknowledges how vibrational virologies of the Black Atlantic, including the hyperdub methodologies of the hard- core continuum, contribute to the development of techniques for affective mobilization not least via the simulation of physics of sound navigating a particular acoustic space. He associates vibrations, sonic processes, and commercialized tactics of the black Atlantic with a broader concept of audio virology and a tactical move towards mobilization that he considers as a possible escape route away from the modulation of pre-emptive capital. Goodman refers to Eshun's framing of these processes as tactics for the "redesign of sonic reality" (as cited in Goodman, 2009. p. 158). Understanding how rhythmic anarchitecture and the vortical bodies of the rhythmic crowd decompress space and time, Goodman proposes to think of a weaponized sonic intervention in conflict zones as dynamic: "the insertion of a rhythmic component as provocation or affective projectile" (p. 112). The conceptual power of these kinds of effects, he argues, is situated in their potential to pre-empt virtual, non-existing sonic spaces, infiltrating real spaces with audio hallucinations. From a sonic warfare perspective, Goodman warns for a possible manipulative appropriation and the conversion of these material-affective techniques into programs of control operations.

Goodman's theoretical work on sonic warfare offers a critical, constructive alternative for anthropocentric perspectives that are dominating debates on sound art, urbanism, and architecture. Grounding his theoretical work on sonic warfare in (bass) materialism, he explores research positions away from the soundscape approach but different from phenomenology and acoustics engineering. In doing so, Goodman searches to reconcile a phenomenal experience with natural science, without rejecting either of them. He seems to draw from post-structuralism while extending the debate towards matters. Goodman's 'ontology of vibrational force' has been situated in a larger context of a sound studies' revived interest in ontology and matter (Kane, 2015; James, 2019; Ewé, 2021).

2.2.2.3 Addressing the Subject-object Relation in Sonic Knowledge Production

The conception of 'sound as vibration' became an important theme for new materialist thinking and research in sound studies and beyond (Goodman, 2009; Bennet, 2010; Voegelin, 2019). In her book *Vibrant Matter – a political ecology of things* American political theorist and philosopher Jane Bennett promotes a vitalist conception of matter expanding the perspective from the human experience of things to things themselves. Vibrations of sound waves she interprets as the evidence of the liveliness and agential capacities of matter. In her theoretical work on 'vital materiality' she reflects upon the agency as the effect of 'ad hoc' configurations involving human and non-human forces. According to Bennett, a distributed understanding of agency potentially encourages the cultivation of more responsible, ecological sound politics.

In his critique on what he observes as a lack of theory on sound art, philosopher, critic, and curator, Christoph Cox (2011; 2018a; 2018b) also problematizes the privileged ontological position of the human listener. Cox studies sonic practices using a conception of 'sonic flux': "sound as an immemorial material flow to which human expressions contribute but that precedes and exceeds those expressions" (2018b, p. 2). According to him, practices in sonic arts that are structured around this material flow both resemble and resist approaches in the visual arts and are not only aesthetically but also philosophically of relevance. He argues for a realist and materialist aesthetics as alternative theoretical framework for research on sound arts.

Cox searches to move sound studies beyond theories of representation and signification. He problematizes the contemporary cultural theory of sound art from an understanding that it relies on a narrow anthropocentrism, treating human symbolic interaction as: "unique and privileged endowment from which the rest of

nature is excluded" (Cox, 2011, p. 147). He argues that starting from semiotics and semantics implicitly supports a separation between culture and nature by considering nature as in-significant or as social construction. Cox understands human symbolic life as a particular moment in the transformative process of the natural world. Acknowledging how significant sound artwork from the last six decades concentrates on the materiality of sound and its affection, he states: "that sonic arts are not more abstract but rather more concrete than the visual and therefore not in need of a formalist analysis but a materialist one" (2011, p. 149).

The turn to matter in sound studies has been criticized both in a positive and negative way with some critiques emerging from sonic researchers involved in postcolonial and feminist debates (Kane, 2015; Thompson, 2017; Goh, 2017; Labelle, 2018; James, 2019). One of the contra arguments is that this turn to materialism is insensitive to differences of sonic experiences related to class, gender, and race (James, 2019).

Lecturer in media, sound and culture, Marie Thompson (2017) questions the ontological turn in sound studies by connecting it to questions of race. She argues that recent manifestations of the ontological turn in sound studies are constructed upon what she takes from Haraway (as cited in Thompson, 2017): a 'modest' white aurality. According to Thompson, a materialist sonic perspective is used to articulate what is heard as 'sound-itself' (abstract sounds) while masking sound's connection with the social world, cutting of experienced sociability from sound art's abstract materiality. In support of her argument, Thompson refers to work by researchers like Wynter (as cited in Thompson, 2017), Fanon (as cited in Thompson, 2017); Sarah Ahmed's (as cited in Thompson, 2017); Diana Leong (as cited in Thompson, 2017) and Fred Moten (as cited in Thompson, 2017), who according to her demonstrate that ontologies are affected by their historical moment.

Building on the work of Professor of Music Brian Kane (2015), Thompson explores the idea of 'sound studies' as a specific field structured around an ontology of sound turned away from the priorities and methodologies of 'auditory culture.' This split between auditory culture and sound studies she compares with the difference between 'narrowband' and 'broadband' interests: the former she associates with an interest in situated knowledges, practices and histories, an interest in established knowledge, practices, and histories, and the second with an opening to the more essential, the abstract and the general. She points out how sound art, when compared to music, is associated with research into the affective, non-representational, and non-discursive dimensions of sound, with 'materialist' sound art becoming known as the discipline that exposes the 'ontological specificities of sound' itself.

She disagrees with Cox' proposal to take the notion of 'sound-as-flux' as a general model for sound art. For her, his sonic philosophy is not neutral but rather rooted in a particular European philosophical lineage drawing from Nietzsche, Schopenhauer and Deleuze and the sonic experimentation of John Cage. Cox's interpretation of a Cagean curator as 'modest' reminds her of the Harawayian usage of this term. Thompson understands 'modest' as: "the modernist virtue of scientistic and traceless observation; entangled with formations of whiteness, masculinity and Eurocentrism, it pertains to a subject less position from which the world is observed from everywhere and nowhere, and from which bias is 'removed' through obfuscation" (p. 272).

By connecting Cox's sonic ontology to position and perspective, Thompson aims to expose the role of 'white aurality' in outlining "a sonic materiality that can clearly be distinguished as preceding sociality, discourse, meaning and power," and its role in "consequently defining the virtues of 'modest' sound art" (p. 273). She argues that shared cultural practices and shared conceptual schema's play a role in the

perceived idea of a work's ontological condition. Using Kane's notion of an 'implicit slippage' between: "sound art 'is' revealing sound's ontological specificities", and "sound art heard 'as' revealing sound's ontological specificities", she points out how the presence of white aurality, is characterized by a hidden reliance on "situated and racialized aurality" (p. 273). For her, this slippage comes down to Kane's (as cited in Thompson, 2017, p. 274) 'category mistake' in which 'embodiment' and 'exemplification' are mixed up. Thompson argues that Cox' ontologically oriented sound art, reveals the ontological condition of sound itself, through what Kane defined as 'exemplification', that is, "through a 'perceived' likeness to what is thought to be the work's ontological condition" (p. 274).

Philosopher of popular music, Robin James (2017; 2019) agrees with Thompson and points out how Cox's sonic materialism is problematic in a similar way she thinks Bennett and Barad's new materialisms are. She argues that these new materialisms produce the same type of relations among theories like the ones that neoliberalism and biopolitics install among people. For her, a perspective on the 'pre-political' risks doing nothing more than naturalizing power structures.

In her recent book, *The Sonic Episteme*, James (2019) argues that Goodman throughout his elaboration of a sonic vibrational ontology, performs a different rhetorical gesture than new materialist theorists because he uses an abstraction that is ontologically prior to new materialism efforts. But that doesn't discourage her from problematizing his focus on the 'pre-emptive' or 'sub politics'. Referring to the absence of addressing property relations and Goodman's claim that frequency operates below or prior to the level of social identity, James argues that Goodman's vibrational ontology abstracts away from underlying politics of frequency. Referring to Wayne Marshall (as cited in James, 2019, p. 207), she interprets Goodman's move to a deeper analysis level as a 'sidestep' rather than as a gesture of replacement or renewal: "Even though Goodman uses resonance to

abstract away from what he thinks are merely 'ontic' concerns like race or gender (191), his project doesn't enact a politics of exception" (p 207). Problematizing how Goodman concentrates on relations between virological methods or techniques, she concludes that despite situating his analysis of a politics of frequency at the level of ontology, his project relies on an idealized social ontology.

Artist, DJ and researcher, Annie Goh (2017) problematizes Cox' account of sonic materialism, by understanding it as another form of 'sonic naturalism'. Interpreting Cox's account as an effort to overcome the divide between phenomenon and noumenon in its relation to speculative realism theories, she problematizes his materialism saying it repeats other dualisms. Goh problematizes how different forms of sonic naturalisms, via their structuring around a subject-object binary, mutually reinforce a problematic relation "between masculinist subject/mind/culture and the feminized object/matter/nature" (p. 288). Exploring 'sounding situated knowledges' as an alternative form of sonic knowledge production, Goh criticizes Cox's materialism in two ways:

Firstly, by tracing it back to what she defines as a Kantian masculinist split between emotions, feelings, and desires from ratio, she argues that Cox' sonic materialism follows a disembodied rationality and in doing so fails to deal both with the question of how the body relates to knowledge production. For her, this persistence of a disembodiment in knowledge production repeats the problem of unaccountability. In line with Thompson (2017), Goh understands Cox positioning as a reification of the masculinist, white European subject. Interpreting it as "flare-up of the Cartesian subject", she catalogues it as a "new form of posthuman sonic naturalism" (p. 287).

Secondly, Goh problematizes Cox' reliance on Nietzsche's conception of nature. She argues that Cox' account resonates the traditional subject-object relation with the

masculine subject defining the feminized object of nature. The idea of nature as an 'extravagantly creative power', she associates with stereotypically feminized notions of nature as unknown matter and disconnected from the philosophical subject. Referring to Sara Ahmed (as cited in Goh, 2017), Goh warns for the tendency or 'gesture' in new materialism of installing a "false dichotomy between 'realist' new materialism and anti-realist postmodernism and poststructuralism" (p. 287). According to Goh, Cox' interest for 'sound-in-itself' indicates a reliance on the "very separation between language/culture and matter/nature it aims to overcome" (p. 287).

According to Goh, Cox's account relies on an undisputed division between the material and culture obscuring a split between the ontology of the object and the epistemology of the subject. Referring to Barad's 'onto-epistemology', she interprets the practice of splitting epistemology from ontology as "reverberation of a metaphysics that assumes an inherent difference between human and non-human, subject and object, mind and body, matter and discourse" (p. 288). Goh agrees with how Barad's (2007) approach of 'agential realism' is structured around a notion of matter as inextricably entangled in material-discursive relations and the integration of knowing and being plus ethics.

Addressing a need for a critical re-negotiation of the subject-object relation in sonic knowledge production, Goh argues for a 'sounding situated knowledges' structured around Haraway's notions of 'embodiedness' and 'situatedness'. Aiming for a feminist intervention in contemporary sound studies, she problematizes a grounding of sonic knowledge production in embodiedness that is referring to listening or experience without acknowledging situatedness. In line with Haraway, Goh associates situatedness with the recognition of a position's partiality: "including but more than just physical embodiedness" (p. 289). In doing so, she

acknowledges and points at the importance of addressing the complexity of multi-sensoriality.

Problematizing the risk of a re-centring to whiteness and masculinity in sound studies, Goh argues for more research on conditions facilitating a critical re-negotiating of subject-object relation in sonic knowledge production. For Goh, Haraway's (as cited in Goh, 2017) preference of 'difference' over 'reflection' is central to this critical re-evaluation. She interprets Haraway's notion of 'situatedness' as a more critical alternative for a flat reading of positionality which she associates with standpoint theory. According to Goh, 'situatedness' can expose the political-ethical conditions of knowledge production. Haraway's turn to material-semiotics she interprets as an attempt to explode the dualism of matter/nature and language/culture. Using a conception of the 'echo' as a cyborgian feminist figure for her research in archeoaccoustics, a sub-area of archaeology and acoustics in which the relationship between people and sound throughout history is studied, Goh searches to demonstrate the potential of a cyborgian 'non-innocent' listening of 'sounding situated knowledges' for sonic knowledge production.

In a reaction to Thompson's and Goh's critique, Cox (2018a) defends his position writing that Thompson's rejection of ontology doesn't make sense. He argues for a 'rejection of correlations' in favor of a focus on *sonic flux*, he understands as a continuous becoming, transcending human contributions. Cox explains he doesn't search to deny ontological commitments. According to him, Thompson (2017) is objecting to 'realist ontology' rather than to ontology and for him it is 'materialist realism' that maintains the self-organizing power of material processes. For Cox, correlative thinking fails to make sense of the statements of natural science. Thompson's attempt to connect this realism and universalism with European thought he considers as weak criticism. He argues that she risks weakening her own

position by formulating herself a universalizing claim in her attempt to reject universalizing claims.

In response to Thompson's quest for an opening up of sound studies to a broader range of racial perspectives and from here to racial justice, Cox points out he references the work of ontologists and sonic ontologists of color. He argues that the notion of 'sound-as-flux' has the potential to serve as a model integrating sonic ontology and auditory culture in a non-exclusive, and constructive way. Furthermore, he argues that a 'sonic ontology' can provide a philosophical account of the 'sonic flux' in general, and auditory culture studies can bring in more situated knowledge of sonic flows through their relation to linguistic, musical, and social communities. For him, this might facilitate interdisciplinary possibilities.

In 2016, Goh and Thompson initiated *Sonic Cyberfeminisms*, an on-going project bringing together artists, musicians, DJ's and writers working around intersectional feminist praxis and the legacies of cyberfeminism. This collective addresses questions of social justice in the domains of sound, gender, and technology and, through the development of critical cultural work. In a contribution to the CTM festival magazine, Goh (2014) discusses the potential of confronting Goodman's work on sonic warfare with Parisi's thinking on micro-feminine warfare she considers as a critique on binary modes of thought. Goh argues that 'micro-femine sonic warfare' is not only capable of demonstrating how sound can be used as a weapon in a literal sense, but also how it operates on a micro level vibrational force where bodies are affecting each other. According to her, the definition of 'unsound' as 'sounds not-yet-heard', holds a potential for linking the 'cyber' of cybernetics, cyberfeminism and sonic cyberfeminism. Referring to the work of Parisi, she warns for the risk of losing the woman in the machine and from here she argues for a new conception of 'feminine desire'. Building on Goodman 's argument that "if we subtract the level of human perception, everything moves" (as cited in Goh, 2014,

p. 58), Goh argues that “it is less a question of what micro-feminine warfare might sound like, and more a question of what it moves” (2014, p. 58).

Goh's criticism of Cox's sonic materialism and suggestion for a sonic cyberfeminism informed the definition of performative sonic material research approach both via the conception of sonic matter as inextricably linked to material-discursive relations as well as via her argument for an integration of knowing and being plus ethics. Building on Barad and Haraway, Goh not only shows how to conceptualize the social and sonic material as ontologically entangled and how to rethink the subject-object relationship in sonic knowledge production but also how to explore and account for this entanglement and relationship via epistemological practices.

In what follows, I will explore possible routes and directions for a relational and performative sonic material research approach in planning and design research by reviewing the work of researchers who aim to address interactions between sound, conflict or violence and the city. Inspired by Graham, Goodman Eshun’s and Goh’s analyses of urban space, I became interested in the study of affective soundspheres generated as sonic spatiality by music's interaction with space, sound systems and bodies, and the possibility of pre-emptive virtual sound spaces, infiltrating real spaces with audio hallucinations via the insertion of rhythmic components as provocation or affective projectile.

2.2.3 Revisiting research addressing the position and role of sound in spatio-temporal configurations producing geographies of affect

A territorial orientation of planning and design research doesn’t undo the possibility to think relationally on the position and role of sound and vibrations in urban planning and design. In this section, I will explore possible ways of

implementing sonic materialism in planning and design research. To arrive at a framework for planning and design research on spatio-temporal configurations co-generating affective sound spheres, I will examine conceptual tools from scholars who use a relational performative sonic material approach in their study of urban space. I begin this part of the literature study with a discussion on Assemblage Theory and its relation to Actor Network Theory.

2.2.3.1 ANT, assemblage thinking and new materialism

An interest in the study of the co-generation of affective spheres as sonic spatiality, motivated a study of assemblage thinking of urban space. Building on the work of Deleuze and Guattari (1983; 1987), assemblage thinking is primarily concerned with what assemblages do, what they produce and more specifically, with their micropolitical consequences for bodies and for social formations (Müller, 2015). Affect or rather the 'flow of affect within assemblages' are conceived as the means by which lives, societies and events unfold. Assemblage micropolitics are thought of as a dynamic process shaped by 'territorialization' and 'deterritorialization'; they relate to the capacities of bodies and relations within assemblages. From this perspective an assemblage is conceived as a dynamic, flexible formation that can include a diverse array of elements, human but also non-human, natural but also technical. Assemblage theory uses system perspectives for dealing with complexity. This can be interpreted as an opening of research to the study of fluid conceptions of space, structures, or territory, including close and distant relations. Seemingly contradictory and resistant to fixed form, assemblage studies expose relations of power, politics, and space from a more processual, socio-material perspective.

Professor of Urban Geography Colin McFarlane (2011) identifies three modes of implementing assemblage thinking in critical urbanism: firstly, an understanding of 'the actual and the possible', opening research to existing power relations and the capacity of new connections and relations to transform dominant relations;

secondly, grasping the interaction between social and material actors; and thirdly, an introduction to the 'imaginary of cosmopolitanism' for dealing with difference.

In line with assemblage theory, ANT offers a relational framework for research on the interconnectedness of natural and social worlds, the relationships between human and non-human actors within a network. Urban space is conceived as a complex system characterized by (in)stability (Latour, 2007). ANT inspires different modes of urban analysis incorporating multiple actors, non-human as well as human, and different positions and experiences (Farias & Bender, 2010). Taking this theoretical perspective, socio-technical relationships seem to be everywhere, not just in terms of technology, but also in terms of law and politics. Research on these power dynamics seem to produce knowledge on how to enact change within the relations involved.

Acknowledging the differences, similarities and possible positive interaction between ANT and Assemblage thinking, Müller and Schur (2016) point out the potential of combining the two theories. They recognize how both combine a relational perspective on the world with a topological view of space, underscoring the importance of the socio-material, a world produced out of associations of human and non-human elements. Comparing ANT with assemblage thinking, Müller and Schur note how ANT introduces an articulated spatial sensitivity by referring to regions, scales, distance, and topologies, where in assemblage thinking they find a rather implicit spatial focus. According to them, assemblage theory confronts ANT with spatial conceptions they associate with vaguely defined boundaries and mutating topologies. They refer to Graham (in Müller and Schur, 2016) who argues that because Latour is not interested in flux and flow apart from some specific entities, his theory must be interpreted as different from Deleuze's work. But in post-1999 ANT they found an alignment of ANT with assemblage theory. They consider ANT's conception of fluid spatiality as similar to assemblage

theory's incomplete and shifting associations without disruption, breaks and discontinuities. They point out how ANT- based research seems to be more oriented towards a metaphysics of presence, 'entities' of an actor-network, and the production of entities out of the relations they embody, with assemblage thinking being more of a metaphysics of potentialities exposing the capacities of entities and relations of exteriority. Philosopher Delanda (2006), whose work has become synonymous with 'new materialism', reflects upon these relations of exteriority or 'the outside' as the defining characteristic of assemblages.

According to Müller and Schur, ANT does not sufficiently address human and non-human bodies' capacities to affect and to be affected. Latour theorizes the body, as part of the relations that define it and that never exceeds them, where Deleuze-Guattari understand affect as a 'becoming', together with the assemblage, not as its result. Deleuze and Guattari (1983) argue that 'desire' allows for the 'coalescence of assemblages' and is therefore crucial to assemblage thinking. Their notion of 'assemblage' emerges from the earlier notion of 'desiring machines'. For them, desire can be stabilizing as well as destabilizing. Assemblage theoretical work is much oriented to the analysis of the production of desire. Thinking of desire in terms of active co-constituent rather than a consequence demands a bigger appreciation of a body's capacity to affect and to be affected. Assemblage thinking introduces desire as a driving force of 'assembling', without structuration by larger structural forces. Müller and Schur conclude that ANT can be of relevance for assemblage thinking because of its spatial exposure of how relationships are coalesced and stabilized and vice versa, and that assemblage thinking can inspire ANT to study the role of affect and desire in the construction of human non-human relations.

Exploring the implementation of conceptions of sonic materialism in planning and design research, ANT seems to be a valuable addition to assemblage thinking.

Expanding on the critiques to soundscape studies and the phenomenology of sonic experience discussed in the previous section, I argue for situating sonic experience in relation to the dynamic co-constitution of urban space and its multiplicity of constituent elements, both human and non-human, material and immaterial, with each element characterized by their specific linkages and their own capacity to affect and be affected. This involves seeking a decentralized anthropocentric listening and a more dynamic conception of space.

Thinking about space in terms of transformation and relations, nevertheless, forces a conception of spatiality in terms of 'temporary permanence, a particular association of people, things, and ideas that allows for new connections and transformation'. For the study of the co-generation of affective sound spheres and the mediations present in human sonic experience of this material system, I need a description of both the mechanisms explaining how the system was produced as well as a description of its capacity to mediate sonic experience. From an interest in the way material agencies structure social and ecological relations and therefore also sonic experience, in the following section, I will review Bryant's (2014) argument to study both non-human agencies and signifying agencies such as discourses and narratives.

2.2.3.2 Machinic Assemblages and Distributive Agency

Professor of Philosophy Levi Bryant (2014) argues for an onto-cartographical approach in defense of a materialism he describes as "unabashedly naïve" (p. 6). According to Bryant: "the world is composed of physical things such as trees, rocks, planets, stars, wombats, and automobiles, that thought and concepts only exist in brains, on paper, and in computer data banks, and the ideas can only be transmitted through physical media such as fiber optic cables, smoke signals, oxygen rich atmospheres, and so on" (p. 6). The ontology he defends,

acknowledges the existence of discrete, emergent entities, he calls ‘machines.’ He aims to emphasize their dynamic mode of operation that is built around the production of output from input. Assuming non-human machines are real actors, having real powers which cannot be grasped via research on their representations or the way they are talked about, Bryant argues for a post-human theory of social assemblages. Introducing an onto-cartography for explaining how machines operate as media for other machines, he searches to lay out an ontological foundation for political action.

Media he understands as any relation between machines rather than something that relates to the five human senses. Building on Latour’s use of ‘recalcitrance’, Bryant defines the medium as both that which operates as an obstacle for another machine, and as that which opens up the machine to particular possibilities of action. Here, ‘gravity’ is understood as the way in which one machine mediates the structural openness, movement and becoming of another machine. Bryant uses the term ‘gravity’ to avoid any anthropocentrism.

He proposes a mapping of symmetric and asymmetric gravitational relations between machines that he conceives as the result of a dynamic mediation between machines. A central objective of onto-cartography is to produce maps that can increase the capacity to accelerate gravitational transformation. Understanding subjects as transitory ‘roles’ defined ‘functionally’ in particular circumstances, not necessarily human, and distinct from ‘agents’, Bryant argues ‘subjects’ play a key role in the movements, becomings, and local manifestations taking place within a world.

From this relational perspective, the question of how a subject relates to a world is not important, but rather how subjects interrelate machines in a world. The mapping of dynamic transit points realized by subjects, is thought to contribute to

a dynamic perspective on assemblages or networks. To grasp the dynamics of social assemblages, including the ruptures that set things in motion, this geophilosophy concentrates on the 'event' as the becoming of a subject or quasi-object bringing other machines into being. A becoming of a machine is for Bryant not the same as local manifestation because it involves changing 'capacity'. Bryant calls this becoming an event when a big part of an assemblage is in the process of becoming. According to him, a focus on events enables the study of vectors directing the development of a particular assemblage or world.

Bryant takes the Industrial Revolution as an example for illustrating the 'unfolding of an event' and explains how the invention of the steam engine can be identified as a transitory subject gradually penetrating the field of established technologies, social relations, urban structures, and the natural environment, hereby causing a slowly unfolding of events as a process of reconfiguration. He points out how events seldom occur suddenly and brutally, and are also not necessarily located in space-time, but often take their time to find their way through an assemblage before the transformation gets noticed.

2.2.3.3 Conceptual Tools for Planning and Design Research

In what follows, I will discuss different studies implementing ecological approaches in their study of urban sonic spatiality. In doing so, I will introduce several conceptual tools whose potential for planning and design research I have explored in the case study. I will review studies that concentrate respectively on competing sonorous practices, acoustic territories, ambient mechanical noise as fundamentally 'peopled' vibration, design for sonic revolutions as recovery of an alternative structure of feeling, sonic demarcation and terraformation.

Urban Sound Space as the Outcome of Competing Sonorous Practices

Exploring a relational perspective on urban space, socio-technical relationships seem to appear everywhere, not just in terms of technology, but also in terms of politics and law. For their research on the constitution and transformation of urban space, Rodríguez, I., García, N., & Lopez Gomez, D. (2009) deploy an analytical approach for linking the spatial organization of urban space with sonorous forms of political action. Pointing out the difficulty of treating sound as a constitutive element of urban space, and sociology's lack of interest in sound as a medium for research on social behavior, Rodríguez, et al. (2009) argue for an opening up of urban research to a complex relational approach to urban space for the study of its 'urban sound space'. To illustrate the possibilities of their expanded approach, they present the outcome of their case study on the cacerolada in Barcelona, 2007.

Constructing a sonic perspective on transformative urban space, Rodríguez, et al. focus on the "the more ephemeral and shifting elements of urban life" (p. 181). They search to identify the spatialities and collectivities rising from different competing sonorous practices co-defining urban space. Exploring ANT's notions of 'commotion- and conviction-based techno politics' for their analysis of sonorous practices, they demonstrate how an unravelling of the tension between the two types, can expose their jointly defining of urban space.

Another concept around which Rodríguez, et al. structure their analytical approach for linking the spatial organization of space with sonorous forms of political action, is the concept of 'soundsphere'. This conception is inspired by Sloterdijk's (as cited in Rodríguez, et al. 2010) conception of 'spheres.' For them, the soundsphere forms a psychoacoustic link with urban life, connecting people actively to urban transformation: people are shaping and being shaped by soundspheres. From this perspective they understand how 'sonic experience' co-constitutes urban limits

and collectives. Referring to the assemblage approach of Deleuze and Guattari, they criticize a 'formal' approach to soundspheres, considering it as too narrow. Considering the construction of soundspheres as sonorous operations, exposing concrete spatiality as well as collectivity, they argue for a political interpretation of these operations, and they suggest concentrating on the emergence of what they define as 'a new political tonality' and new 'sonorous technologies' they observe being used in the context of demonstrations (p. 186). For Rodríguez, et al., sound is not just a medium for the expression of meanings. In line with Goodman (2009), they understand it as a medium producing affection and shaping subjects, both collectively and individually.

Actor-Network-Theory inspires an interpretation of the 'technological' as a way of relating to each other, what Latour (as cited in Rodríguez, et al. 2009) terms a 'fold'. Rodríguez, et al. point out how the output of a sound system in a demonstration depends on the existence of multiple possible paths making possible the articulation of different elements. The 'fold' in this case is the mobile sound system that by its playing of sound, interconnects and defines different elements. They identify the articulation of these elements in the outlining of the demonstration, delimiting and determining what and who is excluded or included. According to them, this outlining primarily concerns the spatiality of a demonstration which they consider as fluid and quite uncontrollable. Structuring their ecological approach around the non-anthropocentric notions of 'urban sound space', 'soundsphere' and 'fold', they argue for a redefinition of politics.

Understanding urban public space as "heterogeneous multiplicity composed by a myriad of soundspheres that are both overlapping, repelling, or reinforcing each other" (p. 191), Rodríguez, et al. argue that all sonorous practices can be identified as technopolitical practices shaping specific spatialities and collectivities. According to them their approach reveals how we can consider the urban as the outcome of

a tension between sonorous techno politics of conviction and commotion they interpret as a conflict between planning approaches based upon an understanding of the city as an "abstract and ordered infrastructure, approaching it as a site that needs to be organized or planned", and, respectively, practices approaching the city as an "immanent and deterritorialized space" (p. 191).

Acoustic Territories

In *Acoustic Territories*, Brandon Labelle (2010) argues that sound is a relevant model for conceiving and experiencing the contemporary condition of urban space. Auditory knowledge he considers as a radical epistemological force, unfolding as a spatial temporal event with sound introducing research to a field of interaction, of mutuality and sharing, exposing micro-geographies in the moment. He explores the 'sonic' as a particular figure participating and navigating a sphere of cultural and social habits. From this perspective, connecting through sound becomes a spatial formation, an occupation.

A mapping of the 'soundways' of contemporary urban environments, outlines a topography of auditory life by carving out a path through the city, from the underground infrastructure, through the home, from here to the public space of streets and neighborhoods, driving cars and the infrastructure of transmission towers communicating through air waves. Using a relational perspective on urban space, Labelle explores how sound manifests itself from within different auditory systems, in particular locations, in everyday life and cultural projects. In a similar way to the approach of Rodríguez, et al., Labelle elaborates a more dynamic conception of acoustic territories, conceiving them as the outcome of differing forces, characterized by multiplicity.

Like Augoyard, Torgue and their colleagues at CRESSON (2006), Eshun (1998),

Goodman (2009), and Rodríguez, et al. (2010), Labelle shows interest in 'performative' relations between sound and the city. He considers this type of relationality as inherent to urban spatiality. Throughout his research on acoustic territories, he explores how sound acts as a medium for personal and social transformation. This brings him to argue for an expanded perspective on how sound conditions and contours subjectivity. Referencing Augoyard and Torgue, Labelle suggests a conception of the city as 'a particular sonic geography', exposing sound's disintegrative and reconfigurative force highlighting its spatial and temporal particularities.

Exploring a 'sonic materialism' as theoretical framework and 'listening' as its research tool, Labelle elaborates a 'relational geography' exposing fluid, emotional, contentious relations, generating a certain type of knowledge moving inside and outside the body. Via his research on micro epistemologies and everyday terrains of aural experience, he exposes the potential of a conception of sound as movement and listening as provocative and relational. In the problematization of 'sound as nuisance' or disturbance, he finds an opening for an ethical encounter, towards acts of responsibility and the becoming of a subject. Conceiving acoustics as relational exchange, rather than sounds contouring a particular spatial situation, he addresses noise's capacity to actively install 'acoustic community'.

According to Labelle, we cannot reduce 'noise' to 'environmental disturbance,' and he argues for a more constructive, ethical noise approach. Confronting ambient noise challenges and noise policy strategies with a more positive and poetical conception of acoustic space, Labelle aims to expose an auditory tension from where he elaborates further on noise as evidence and occasional catalyst of dynamic cultural change that is working through an urban topography. This brings him to rethink acoustic space in relation to processes of 'acoustic territorialization' in which the disintegration and reconfiguration of space involves a political process.

From an understanding of acoustic territories as both specifically and multiple, linked to urban space and experiences and open to participation and the idea of sound as shared property open to multiple claims, Labelle argues for both an associative and relational sonic approach. He deals with acoustic space's ambiguity, by turning it into a productive form of tension. In the associative networking of sound, he identifies possible points of contact and appropriation, including an opening to the participation of marginalized groups or what he identifies as 'the excluded'. This relational sonic spatial conception moves him further away from a questioning of noise as a problem of decibel levels toward a wider exploration questioning the meaning of noise in relation to specific contexts and particular communities. He locates this relational sonic approach both in the material, the physicality of sound, and the cultural, the social and the personal experience of sound.

In a more recent work Labelle further elaborates on what he describes as 'critical acoustics', questioning acoustics not only as a property of space, nor as a knowledge within the field of physics, but equally as a political question. In *Acoustic Justice* (2021) he discusses how acoustic norms give form to experiences and capacities of listening and sociality within specific environments. Criticizing dominant acoustic norms, Labelle argues for a 'poetic ecology of resonance'. Exploring acoustics as a performative arena, he argues for a re-orientation of acoustic practices, an expansion that may even exceed the social. Labelle explores different acoustic practices and considers tools that can facilitate (re)negotiation or address questions of (not) belonging. Researching one's capacity to control the dominant tonalities of specific situations, Labelle aims to get a better idea of one's 'freedom to listen'. Therefore, he also explores 'listening' as a privileged means for expressing empathy, compassion, and 'social attunement'. Labelle puts forward 'acoustic justice' as a necessary framework for engagement in struggles over 'the right to speak and to be heard', which, following a materialistic and planetary

orientation, is to be understood as non-anthropocentric.

Inspired by Labelle's suggestion for a 'critical acoustics' and Bryant's reflections on the 'unfolding of an event' and the steam engine as transitory subject, in what follows, I will discuss David Novak's (2014) study on the relation between the introduction of the train and the unfolding of a public sonic experience.

Ambient Mechanical Noise as Fundamentally 'Peopled' Vibration

David Novak (2014) studies how the mechanical noise of the modern train, he defines as the "apparatus of an obstacle," has become an important part of Japanese culture. More specifically, he questions how the sensory and social environments of trains has become a most recognizable feature of the modern Japanese 'soundscape'. Via Walter Benjamin (as cited in Novak, 2014) he argues for a machinic understanding of urban sound. Describing the sounds of mechanized transport as "the signature tunes of modern cities," Benjamin notes how these mechanical sounds, "remind us the city is a sort of machine" (p. 29). Schivelbusch (as cited in Novak, 2014) describes how the introduction of the train became a structuring project of 'modern subjectivity'. Novak explains how the arrival of the train (re-)structured social life by making it calculable, 'annihilated' space and time in what he describes as "a decontextualized and blurred 'landscape'" (p. 29). The introduction of the train coincided with an expansion and rearrangement of urban space, connecting, and annexing remote local spaces, followed by a relocation of populations to cities, and a new human and non-human experience of travelling on and around the tracks. Questioning the impact of modernization in Japan, Novak argues, that the sensory and social environment of trains can be interpreted as an important medium of the public experience of urban modernization on a global scale.

While acknowledging that the cultural symbolism of train infrastructure touches on the uncertainty of contemporary Japanese society, Novak explains how the local train reflects common aspects of public space as well, with a common sensory experience offering users a sense of cultural intimacy. He observes how the technological environment of a train takes part in urban life as a 'domestic-but-urban-space', offering a kind of public contemplation of a balanced mechanical and human sensory environment, which passengers experience as natural. Novak argues that train sounds, however omnipresent and global they may be, can also operate as aural landmarks of a particular locality, even at the micro level of cultural intimacy.

In *Confronting Silence*, post-war composer Takemitsu (as cited in Novak, 2014) exposes how in Japanese culture, 'noise' and 'silence' are interrelated sensory experiences, located on the edges of a broad spectrum of audible environmental 'soundings' manifesting themselves through listening. Addressing Takemitsu's interest for technological noise on top of his interest for environmental silence, Novak explains how the compositional work of Takemitsu exposes a social awareness of ambient mechanical noise's affective qualities. According to Novak, composer Takemitsu understands noise as a "fundamentally 'peopled' vibration" (p. 31). Composing with the machinic sounds of trains, Takemitsu understands that these sounds, which he considers as being constitutive to the shared experience of technological space in which people find themselves, not only have a musical value, but also that their use in compositions feeds back into that stream of sounds by adding meaning to them.

For a continued reflection on the structuring of public sonic experience from a perspective on machinic assemblages, in what follows, I will review Moreno's analysis of Detroit techno music in relation to global processes of urbanization.

Design for Sonic Revolution

From an interest in urban crisis, Louis Moreno (2014) questions the possibility of alternative 'structures of feeling' as part of a search for alternative understandings and imaginations of what he understands as a contemporary global urban condition. Pointing out how architecture, metropolitan development, and the materialization of 'dead labor' in the abandoned infrastructures and buildings, operate as stereotypes of the contemporary city subjected to globalization by their respectively containment of dominant, emergent, and residual moments in global urbanization, concentrating on Detroit, he interrogates the possibility of resisting the grip of a dominating "axis of architecture and musical degeneration" (p. 100). Starting with a historical reading of Detroit's urban political a musical history, Moreno explores possible strategies for a recovery of what he describes as an alternative 'structure of feeling' (p. 101).

Going back to early 20th century Detroit, with Henry Ford's instalment of a moving assembly, Moreno explains how the instalment of an assembly line as a human circuit resulted in a complex expression of 'alienation', introducing an industrial but geographic specific structure of feeling: "an experience of lives dispossessed by an urbanizing mode of American accumulation" (p. 102). He acknowledges how in response to this sense of alienation, people started to explore music as a medium and resource for adapting their lived experience under Fordism. Referring to Ellison's (as cited in Moreno, 2014) review of Leroi Jones work on the music of the blues, Moreno explains how blues can be interpret as a reflective tradition offering the Afro-Americans the resources for constructing themselves "in the world of sound" in response to what they experienced as the "denial of social justice" (p. 102).

Reflecting upon the role of Detroit's revolutionary movements in the 1960's and

1970's crisis of Fordism, Moreno argues that the spatial shift towards 'Post Fordism', ruled out the imagination and emergence of alternative configurations of socio-spatial power. In response to the liquidation of alternative images of urban future and the seemingly impossibility of an alternative organization of society, a response based on sonic form has unfolded. Like Goodman, Moreno refers to Eshun (as cited in Moreno, 2014) who describes this as an 'epistemological break' in black music: exploring the potential of the recording studio, re- combining and mixing, both African, American, and European styles, traditions and techniques, musicians started to assemble 'new sound worlds' making not only a reflection upon history possible but also 'a desire for life' via its projection into the future.

Moreno points out how in 1981, Detroit-based elektro band Cybotron, inspired by the synthetic futuristic experiments of P-Funk and Kraftwerk, engages with Detroit's socio-economic reality, through the creation of a 'techno sound', different, rather alien, to the anthropocentric traditions of blues music. The introduction of machines, synthetic sounds opens urban imagination for modulated space time experiences: 'cognitive estrangement.' This brings him to associate the work of Cybotron with the conception of a different form of urban space: "a landscape filled with radical possibility" (p. 105).

Acknowledging the global spread of techno sound and its local articulations, Moreno stresses how the spatial dimension of Detroit- based techno evolved in a unique way. He explains how Detroit techno is unique not only because of the geographical condition but also because of its unique approach to urban sound. Channeling Detroit's sonic culture, materialized in drum machines, sequencers, and synthesizers, combined with the continuous production of 12-inch records, the 2nd generation techno collective Underground Resistance, launched its project for revolutionary change. Searching for a deterritorialization of the 'urban regeneration myth', UR's project follows a multi-scalar process: from music studios

via cities to worlds, a global opening up of industrial landscapes to the infectious vibrancy of Detroit's 'Deep Space.'

Ursula Le Guin's (1974, in Moreno, 2014) notion of the 'ansible', inspires him to imagine Detroit Techno as a tool for utopian science fiction, operating as a portal to a multiplicity of worlds and life forms. Referring to UR's 'designs for sonic revolutions', Robert Hood's Detroit: One Circle (1996) and the socio-spatial basis of the revolutionary movements of 1960's and 1970's, brings Moreno to argue that Detroit Techno "converts Detroit into a structure of revolutionary feeling" (p. 106).

In opposition to the dominant image of Detroit as a city of decay with no people and no future, according to Moreno, Detroit Techno introduces a feeling of anxiety he associates with the fear of losing the future. It is precisely in this instalment of fear that he locates the possibility of an alternative future shock: "the recovery of a utopian impulse that still finds in technology and the urban the socio-spatial resources of liberation" (p. 106). He concludes by thinking that utopian imagination has the power to disrupt, to cause cognitive disorientation which he sees as a path towards an open sense of history. Referring to the work of Detroit techno pioneers, he points out how sound can play a revolutionary role in this.

Expanding the research to possible connections between techno music, structuring of public sonic experience and warfare, in what follows, I zoom in on a text reflecting upon an interview with one of the Detroit techno pioneers suggesting techno's connection with warfare.

Sonic Demarcation

In a recent interview with Rubin (as cited in Goodman, et al., 2019), Rik Davis, techno pioneer who formed with Juan Atkinson the group Cybotron, describes his

experiences as a rifleman in the Vietnam War. He talks about how he, as a young man from Detroit, experienced the Vietnam jungle as completely alien territory: “There was nothing in that jungle but rock, apes, and tigers. Everything in it was poisonous” (as cited in Goodman, et al., 2019, p. 270). Davis' unit was in charge of the security of one of the most expansive sonic psychological operations (Psyops) the US military used in that war.

In their text on the use of sonic psychological warfare during the Vietnam War, Goodman, et al. (2019) clarify that Davis’ unit concentrated on the protection of a US military project. Goodman et al. describe how in the late 1960’s US military experimented with sound to induce fear and anxiety within territory of the enemy. Early experiments using samples of amplified ghostly voices were replaced by more complex programs using multilayer composition techniques, combining weird and eerie aural textures with obscure sound effects and samples of human voices and animals roaring. By use of speakers hanging on the sides of helicopters, the montages were dropped from the air into hostile territory. Goodman et al. explain how this sonic warfare technique needed some time to work through, “as it slowly diminished resistance by infiltrating every psychological pore of the enemy and sapping their will to resist” (as cited in Goodman, et al., 2019, p. 272).

Comparing them with a more recent US military use of surround-sound speaker system, they point out how the Vietnam sonic air raids, by use of a more random nature of the scattered sound assemblages, reinforced the idea of “’the restless’ being trapped in an environment unsuited to their non-corporeal status. From on high, the sonic demarcation, enacted, was more an audio erasure of the boundary between the living and the dead, rendering the absent distressingly present” (p. 272).

Moving back to western cities of the early 21st century, In the following section I

will look at the work of researchers problematizing the coexistence of processes of spatial-segregation, demarcation, and audio erasure marking a dynamic urban environment. I will review White's recently published work on the East London Grime scene as a site of emancipatory disruption together with De Jong and Schuilenburg's analysis of Grime music.

Hyper-local Demarcation

In her book *Terraformed: Young Black Lives in the Inner City*, published at Repeater Books, Joy White (2020) analyses how austerity, gentrification and structural racism affect the lives of young black inhabitants of an inner-city London neighborhood. Reflecting upon the East London Grime Scene as a site of emancipatory disruption, White problematizes how urban planners reinforce a spatial segregation along economic and urban lines. She uses ethnography to exposes how urban transformations, policy planning leads to other sounds, a different sonic backdrop to urban space. She notes how planning projects are more likely to render the urban music of the young as "problematic" and are contributing to the exclusion of creative and experimental sounds in the public space, replacing them with sanitized sounds, played at low volume without political urgency. White builds a relational perspective and gives context to a sense of nihilism she identifies in the music of black youth.

White problematizes regeneration and not gentrification. For her, this involves more than residential rehabilitation. According to White, displacement takes place in residential and social places via the enactment of exclusion in daily life. Regeneration often includes a reframing which according to White, causes shifts in cultural valorizations. Building on Fanon's Concerning Violence (as cited in White, 2020), White understands the city as divided. According to her this divide goes beyond physical borders, fences, and enclaves. She points at the increased and

unequal use of surveillance policies and technologies controlling who has access and who has not, “bringing violence into the home and mind” (p. 36). Connecting the increase in austerity measures to youth violence, she problematizes how Black youth of marginalized communities “experience symbolic violence, slow violence, and structures of violence as an everyday experience, as a standard component of their daily lives that as they are under surveillance and rendered ‘out of place “(p. 36). She problematizes how black inner-city youth are often on the receiving end of initiatives and processes of austerity measures and argues that the negative labeling of youth socializing and hanging out in transformative public space, facilitates a snap entry into the criminal justice system.

For the construction of a relational framework, she draws on Waquant’s (as cited in White, 2020) concept of ‘advanced marginality’, and Foucault’s theories on disciplinary techniques of power including bodily control at the individual level, on knowledge procedures defining community and architectural space and subconscious submission to state control and via Foucault and Miskowiec’s work on the structuring of a site by a ‘set of relations.’ Concentrating on the experience of Black youth from marginalized communities she also builds on Christina Sharpe’s (as cited in White, 2020) concept of ‘the wake’ for addressing subjection and resistance as “a historical and contemporary terror filtered, in the UK through racism and visibly hostile environment” (p. 37). Interested in a better understanding of the distribution of power and resources and the local operation of what she defines as racialized narratives of economics, she proposes ‘hyper-local demarcation’ as definitive framework for the study of the entanglement of communities, legislation, urban planning and the ‘sonic landscape’ at street-level affecting the lives of Black inner-city youth.

Taking this relational perspective, White problematizes the removal of grime and rap videos from *YouTube* by the local council of Newham at the time of the London

2012 Olympics. Analyzing grime and rap music videos, White identifies how making music enables inner-city Black youth to resist in multiple ways, the marginal roles mapped out for them. She acknowledges how Black young musicians, in making music, carve out an urban space for themselves. And according to White, this positioning happens lyrically as well as sonically. For her, where and how music is made, reflects the divergent spatialities of inner-city environments. Focusing on Grime, she explains how its beats can be interpreted in multiple ways, as a sonic representation of the spaces occupied by its creators.

In *Mediapolis*, De Jong and Schuilenburg (2006) point out how Grime Music combines different sonic qualities for the construction of what they describe as 'sonic spatiality'. They identify two important developments in music production they associate with the popularization of audio reproduction technology: firstly, it became easier to assign spatial qualities to sound. Popular music also plays with the introduction of other spaces. And secondly, acknowledging the bodily response to sound as affect, they point out how these 'sampledic spatialities', assemble individual listeners in what they describe as 'sonic communities.' According to De Jong and Schuilenburg, it is impossible to stay neutral within the gravitational fields of sampled sounds. Sonic spatialities they describe as spaces where notions such as 'distance' and 'opposition' do not matter. Building on Sloterdijk's conception of 'spheres', they position the listener at the centre of a 360° sphere composed of pulses, tonalities, melodies, and beats. In line with Goodman (2009), they don't think of these 'sampledic spatialities', as static but consider them as dynamic acoustics demarcated by soft boundaries. They understand sonic spatiality as an "intensity" that traverses like an affect through every matter, engaging and moving the listener.

De Jong and Schuilenburg (2006) situate Grime Music on what Simon Reynolds (2013) named 'The Hardcore Continuum' for describing the linear evolution of

British dance music that started with a mutation of rave at the beginning of the 1990s. The UK Hardcore Continuum comprises the relentless sonic mutation of sampledelic dance music in its multiple variations. Grime music is known for its fast, syncopated breakbeats, often featuring an aggressive or jagged electronic sound. Grime MC's take an important position in the music, mostly by verbalizing gritty images of the urban environment. Comparing Grime with Dubstep, Reynolds (2010) defines Grime as "verbose, articulate, aggressive and manic", versus dubstep he describes as "meditational, subdued, mute and atmospheric". De Jong and Schuilenburg (2006) explain how the Grime MC disrupts the trance experience of rave music by interfering with the machinic sounds.

De Jong and Schuilenburg point out how Grime Music uses the machinic sound samples from video games, gun shots, but also ringtones of mobile phones to trigger an atmosphere of fear. They consider the sounds of video games and gun shots as symbolic for growing up in East London's environment, which includes video gaming but also violence and gunfights. Comparing Grime Music with Pierre Schaeffer's' Musique Concrète, they don't think of Grime as a literal interpretation of its urban environment. According to them, in its representation of urban space, Grime demonstrates that these machinic sounds are part of the urban environment, interacting with its physical, social, cultural, and environmental constellations.

White's ethnography shows how the contemporary music scene in a London neighborhood like Forrest Gate, particularly for black youth from marginalized communities, operates as a "place of emancipatory disruption," a place distinct from the economic landscape that she argues is characterized by inequality and racism. She explains how music plays an important role in place making and sense of belonging, the creation of identity among Black youth and points out how young people search to claim an area, mark territories, through referencing particular

places in their lyrics and in their videos. Moreover, she explains how the musical practice of Black diaspora operates as a platform connecting young people to their cultural heritage. In a similar way as Moreno, White refers to Paul Gilroy's proposal for an 'alternative structure of feeling' for dealing with unjust conditions, possibly offering a way out, into another 'order' or another way of 'being'. Both music making and listening she understands as elements of a cultural, socio-economic, and political process, resistant, enabling and fun, despite on-going regeneration processes.

In a similar way to Eshun, Goodman and Moreno, White's study focuses on the interplay between shifting urban conditions on the one hand, and the dynamic interrelationships between music and place on the other, and more specifically on how displacement or urban crisis become part of music. I consider White's ethnography a valuable account of how young people who, often due to lack of resources, appropriated green spaces in the city to play and be creative, ended up making music that became a worldwide phenomenon, and are still being labelled as problematic, as objects to be feared. Moreover, her way of addressing how policy makers and legislators now structure their planning and controlling of public space around an 'imagined connection' between youth as a dangerous period and the streets as dangerous places seems to be of relevance for the Brussels context too. By showing how young people continue to meet and make music, albeit less so in public spaces, she presents an opening for the study of urban music scenes of inner-city youth as sites of emancipatory disruption.

2.3 Conclusion Relational, Performative Sonic Material Research Approach

The research attempts to engage in the contemporary discourse on sound in planning and design research by arguing for a deviant sonic planning approach open to criticism and a broadening of the space of urban sonic capabilities. By lacing together conceptual tools from different disciplines, I aim to develop an ontological positioning of a critical sonic planning and design approach. Given the Brussels context of a transformative railway space becoming a site of asymmetric warfare, I argue that planning and design research and practice concentrating on the greening of railway space cannot simply approach urban sound and vibrations as nuisance. Building on urban studies addressing urban conflict as contemporary urban violence and urban space as a site of warfare, a re-thinking of sound as vibrational affect in sound studies, and research projects exposing the mediation of sonic experience in urban and/or militarized space, I argue there is a need for the preservation and cultivation of a deviant and critical engagement with urban sound in planning and design research. The literature review that informed my ontological positioning of a sonic material research proceeds from three main themes. I reviewed studies which focus respectively on urban conflict as contemporary urban violence, sound as vibrational affect and socio-spatial-temporal configurations co-generating affective sound spheres.

Reviewing urban research addressing urban conflict, I studied different possible ways for addressing urban conflict in the Brussels context of old industrial railway space conversion to greenspace. Taking a relational perspective on urban conflict, Sassen (2010) points out how asymmetric warfare re-defines everyday urban space and circulations of the city as sites of warfare. Kaldor & Sassen (2020) associate the new wars with a targeting of civilians as a tool for political control of territories as well as with the emergence of ‘new identity politics’. They point out how also inner cities of the West are becoming sites of these ‘new wars’ and how contemporary

communication technology plays a crucial role in the recruitment, search for connectivity among disparate groups, the spreading of fear and the persistence of contemporary urban violence.

In their early accounts of the Paris attacks, also Badiou (2016) and Fisher (2016) problematize the experience of oppression. Badiou and Fisher reflect on contemporary urban violence from a perspective on subjectivity and alienation. Unlike Fisher, Badiou explains the Paris Attacks using a conception of 'contemporary fascism'. Acknowledging Daesh as a form of gangsterism, Fisher argues that belonging and fellowship was an important motivation for joining and not fascism. According to Fisher, Daesh can be interpreted as a 'cybergothic phenomenon' that is nothing more than an obstruction to a future that is already in the process of assembling itself. In line with Fisher, Kaldor & Sassen also draw attention to the emergence and role of new forms of belonging. In the 'commingling' of diverse urban struggles they situate a potential for the cultivation of a broader, and deeper push forward to a new normative order.

A concern for the installation of threat and fear in urban space, motivated a move to the ontological level of affect. I reviewed the work of theorists addressing interactions between the military and the city, from a focus on urbanism, surveillance infrastructure and popular culture. Graham's (2011) introduction to 'new military urbanism' offered conceptual tools for the study of militarization and securitization embedded in the urban fabric. Exploring an affective assemblage thinking of urban violence in urban studies, Pavoni and Tulumello (2018) problematize the focus on 'comfort'. By addressing how this focus sums up well the relation between the socio-historical entanglement of violence, security, and urbanization and their material and affective actualization in the city. In their criticism of actual modi of control, Parisi and Goodman propose an affective rather than an emotional conception of fear with power following the rule of the pre-

emptive attack. The threat of nano-terrorism they associate with the exposure of human evolution to matter-level engineering or nano-modulation.

In his theoretical work on sonic warfare, Goodman (2009) argues for a non-anthropocentric conception of sonic experience immersed in a wider field of power. Introducing the notion of 'unsound', he criticizes the use of sound systems in the modulation of affect and argues for a politics of frequency. Via the conception of a 'vibrational nexus' he brings in the idea of a non-anthropocentric topology of vibrational surfaces of potentials. Approaching this topology of vibrating surfaces outside of semiotic registers, he considers media themselves as being expressive. Building on late nineties work of Kodwo Eshun (1998), Goodman questions how rhythmic anarchitecture and the vortical bodies of the rhythmic crowd decompact space and time. He proposes to rethink weaponized sonic interventions as dynamic and to reconsider rhythmic components as affective projectiles. As for the study of the 'active mobilization of a population' of a rhythmic anarchitecture, he suggests focusing on its composition or "rhythmic consistency" and its ability to influence and to be influenced by other entities.

I consider Goodman's theoretical work on sonic warfare as a critical, constructive alternative for anthropocentric perspectives that are dominating debates on sound art, urbanism, and architecture. In line with Goodman, I argue that the study of interactions between the military and the city from a perspective on sound, requires a decentering of the experience or perception of human listener and an opening of planning and design research to material-affective analysis. Goodman's 'ontology of vibrational force' has been situated in a larger body of work addressing the role of sound and vibrations in the production of political geographies of affect.

From an interest in feminism criticism on sonic materialism theory in sound studies, I reviewed critical engagements with what Marie Thompson (2017) describes as the

‘ontological turn’ in sound studies. Problematizing how Goodman concentrates on virological methods or techniques, Robin James (2021) argues that despite situating his analysis of a politics of frequency at the level of ontology, his project still relies on an idealized social ontology. In her reaction to Cox's (2011) account of sonic materialism, Thompson argues that shared cultural practices and shared conceptual schema’s play a role in the perceived idea of a work’s ontological condition. In line with Harraway (as cited in Thompson, 2017), she warns for the position and role of a ‘modest’ white aurality and problematizes the structuring of Cox around the notion of ‘sound-as-flux’, associating it with a particular European philosophical lineage in sound studies and from here with whiteness, masculinity, and Eurocentrism. In a reaction to this critique, Cox argues that the notion of ‘sound-as-flux’ has the potential to serve as a model for integrating sonic ontology and auditory culture in a non-exclusive, and constructive way. Thompson’s fellow in sonic cyberfeminism Annie Goh, criticizes Cox’s account of sonic materialism by considering it as sonic naturalism. She associates his notion of ‘sound-in-itself’ with a persistence of dualistic divisions between language/culture/signification and matter, and ontology and epistemology. As an alternative, she proposes a model for sonic materialism crosscutting the dichotomy of mind-independent or mind-dependent material conceptions. In line with Barad (2007) and Harraway (1988), she argues for a ‘sounding situated knowledges’ structured around the notions of ‘embodiedness’ and ‘situatedness’ for addressing sonic matter as actively and inextricably involved in material-discursive relations.

Goh's criticism of Cox's sonic materialism and her suggestion for a sonic cyberfeminism informed the definition of relational, performative sonic material research approach both via the conception of sonic matter as inextricably linked to material-discursive relations as well as via her argument for an integration of knowing and being plus ethics. Drawing on the work of Barad and Haraway, Goh not only shows how to conceptualize the social and sonic material as ontologically

entangled and how to rethink the subject-object relationship in sonic knowledge production but also demonstrates how to explore and account for this entanglement and relationship in epistemological practice.

Rethinking the ontological and epistemic conditions for research on the position and role of urban sound in the transformation of railway spaces marked by contemporary urban violence into transitory and emancipatory sites, drawing on the above literature study on the turn to matter and affect in sound studies, I argue for the implementation of a relational, performative sonic material research approach that involves a simultaneous exploration of both a relational and performative ontology and epistemological practices.

Ontologically, I argue for the departure from a sonic spatial approach that relies on the idea of sonic spatiality as something that belongs to the individual listener, or as an absolute spatiality in need of definition. Questioning sonic spatiality as heterogeneous and intermittent contextually constituted materializations of sound, with each situation illuminating a slightly different perspective on spatial characteristics, the study of Goodman's notion of 'unsound' moved the research to the ontological level of vibrant matter. Via Goh's (2017) criticism of sonic materialism and her work in sonic cyberfeminism, I argue for an ontological position that not merely recasts the experience of the sonorous into a non-anthropocentric topology of vibrating surfaces with all matter as reservoirs of mediatic, non-binary modes of contamination but that is also intertwined with the epistemological and the ethical.

In line with Barad's (2007) 'ethico-onto-epistem-ology', Haraway's (1988) work on 'situated knowledges' and Annie Goh's (2017) 'sounding situated knowledges', I argue for a re-negotiation of the subject-object relation in sonic knowledge production. In search for a sonic approach structured around sonic experiences of

transformative railway space which operates as the scene of urban conflict, it seems interesting to focus on sonic experiences from positions of oppression. I argue not to start planning and design research from a position of oppression. Pointing out how all experiences are mediated, and all mediations are affected by power, Haraway (1988) argues that being part of an oppressed group does not automatically give one the capacity to articulate truth. In line with Thompson (2017) and Goh's (2017) criticism of Cox's sonic materialism, I argue that as a sonic researcher involved in urban planning and design research, it is important to criticize the idea of listening and sonic experience as an unmediated way of knowing the world and to reconsider the positioning of the sonic researcher, decisions about technology, and the use of recorded sounds as neutral documentation of acoustic events taking place in an urban context and this, also in terms of an ethical response.

To explain mediations of sonic experience in spatio-temporal configurations producing affective soundspheres, I argue it becomes necessary to address both the mechanisms explaining the performativity of urban sound space, the production of affective sound spheres and their capability to mediate sonic experience and demarcate urban space via their involvement in processes of acoustic territoriality. From an interest in research explaining how material agencies structure social and ecological relations and therefore also sonic experience, I discussed the implementation of assemblage thinking in critical urban research. I follow Bryant’s argument to study both human and non-human agencies and signifying agencies such as discourses and narratives. I studied the work of urban researchers who employ ecological thinking to account for the interactions between sound, conflict, and urban space. I reviewed urban studies conceptualizing sonic spatiality as the outcome of competing sonorous practices, acoustic territories, ambient mechanical noise as fundamentally ‘peopled’ vibration, design for sonic revolutions as recovery of an alternative structure of feeling, sonic

demarcation, and hyper local demarcation.

This brings me to the final part of this conclusion on the ontological grounding of sonic material research approach. From an interest in the role of sound and vibration in old industrial railway space conversion into greenspace, I argue for an opening up of sonic approaches in planning and design research to modes of disruptive and infectious listening or 'unhearing' and the notion of 'unplace.' In the following part, I will argue that practices of unhearing, via their embodiment of difference and alienation from the knowing subject, are capable of (re-)negotiating the subject-object relationship in sonic knowledge production. Revealing itself through the eerie experience of space triggered by sound and vibrations navigating real urban spaces, I suggest expanding sonic material planning and design research on the sound space and spheres of transformative railway space to include the study of 'unplace'. I take this notion from Mark Fisher (2014) who associated the use of 'unplaced' nostalgia with 'hauntology' of contemporary popular music and culture. He suggests thinking of early 21st century music culture's fixation on materialized memory as "the principal sonic signature of hauntology: the use of the crackle, the surface noise made by vinyl" (p. 21). Fisher together with sound artist Justin Barton explored the theme of 'unplace' during a walk along the Suffolk coastline (Harper, 2019). Concentrating on 'unplace', they assume an unknown sonic spatiality that surrounds people and all the space around them. In 2019, *Flatlines*, a sub-label of *Hyperdub*, the record label that was founded by Steve Goodman, released the sonic essay of this walk.

3 PART III | PRACTICE – LED RESEARCH

Part III describes a practice-based effort in the (re)alignment of planning and design situations where sonic awareness and sound design strategies are limited to nuisance control. Through practical engagement in a Brussels case study, I have studied how a sonic material research approach allows for the cultivation and preservation of a deviant engagement with urban sound in the planning and design of transitory urban spaces. By attuning urban analysis and design to affective sonic materiality, I aimed to formulate an answer to the following research questions:

1. What is the position and role of sound and vibration in the redevelopment of old industrial railway space which also is the scene of urban conflict and performance?

2. How can we expand a planning and design research focus on hearing or focused listening to a non-anthropocentric conception of sound as vibrational affect?

    2.1. What new ways of mapping and understanding urban space become possible?
    2.2. How does this shift in thinking lead to new planning and design perspectives on urban transition?

To answer these questions, I conducted practice-led research through exploratory, longitudinal case study. I studied respectively the use of sonic cartography as a method and tool for urban analysis of transformative railway space along Brussels Line L28, the implementation of this method and tool in a design studio, and the presentation of the research outcome in the form of an audio paper conceived as an interface for communication with the field of planning and design.

3.1 Methodology

Practice-led research has been used to study the potential of attuning to affective sonic materiality in urban planning and design research concentrating on old industrial railway space conversion to green park space. A starting premise was the recognition that urban sound and vibration can be experienced from multiple positions and in various ways and that this recognition should precede the formulation of proposals for future spatial intervening in planning and design practice. By integrating practice-led research in explorative longitudinal case-study, I aimed to demonstrate what it can mean for urban planning and design research to attune to affective sonic materiality in the analysis of transformative railway space and to consider a sensibility for patterns of affective encounters, materialities and multiple positions of involvedness in the planning and design for transitory spaces. Drawing on experiences and conceptions of urban sound as informational affect, through practice-le research, I carved out a sonic-material approach for urban analysis and design.

In what follows, I will explain how knowledge has been produced via both analytical thinking and practical engagement with sonic materiality. I will argue that the notion of unsound, and practices of unhearing, via the embodiment of difference and alienation of the knowing subject, not only enable sonic material research approaches but also invite to re-negotiate the subject-object relation in sonic knowledge production. Via an introduction to principles based on 'abduction,' 'diffraction,' 'crossbenching,' and 'the notion of 'rhizome,' I will elaborate on how, in the process of becoming a sonic material planning and design researcher, I alternated between situationally grounded field study and a search for generalization. In addition, I will elaborate on how these principles have contributed to a diverse understanding of the position and role of urban sound in transformative railway space and from here to heterogeneity in planning and design practice.

3.1.1 Research Design

Practice-based research was conducted via exploratory longitudinal case study and was structured around principles of unsound, unhearing, abduction, crossbenching, diffraction and rhizomanalytic analysis:

3.1.1.1 Principles

Unsound

Driven by a discomfort with prevailing modes of urbanism which typically focus on sonic risk and vibrational nuisance and a confrontation with military conflict, I have opted for practice-led research structured around the notion of 'unsound'. Goodman (2009) coined the term unsound to denote different types of sonic potential. By extending the practice-led research to the peripheral zones of sound, the research focus stretches from the anthropocentric sonic experience to the vibrational intelligence of the sonic self.

Unhearing

Informed by Tobias Ewé's (2020; as introduced in section 2.2.2.2) conception of the 'unheard,' the research project scans and explores possible openings for the study of urban sound space as 'unplace' by translating notions of sound-as-vibration as well as sound-as-experience into practical methods and tools for alienated forms of hearing or 'unhearing.' In becoming a situated sonic material researcher, I have experimented with different modes of listening from within human bodies and from within the non-human realm where the human ear is not necessarily the primary domain of sonic experience. In this context of practice-led research, unhearing has not only been interpreted as an attempt to attune oneself to the unheard which is always imperceptible and virtual, but also as an active effort to make oneself unheard. Learning to be unheard as a sonic material researcher,

involves a process alienation of hearing that is ‘unhearing’. It connects the researcher with the still alienated parts of their sensorium. Unhearing concerns the productive potential of sonic material can be interpreted as an attempt to attune oneself as researcher to this potentiality with the aim of transforming it. I argue that practices of unhearing, via their embodiment of difference and alienation from the knowing subject, can renegotiate the subject-object relationship in sonic knowledge production

Abduction

The practice-led research methodology grounds in abduction. Abductive reasoning, a form of logical inference formulated by Charles Sanders Peirce (Campos, 2011), has been interpreted as a form of creative guessing, using a set of observations followed by a definition of the simplest and most likely conclusion coming out of these observations. In seeking generality, abductive research uses a perspectival approach with theory-laden empirical facts as an outcome (Hanson, 1958 in Andersson et al., 2020). Therefore, the research project started with the definition of a hypothetical overarching theoretical pattern drawing on literature study. From the second half of the PhD research, the definition of a conceptual framework happened simultaneously with the case study to make the search for an analytical framework fit with the empirical material. The practice-led research thus unfolded along an abductive mixing of these two tracks. This abductive approach can be understood as a move away from research methods structured around contextually located empirical in-depth investigations of pre-defined phenomena. Without having a determined research focus and approach at the start of the PhD project, some identifiable boundaries of the primary study object were already fixed at the early stage of the research process. The course of the case study demonstrates a shift from a focus on urban space as something distinct, delineated and separate from sonic experience to an understanding of transformative railway space as

entangled with urban sound spaces and their sound spheres as ensembles of continuous performed intra-relations.

Crossbenching

Throughout the case study, I explored a crossbencher's position (Miessen, 2016) for conducting interdisciplinary research in frontier areas between urban studies, sound studies, and planning and design research. Operating from a framework nestled on disciplinary boundaries, I adopted an interdisciplinary approach for the selection and triangulation of methods and sources. Knowledge and the production of knowledge entered the research through interdisciplinary editing, sampling, and mixing of data that I collected from different sources such as field recordings, literature, and online music video clips.

Rhizome

Throughout the process of practice development, I explored the potential of a sonic material approach for rethinking the position and role of sound in planning and design by exploring how it moves research towards a deeper understanding of sonic affective flows navigating transformative urban railway space and creative critical planning and design experimentation. The non-hierarchical figure of the rhizome motivated a deeper understanding of sonic affective flows involved in the co-generation of urban sound spaces and their affective soundspheres. Methodologically, adopting a 'rhizomatic' approach for case-study, I have explored an integration of literature study, case-study research, sound art activism, and writing for the purpose of transversality and disciplinary disruption (see Deleuze and Guattari, 1987). The non-hierarchical figure of the rhizome has also been explored as a tool for the study of relations and the continuous transformation of the research project itself.

Diffraction

Karen Barad argues that every method or theory is an 'agential cut' reflecting a particular power laden effort to create knowledge (2007: 185). Following Deleuze and Guattari's (1987) suggestion for a 'minor science', also the case-study itself has been conceived as an assemblage: a particular arrangement of machines, designed with affective flows and capacities in mind. I aimed for an articulation of the research conditions allowing research to emerge from the studied event, and thus from the affective flows within the research assemblage itself. Every stage of the research process has been treated as a machine that is constructed and activated in a certain way with a certain output target. In building on Barad, social researchers Fox & Alldred (2017) point out how this way of understanding intra-actions enables a better understanding of the micro-politics of research and the identification of possible research hazards: the risk of distorting as research assemblage, and the incapacity of research to affect by not being critical enough.

Inspired by Goh's (2017) suggestion of 'sounding situated knowledges, I aimed for a situated sonic material engagement in two ways: Firstly, I aimed to articulate for multiple constitutive affective relations between the events to be researched, methods and (recording) tools, ethics and politics, academic and urban settings of the research, theoretical frameworks and conceptions, analytical software, platforms, students participating in the research, data, and presentations. Secondly, I aimed for diffraction by attuning to affective sonic materiality as a researcher myself. For example, in the process of defining position and tools for field recording.

Moving away from the position of the researcher outside of the observed phenomena and the idea of knowledge production via methodological structured interpretation, towards a 'situated material engagement', throughout the case

study, I explored the potential of a diffractive, relational engagement with different data sources hereby focusing on novelty. From this situated engagement with sonic materiality, I became interested in a rendering of sonic experience as the sonic material felt outcome of entangled relations connecting strategical planning and design, the use of surveillance and/or military tactics, with sound design techniques defining performative and collective listening space. The occasional became more important, and accounts of contingent and situated enactments, though not necessarily categorized in advance, were considered capable of making a difference to the researcher's position and the research itself.

3.1.1.2 Explorative Case Study

For this practice-led research, I draw on my experiences with early artistic research projects and my doctoral project under supervision of Professor Dr. Burak Pak and Peter Cusack. The explorative case-study has been conducted as PhD research between November 2017 and September 2021. Via sonic material practice development, it investigates the position and role of urban sound in old industrial railway space conversion to transitory green connections and park space in the Brussels Tour & Taxis and West Station areas and the specific urban reality of performative practices and urban conflict occurring in the transformative open railway spaces. It combines individual field study, a NYC pilot study, networked practice, and participation in a higher educational practice coordinated by Prof Pak.

Sonic Cartography

In response to both the question on the position and role of urban sound (1) and the search for new ways of analyzing urban space while exploring the idea sound as informational affect (2.1), throughout the research I worked out an analytical method for 'sonic cartography.' It was conceived as interface facilitating planning and design experimentation in a design studio and the articulation of multiple positions for experience. Sonic materialism informed a focus on 'impersonal flows of sound as informational affect' and 'territorialized capacities' in the sound spheres of transformative railway space's urban sound space.

Aiming for a relational, performative sonic material account of transformative railway space, I experimented with a mapping method enabling a study of actual arrangements of 'urban sound spaces' in relation to the urban environment, a concretization of urban planning projects and the presence of performance, surveillance, and control on street level. From here, I searched to address how a cartography of urban sound as informational affect enables a better understanding of how the urban sound space relates to the green network development, urban conflict, performance, and collective listening. A first step in the construction of a sonic cartography was the tracing of transformative railway spaces being used by local youth as performative spaces. Literature study, a reflection on former participation in planning processes and a continuation of longitudinal field observation informed this tracing. The second step consisted of mapping constitutive affective relations between events situated in local urban sound spaces and the affective flows occurring between different sonic spheres involved. A third step involved a multi-level analysis for explaining how the level of strategic planning might affect, or is being affected by local, non-local, human, and non-human relations present on street-level.

Sonic cartography in three steps:

1) *Tracing of the urban sound space of transformative infrastructural space used by local youth as performative and collective listening space*. Use of a threefold approach by considering transformative railway space as (a) transitory greenspace, (b) performative space, and (c) operative centre for terrorism and surveillance infrastructure.

2) *Mapping of the urban sound space and its sound spheres:* Mapping of relations, affective forces, and capacities constituting the assemblage of an urban sound space, urban sound sphere and its iterative processes of acoustic territoriality. Mapping the use of sonic vibration and spatialization as informative affect in the marking or "contouring" of sonic spheres.

3) *Sonic material analysis:* situated study of the contingent and situated enactment of urban sound spaces, sound spheres and processes of acoustic territoriality. Accounting for sonic experience as the sonic material felt outcome of an entanglement of strategical planning and design, the use of surveillance and/or military tactics, and sound design techniques defining performative and collective listening space. Explorative research on how the use of sound as affect impacts the accessibility of the studied urban railway space. Explorative study of unplace revealing itself through the eerie experience of space triggered by sound and vibrations navigating real urban spaces.

For the sonic cartography of transformative railway spaces along L28, I have concentrated on assemblages of human and non-human, material and abstract, and the affective flows within these assemblages and less on individual bodies, subjects, experiences, or sensations. By extending the research to the study of entangled conditions and performativity of a sound space, sound spheres, and unplace, I explored how sound-as-experience can be approached as sonically materially felt consequences of entangled patterns linking transformative railroad space to militarization and popular music and how these consequences continue to reverberate in different circumstances, thus producing diffraction.

In the iterative process of collecting and analyzing data, and expanding my literature on sonic material research, I aimed to expand my knowledge on what 'sounding situated knowledges' is and what kind of data it can produce. I have searched to develop a sonic material research approach, not with me as a researcher outside but situated in relation to the studied phenomena and the production of data. Throughout the research process, I explored how to realize research as a relational practice, through which the researcher and the subjects and objects studied could simultaneously engage in a relationship of entanglement. I endeavored to conduct practice-based research in ways that would enable a decentering of both the human listener and researcher and to draw more attention to the practices that position and condition the all too often assumed human actor, including the human researcher. In other words, throughout the case study, I started experimenting with practices such as field recording that enable a foregrounding of the performativity of sonic materiality in planning and design research. Inspired by Goh's (2017) 'sounding situated knowledges' and practices of unhearing in field recording, I began to incorporate sonic materiality by using for example stereo recordings of vibrations and electromagnetic fields.

I argue that an incorporation of affective sonic materiality in the research enabled what Barad (2007) describes as a 'situated material engagement' with the object of study. Engaging with sonic materiality in research practices such as field recording enabled me to approach both myself as researcher, and objects of study as relational enactment. A situated opening to sonic materiality affected the research in two ways: Firstly, it allowed me as researcher to experience the sonic material felt outcome of an entanglement of strategical planning and design, the use of surveillance and/or military tactics, and sound design techniques defining performative and collective listening space. Secondly, embracing sonic materiality in the analysis enabled the study of the contingent and situated enactment of urban sound spaces, sound spheres, processes of acoustic territoriality and unplace. Therefore, a situated incorporation of affective sonic materiality in the research motivated an expansion in focus from the spatial to the temporal enactment of relations.

Checklist for sonic cartography:

1) **Relations:**

   a) *Non-human non-human relations*

      i) building complexes
      ii) green space networks
      iii) transportation networks
      iv) modified surfaces (e.g., parking lots, roofs, and landscaping)
      v) presence of water, plants, and animal species
      vi) sonic, vibrational material

   b) *Processes of acoustic territoriality defining sound spheres and urban sound space – human human, and human non-human relations*

      i) strategic planning, implementation of renewal program
      ii) noise contouring of transformative railway space
      iii) performative and collective listening in transformative railway space
      iv) surveillance: surveillance infrastructure installation, monitoring, and control
      v) defensive planning and design

   c) *Psychological relations*:

      i) may include environmental stressors, attitudes, as well as psychological, emotional reactions both positive and negative

2) **Dynamics and conditions of possibility:**

   i) on-going railway conversion into green space
   ii) processes of urban privatization
   iii) processes of acoustic territoriality in urban sound spaces and sound spheres
   iv) variation and transformation in use, differing assemblages across moment, period, time, season, crisis (pandemic)
   v) other environmental alterations
   vi) sonic and vibration material transformation operating as affective forces

3) **Sonically materially felt consequences of entangled patterns:**

   i) sonic experience as the outcome of the breadth of affects in the assemblage with cognitive capacities not necessarily as the most significant
   ii) capacities of bodies, relations and spatial environment reflecting differing patterns of engagement

Sound Walk as Tool for Performative Planning and Design Research

I designed two sound walks for the Brussels L28 railway area as part of the PhD research. These walks connect a network of railway spaces along the Brussels Line L28. They invite for both individual as well as collective listening sessions on site. Throughout the research I performed them at different stages in the research process, on different occasions. The sound walk became a recurring research practice. On different moments in the process, I edited, transformed, and remediated the walks. Conversations with different actors, practices, exercises, and tendencies informed these adaptions. On site performance enabled an outreach-based dialogue and networked practice on method and tool development. Facilitating a simultaneous and continuous exchange on experiences with the situated and place-specific aspects of knowledge and sound production, the sound walk invited research participants and audience to open for a material engagement and reflection on urban sonic space of the visited transformative railway space. The soundwalk enabled a performative and recurring engagement with the concrete and site-specific aesthetics of the sonic environment. Moreover, it stimulated reflection and experience and on-site discussions on practices of sonic cartography and the use of media, technology for research on the position and role of sound in greenspace development.

Interfacing with Higher Education-based Planning and Design Research: Masterstudio_L28

Early in the PhD research project, I was invited to conduct part of the research project through participation in educational practice. From a collaboration between supervisor and PhD researcher, a platform was created for planning and design experimentation opening the research to student's experimentation implementing 'differing' planning and design perspectives. By connecting higher

educational practice to theoretical framing, ongoing planning processes, network practice, and sonic experimentation as part of practice development, I aimed to formulate an answer to the following research question: How can we install in planning and design research a sonic sensibility for patterns of affective encounters, materialities and multiple positions of involvedness?

Masterstudio_L28 has been conceived as a testing ground for exploring methods and tools we consider as elements of the trans-disciplinary framework I deployed. Artistic practices, concepts, and aesthetics of making organized sound informed the construction of a language that seizes its own methods and tools, and thereby manifests itself. Besides contributing to a new body of work, which assembles around the notion of sonic urbanism, in Masterstudio_L28 we explored how hyper contextual practice can inform existing disciplines such as architecture and urbanism. In line with the PhD research project, Masterstudio concentrated less on formalistic urban architecture and more on a possible intervening in the agency, the experience of formal-mechanic dimensions of urban sonic vibrations as a source for a re-negotiating of urban transformation. By re-negotiation we mean a re-proposition of sonic spatial relations that can get new socio- (political) encounters off the ground.

Rather than demanding students to use a ready-made formalistic approach to the design process, emphasizing physic acoustics, the exercise was about the search for, and the amplification of tensions between intuitive, sensible, and semantic components of urban sound experiences and the disinterested, de-semantified and purely formal elements of urban architecture or urban design on the other. Urban architecture has been addressed as an articulation of these relations through the development of a method and tools for urban architectural design, thereby facilitating a possible (re-) negotiating urban transition manifested in new sonic forms.

3.1.1.3 Sonic Journal

In practice, the shift to a position of "crossbenching" and "situated material engagement" implied an interdisciplinary triangulation of methods and mobilization of data sources. The move to diffractive analysis implied a deepening of my engagement as researcher with data. This has been in no small part facilitated by the use of a sonic journal. Throughout the research, I experimented with a recursive, rhizomic, diffractive reporting approach. Elaborating on 'sonic journalism', a practice developed by co-supervisor Peter Cusack (Cusack, 2016; Oppetit, 2017), findings and observations from fieldwork, educational and network practice have been situated relative to the different components of the practice-led research.

I used a sonic journal for data mining, the collection of empirical data sources which allowed me to map the contingent and situated creation of urban sound spaces, sound spheres and processes of acoustic territoriality and to account for sonic experience as the sonic material felt outcome of an entanglement of strategical planning and design, the use of surveillance and/or military tactics, and sound design techniques defining performative and collective listening space. It supported interdisciplinary and explorative research on ways sound as affect impacts the accessibility of the studied urban railway space and how unplace is revealing itself through the eerie experience of space triggered by sound and vibrations navigating real urban spaces. This practice of sonic journalism enabled the research to become a kind of iterative and synthetic process for exposing possible relationships within assemblages, their affective flows, and the conditions of possibility and sonically materially felt consequences they produce. The sonic journal has been used in different stages of the case study. For example, I introduced it in a protocol for media analysis that developed over time:

Protocol for media analysis

1. First reading, listening and/or watching plus organization of transcripts in the form of a sonic journal: reading and rereading, listening / watching and re-watching making first notes on subjects in the right column of the guiding table.
2. Second reading: adding notes on themes and topics to arrive at a higher level of abstraction connecting to 'sound as informational affect'. Focus on similarities and differences, repetitions, contradictions.
3. Linking themes moving from chronological→ analytical / theoretical ranking and organizing of collected and / or experienced data with clustered themes.
4. Moving to the next recording, or music video clip and repeating step 2 until the final recording or video clips.
5. Finalizing the analysis and writing its conclusion.

Source Triangulation

1. LITERATURE

Literature review was conducted in preparation for my participation in the development, organization, and teaching of educational practice, as well as for the research project in general. In turn, a feedback loop from the evidence-based data collection to the literature has been established.

2. PEOPLE

People have been involved in two different ways. Within each of these two categories I identify two more groups.

Firstly, two groups of people were involved as experts:

- Master's students: while enrolling in a design studio or elective course, master's students in architecture participated in the on-going development

of the practice. Master's students in architecture joined a design studio or elective course. The role of the PhD student and the program of the design studio's and elective courses were conceived and presented as participatory research. The masterstudio was coordinated by Prof Dr. Burak Pak, supervisor of the PhD research project.

- Spatial professionals and sound researchers: I invited spatial and sound researchers to experience the sound walks and join the lectures with moments for Q&A.

Secondly, two groups of people have been involved as informants:

- Social professionals: I invited a social professional from the network of social professionals who are active in the maintenance of open green spaces in the project area. The ambition was to collect information related to the position that the interviewee in question occupies. The respondent invited to inform about human and non-human use of transforming (green) railway spaces in the project area.
- Sound designers / performers: I invited sound designers / performers to inform on their knowledge and experience with the design of sound experiences.

3. MEDIA

I used four different types of media:

- I studied online publicly accessible music videos representing the project area. Acknowledging the role media plays in representing but also imagining experiences of urban space we look to the presence or absence of sound as informational affect.
- For the field observation and study of vibrational and electromagnetic forces in transformative open railway spaces, I made stereo recordings of vibrations and electromagnetic fields in the selected railway spaces.

- For information on sonic and vibrational characteristics of the studied railway spaces I also studied the online public noise maps and outcomes of recent research projects on noise and vibrations publicly available on the website of Brussels Environments.
- I made audio recordings of online interviews.

Method triangulation

1. MEDIA STUDIES

I studied the sound design of online publicly accessible music videos produced by local musicians between 2014 and 2021. Videos have been selected based on their relationship with a specific site or route situated in the Railway area of line L28. The representation of one or more studied railway spaces in the music videos as well as patterns of affective encounters, materialities and multiple positions of involvedness, actions of re-negotiation of the railway space and presence of sonorous based struggles served as a selection criterion.

2. FIELD STUDY

Exploring a sonic material approach for planning and design research, for the field observations, I focused on the presence of audible and inaudible frequencies in transformative railway spaces of the case- study. My approach to 'field recording' is based on a model of crossbenching between sound arts practice and urban planning and design research. This interdisciplinary navigating is reflected in both the position of the recordist, the use of recording technology, the moment, rhythm, and duration of the observation:

Figure 2. Field recording setup: 'EM Inducing'

Figure 3. Field recording setup: 'Contact Microphones'

Instrument 1: positioning of the field recordist

The positioning of the recordist has been approached as one of the instruments of data collection by use of its mode of attention and awareness. For the field study, I combined two models for the field recordist:

The first model is that of the urban researcher as a 'sonic journalist' (Oppetit, D., 2017): she, he or they take(s) field notes, using a thick description for accurately capturing the essence of the urban environment and human non- human interactions within it; the other model is that of the sound artist organized around the creative collection of sound and inaudible vibrations on recorded media: as a field recordist, the researcher creatively records environmental vibrations while being in the field. This model of attention is based on the 'Deep Listening Practice' as developed by Pauline Oliveros (2005).

Instrument 2: selection, combination, and positioning of microphones

The selection, combination and position of microphones is the other instrument for data collection: the microphone instrument through which the vibrations and electromagnetic field of an urban green space is filtered. The type of microphone employed defines the rendering of the recorded sound.

For the recording of vibrations in space, I used a pair of contact microphones, a hydrophone and an electromagnetic listening device plugged into a recording device. I chose to work with contact microphones because they pick up vibrations rather than sound, a hydrophone for capturing vibrations in water, and the electromagnetic device for grasping magnetic fields present in the urban space. The use of these types of microphones reduced the risk of recording understandable conversations to a minimum. A selective recording of vibrations passing through material makes them relevant tools for a material analysis of urban sound effects.

3. SEMI-STRUCTURED INTERVIEWS WITH SOCIAL AND CULTURAL PROFESSIONALS AND PERFORMERS

For information on the openness of the railway space, I have organized two semi-structured interviews: one with a socio professional (Bravvo, personal communication, 2020) and one with a sound designer of hip hop music (Interview Sound Designer Performer, personal communication, January 11, 2020).

4. RESEARCH IN ACTION

Early summer 2018, I was invited by Professor Dr. Burak Pak, supervisor of the PhD research project, to teach with him at the Faculty of Architecture. I was involved in the development, organization, teaching, jury and exhibition of two Masters Design Studio's and two elective courses that were part of the International Master of Architecture between September 2018 and July 2020. My participation was purposefully conceived and organized as part of the PhD research project in which urban sound design forms a methodically bridging between the concerns of sound art, urbanism, and urban architecture, we examined students' work as experimentations in urban sonic form and architectural planning and design. Following the dispositive of critical spatial practice-based learning we endeavored the definition of critical positions, the search for new methods and tools for the analysis and definition of urban sonic forms considering dispositive coming from sound arts, architecture, and the urban context, that is the transforming railway area of the line L28. The role of the PhD student and the program of the design studios and elective courses were conceived and presented as participatory research and informed students' decision to enroll in the studio (Claus & Pak, 2018).

5. CONFIRMATORY FOCUS GROUP

Throughout the PhD research, I organized three soundwalks and I joined two lectures (Claus, 2021a; 2021b; 2021c; 2021d). The presentations and soundwalks replaced the panel and two soundwalks that were planned as part of the initial program of *La Semaine du Son / Week van de Klank* 2021, scheduled for January 21. Due to COVID-measures, the organization of these research activities remained uncertain until May 2021. The festival was postponed to September. In the meantime, I was also invited to join the program of Building Beyond, the Summer School of Permanent, Brussels. Because of the uncertain planning and postponement to a later point in the study, the panel was cancelled.

3.1.1.4 Audio Paper

> The audio paper is never conventional, as it always incorporates an awareness of the processes of research and technological production. It not only reflects its own research question/s but reflects the reflection itself: the process of knowledge-production, the presentation and representation of language and voice, the narrative and dramaturgy, and the aesthetics of sound.
>
> The Audio Papers - Manifesto by Samson & Grogh (2016)

Samson & Grogh's (2016) definition of the audio paper informed both the research approach as well as the manuscript format of this PhD project. *The Audio Papers – Manifesto* inspired an integration of the sonic cartography, soundwalk and sonic journal in the communication on the research process and outcome. As a publication format straddling the line between ethnographic field research and artistic practice, it offers a variety of opportunities for the materialization and presentation of the research process. The format of the audio paper allowed the manuscript to unfold from within a framework not bound to one specific discipline or ontology. The blurry contours of the format encouraged experimental planning research. Samson & Grogh's describe the format as both an experiment and subversion of academia, a frame for ideas already present but not yet institutionalized nor settled. For them, both the format and their manifesto are performative statements. Experimentation with the idea of the audio paper as a performative statement enabled an exploration of a concrete and site-specific aesthetic of *site sounds*. In addition, it stimulated both individual and collective on-site experience and discussion on the case-study and practice development.

3.1.2 Pilot Study on Methodology: NYC Research Visit (2018)

Between August 22 and September 14, 2018, I have visited NYC for research on the LIC railway development there. During this research visit, which was made possible by the KU Leuven Architecture NY-hub, I conducted network practice and a field study from the idea of sharing knowledge on methods and tools for urban sonic research on industrial sites conversion to green infrastructure.

3.1.2.1 LIC Railway Area, NYC

The rapidly transforming LIC railway area on the Western Queens and Brooklyn border offers quite some space for research on sound and vibration in relation to urban life and lifeways, urban form, and critical urban thinking. Remarkable transformative sites here are the Sunnyside Yard in western Queens and the heavily polluted 3.8-mile estuary, Newtown Creek area. At the time of the visit, a master planning process was initiated for the Sunnyside Yard. The Yard forms a critical component of US national railway infrastructures and one of the most heavily used passenger rail facilities in North America. On March 3, 2020, after 18 months of public engagement and analysis, NYC and Amtrack released the *Sunnyside Yard Master Plan* (New York City Economic Development Corporation, 2020). Supported by environmental advocacy groups such as the Newtown Creek Alliance, in 2010, the US Federal Environmental Protection Agency designated the old industrial creek as a *Superfund Site* (Newtown Creek Alliance, 2014). The designation promises evaluation and environmental remediation.

Figure 4. Sunnyside Yard Masterplan: (New York City Economic Development Corporation, 2020)

Figure 5. Sunnyside Yard Masterplan: Open Space and Social Infrastructure (New York City Economic Development Corporation, 2020)

3.1.2.2 Method and Tools for Urban Sonic Research

By means of acoustic exploration, conversation with social cultural professionals and collective performance with sonic researchers in this old industrial area, I have shared interest in the transformativity of (sonic) vibrations and the idea of infrastructure noise and synthetic sound as yielding rifts in the sonic experience of its industrial urban transformation.

By connecting to different projects of grassroots activism and through a re-meeting with sonic researchers such as Keiko Uenishi and Johann Diedrick, I have explored possible tracks and tools for urban sonic research. The NYC field practice-led research unfolded through the experimentation with different methods and tools that was thought of the development of a sonic-spatial tool for planning and design research on green infrastructure development.

Practices of 'sound walking' and 'field recording' were central to the research activity. The NYC research visit allowed the study of both practices in the urban context of metropolitan railway transformation at the Western border of Queens with Brooklyn. Through network practice with NYC-based sound researchers and urban activists working on community-created projects and/or open-source tools, I have searched to address the following research questions:

- What type of strategies, tactics, and tools facilitate the study of possible entanglements between the vibrational materiality and planning processes of public railway space?
- Can a study of (sonic) vibrations be agentive in the (re-)negotiating of urban transition?
- How can network and collaborative practice contribute to the development of this part of a performative approach to sonic urbanism?

In what follows, I will explain the different steps of this part of the practice-led research by use of a sonic journal describing the field study and network practice.

3.1.2.3 Sonic Journal NYC

Aug 23, 2018. Presentation of NYC Audubon monitor system at Kingsland Wildflowers Project, 520 Kingsland Avenue:

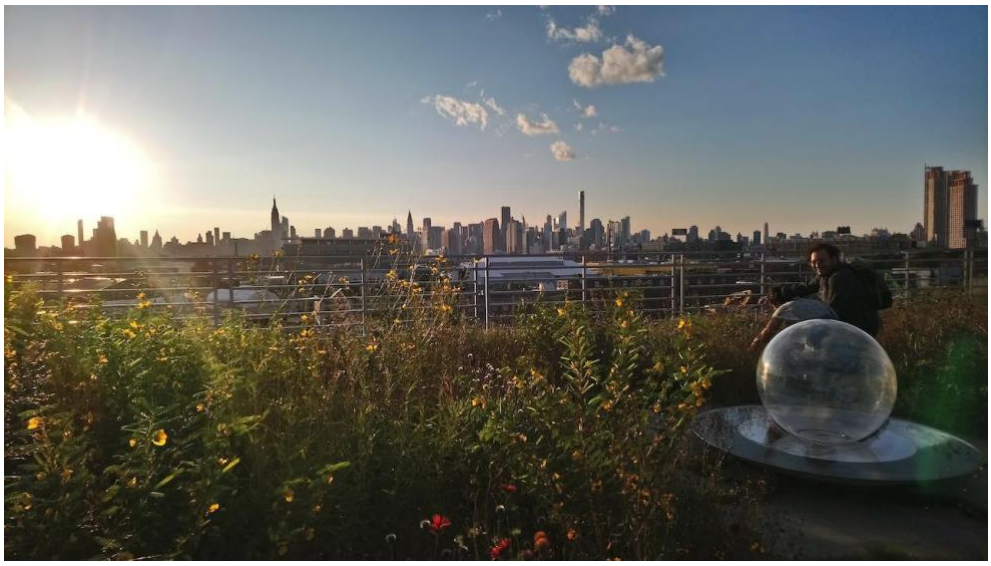


Figure 6. Presentation of NYC Audubon monitor system at Kingsland Wildflowers Project, 520 Kingsland Avenue (Claus, 2018)

On august 23rd three staff researchers of NYC Audubon explained how they approach the rooftop *Kingsland Wildflowers* as an example of Bird-Friendly Building Design. Of particular importance for my research is their acoustic monitoring of bats. Bats use echolocation for navigation and for hunting in various environments. They send out calls to the environment and listen to the echoes of those calls coming back from various objects near them. They use these echoes to locate and identify the objects. Recent research suggests that bats residing in urban areas may benefit from the presence of green roofs rather than conventional roofs (Parkins & Clark, 2015). To research the role of a green rooftops in supporting urban bats, the researchers of NYC Audubon monitor bat activity at Kingsland Wildflowers using

ultrasonic recorders. Their set up consists of a combination of non-invasive technologies to avoid human intrusion during acoustic surveys and facilitates the accumulation of streams of acoustical data.

Aug 27, 2018. BAN General Meeting, Solidarity Centre, 147 W 24th St 2nd floor, New York, NY 10011 with Brooklyn Anti Gentrification Network:

On august 27, 2018 I went to the BAN General meeting at the Solidarity Centre in Manhattan, NYC. While I was welcomed to attend the meeting, I was asked NOT to record or document the conversations. After the meeting, I talked with the coordination of BAN on urban development and activism in Brussels and NY. I use other media sources to share what I learned from this grassroots project.

Building on Brandon Labelle's (2018) figurations of sonic agency, I understand BAN's use of sonic strategies and tactics via the figuration of 'overhearing.'

- The 'Human Microphone' Technique to amplify the voices of speakers above the meeting, bringing proceedings to a standstill (BKLYNER, 2018)
- Chants and Chant leaders in their Brooklyn-Wide Marches Against Gentrification, Racism and Police Violence (Mathew, 2019)
- NYPD Parade and Sound Permits (NYPD, n.d.)

The tactics used by BAN demonstrate a possible interruption of top-down urban development processes. In line with Labelle's thinking on 'overhearing', these performative network practices can be understood as providing a basis for grounding urban struggles and ideals of direct relationships between people living in different neighborhoods where development projects introduce extra pressure. Acts of interference used in manifestations and parades may assist in the process of generating and strengthening the network of BAN by which commons may arise.

Aug 30, 2018. LIC Sound Walk with Johann Diedrick and Keiko Uenishi and meeting Niki Jackson.

Early in the project, I invited Johann Diedrick and Keiko Uenishi to join me in a Sound Walk from the Astoria neighbourhood in Queens to the Kingsland Wildflower Rooftop project in Greenpoint, Brooklyn.

The silent walk stretched from Steinway Street, via 39th Street Bridge over Sunnyside Yard, and via Greenpoint Avenue up over Newtown Creek to finally arrive at the Kingsland complex via a turn past the towers. via the bridge over the site, then via Greenpoint Avenue above Newtown Creek water to finally arrive at the Kingsland Wildflowers Green Roof & Community Engagement Centre via a turn past the Newtown Creek Wastewater Treatment Plant. This passage across the old industrial edge area induced an interesting succession of different sonic experiences. The wide scope of the railroad area allows for different types of activities to be experienced. Long travel distances emphasise the metropolitan nature of those experiences. The route across the Newtown Creek, confronts you with a struggle of life along the heavily polluted water. Around the plantation, machines dominate the sound environment. The absence of people increases the likelihood of an alienating sonic experience.

Sept 6, 2018. Sonic Conversation at Control, Brooklyn, NYC with Robert Aiki Aubrey Lowe

Control is a synthesizer shop based in the South Williamsburg Neighbourhood of Brooklyn, NY. They specialise in Eurorack Modular, vintage traditional and unusual eccentric electronic devices both analog and digital. They like people to come and view/listen/discuss as well as purchase.

One of Control's contributors is artist and composer Robert Aiki Aubrey Lowe who works with voice and modular synthesizer to create sound in the realm of spontaneous music. He uses a wide range of modular synths to explore the boundless possibilities opened by the modular in relation to the dense intricacies of his layered voice.

> A synthesizer can get right there in between the notes. The idea of working within a twelve-tone system, the Western scale, is not the most exciting to me. American composer Harry Partch had been an early explorer of this kind of approach in the mid-20th century, creating his own 43-note scale within the same frequency range as the western 12-tone octave, even custom-building his own instruments to match. He was definitely important in my thinking - creating his own system like that, and who's to say that it's right or wrong? It just is what it is (Bath, 2013).

On September 6th, at Control, Brooklyn, I had a conversation with Robert Lowe on the use of field recordings in combination with modular synth. I asked him for advice on the use of a portable modular synth. We discussed and tested different approaches and possibilities. I explained to him my approach to field recording and the difficulties I experienced. He introduced me to his use of NYC field recordings in combination with modular. I watched him patch synths. Following the conversation, I did some first field tests with a portable analog synthesizer and some extra microphones and sensors added to my recorder.

Sept 7. Performance, Greenpoint Brooklyn, with sound artist and Senior Developer at the Met, Johann Diedrick:

Johann Diedrick creates installations, performances, and objects inviting people to play with sound. He shares his work with others through workshops, listening tours, and open-source software and hardware. Following our conversations at Invisible

Places Conferences in 2014 and 2015 and Johann's recent participation in one of my acoustic explorations in Brussels, I had invited Johann to meet for discussion and collaboration during my NYC research visit. Following his participation in my sound walk, Johann invited me for a shared performance in the public space of his neighborhood, Greenpoint, Brooklyn, South to the yard.

The waterfront of this part in Brooklyn is rapidly changing, as construction sites keep on popping up on several large residential and green waterfront projects along West Street. Following a walk along the Newton Creek, Johann and I decided to combine our tools in a shared performance exploring the local public space. Because of rain we decided to organize our performance from within a ferry stop station building. The open and public character of the building allowed for interaction with people and the environment.

Our set up consisted of Johann's noise machine combined with three of my microphones, a synth instrument, and a portable recorder. The microphone connected to my synthesizer set-up allowed for the interactions between Johann's tool, the sound environment and my synth and recorder. During the performance our instruments played both each other and the environment and vice versa the environment also had an input to the sonic play of the waves and passers-by present in the area. In that sense the collaborative set up of our system allowed for different types of control by different actors. This interplay between different actors and the resulting form of control motivated additional research.

Sept 9, 2018. Share NYC performance, Brooklyn, NYC. With Keiko Uenishi, Johann Diedrick, Ranjit Bhatnagar and other performers:

Keiko Uenishi is a sound art-i-vist, socio/environ composer, researcher, and a core member of SHARE.nyc who is currently based in Brooklyn, NY and Vienna, Austria. She is the coordinator of SHARE, a worldwide support and infrastructure for new

media communities. This infrastructure was conceived as a regular open multimedia jam. By participating in one of Share.nyc sessions, I could experiment with possible connections between different machines of my individual set-up and the instruments and machines of the collective.

Sept 11, 2018. Sonic Conversation, Build Queensbridge, Community Center, NYC with Farrah Marin, MSSW, Community Coordinator:

Queensbridge Houses is the largest public housing project in the US. It is located in the rapidly transforming western part of the borough of Queens, north of the LIC railway area. The housing complex consists of two separate parts (North and South Houses). Queensbridge was the neighborhood where hip-hop artists like Nas, Marley Marl, Roxanne Shante and Mobb Deep grew up (Waldron, 2019). Through their music, lyrics, and videos, they emphasize the prevalence of gun violence and a lively drug trade in the everyday life of the neighborhood. At the Build Queensbridge Community Centre, I have met Community Coordinator Farrah Marin. We had a conversation on the music history of Queensbridge, the initiation and continuation of music-based community projects in an urban context marked by on-going urban development and a controversial omnipresence of police control.

Sept 11, Sonic Conversation, Greenpoint, Brooklyn, NYC with Keiko Uenishi and Niki Jackson:

In conversation with Keiko Uenishi and Niki Jackson I have tried to formulate some first conclusions of the NYC research. The conversation was oriented towards a reciprocal understanding of each one's perspective on sonic strategies and tactics in relation to urban transformation in old industrial urban areas. I have tried to search for a better understanding of how perspectives and activities are highly situated and steeped in the context we work. The topic of gentrification and how

we relate to it as sound artists and inhabitants became the focus of our conversation. We shared knowledge on how to craft alternatives via a practical engagement with these processes. Keiko talked about the Share project and her practice-based research on the restructuring and analysis of one's connection to sounds in sociological, cultural, and/or psychological environments. Niki shared knowledge about the community-based workshops she organizes at Kingsland Wildflowers and her practice-based research on sound and awareness of the self, of bodily sensations, of thoughts in relation to the environment.

September 12, 13 and 14, 2018. Newton Creek Area: Field recording of projects initiated by the Newtown Creek Alliance.

In total, Newtown Creek has 11 miles of shoreline. With such a long history of industrial growth, maritime use and in many cases neglect, the water's edge features a wide variety of designs and materials. Recent renewal projects carved out multiple audible accesses to the waterside. Walking along the river you can hear different sounds marking this nature/industry area: knocking timber, continuous traffic sounds, arrhythmic traffic sounds, steel sounds resonating in the distance, raindrops on the water and concrete of the Newtown Creek Nature Walk, Birds flying under the decaying steel of the bridge. By moments wildlife becomes audible. This experience supports the idea that the revitalization of the Newtown Creek adds audible quality (diversity of activity and sources, materiality, etc.) to this old industrial area.

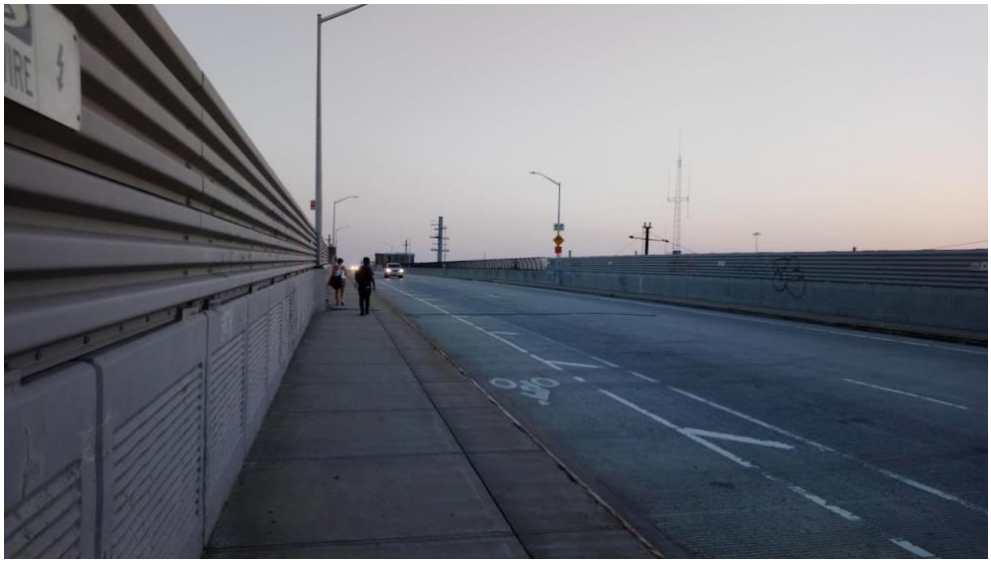


Figure 7. LIC Sound Walk with Johann Diedrick and Keiko Uenishi (Claus, 2018)

Figure 8. Newton Creek Area - Field Recording (Claus, 2018)

3.1.2.4 Conclusion | Closing Remarks Research Visit NYC

The rapidly transforming LIC railway area on the western Queens and Brooklyn border offers critical space and possible connections for practice-based research on sound and vibration in relation to urban life and lifeways, urban form, and critical urban thinking. In the NYC Research Project, I have searched to address the following research questions:

- What type of sonic practices, strategies, tactics, and tools for urban sonic research on possible entanglements between the vibrational materiality and conversion of railway space?
- Can a study of (sonic) vibrations be agentive in the (re-) negotiating of urban transition?
- How can network and collaborative practice contribute to the development of this part of a performative approach to sonic urbanism?

I have addressed these questions on sonic practices, strategies, tactics, and tools via practice development and network practice focusing on soundwalk, sound synthesis in field recording and sonic journalism and collective performance.

- What type of strategies, tactics, and tools facilitate the study of possible entanglements between the vibrational materiality and planning processes of public railway space?
- How can network and collaborative practice contribute to the development of this part of a performative approach to sonic urbanism?

The NYC research visit allowed the study of different strategies, tactics, and tools used in the urban context of metropolitan railway transformation at the Western border of Queens and Brooklyn. NYC-based sound researchers and urban activists working on community-created projects and/or open-source tools informed me about sonic strategies and tactics used for renegotiating processes of urban development. Tactics such as the ‘Human Microphone’ and chanting in ‘Marches

Against Gentrification' combined with the application for NYPD Parade and Sound Permits I associate with Brandon Labelle's (2018) figuration of 'overhearing. The researchers of NYC Audubon introduced me to the monitoring of bat activity at Kingsland Wildflowers using ultrasonic recorders. Kingsland Wildflowers, Newtown Creek Alliance exposed the possibilities of green roofs and community waterfront development. By carving out a sound walk, conducting field recordings, and plugging into collective performance, I have explored the potential of active or 'deep listening' for research on traffic flows and restoration of community health, water quality, habitat, access to blue and green infrastructure space.

- Can a study of (sonic) vibrations be agentive in the (re-) negotiating of urban transition?

The NYC experiments in combination with network practice sparked the exploration of new possibilities for research on critical, alienating experiences of old industrial reconversion along the Creek and railway yard. The combination of deep listening and on-site improvisation with a new configuration of microphones, portable synth and recordings exposed how the transformativity of (sonic) vibrations and infrastructure noise and synthetic sound yielding rifts opening the research process to sonic abstraction and alternative mapping of transformative infrastructure space. Through abstraction of sound and place, I have tried to break in, to cut through complexity and to illuminate paths that don't find words or images in on-going processes of urban development. The mixing of tools forwarded a robust engagement with (sonic) vibrations (human and non-human alike) in the project area. From the conversations with artists and urban practitioners, I have learned about the importance of grounding sonic experimentation on the one hand and the necessity of practical engagement with the challenges of a given urban context on the other.

3.2 Case Study: Brussels L28 Railway Space

The case study focused on the open railway spaces situated along line L28 between Midi Station and Schaarbeek-Vorming, with the development of Tour & Taxis and West Station areas as major strategic projects for Brussels-Capital Region.

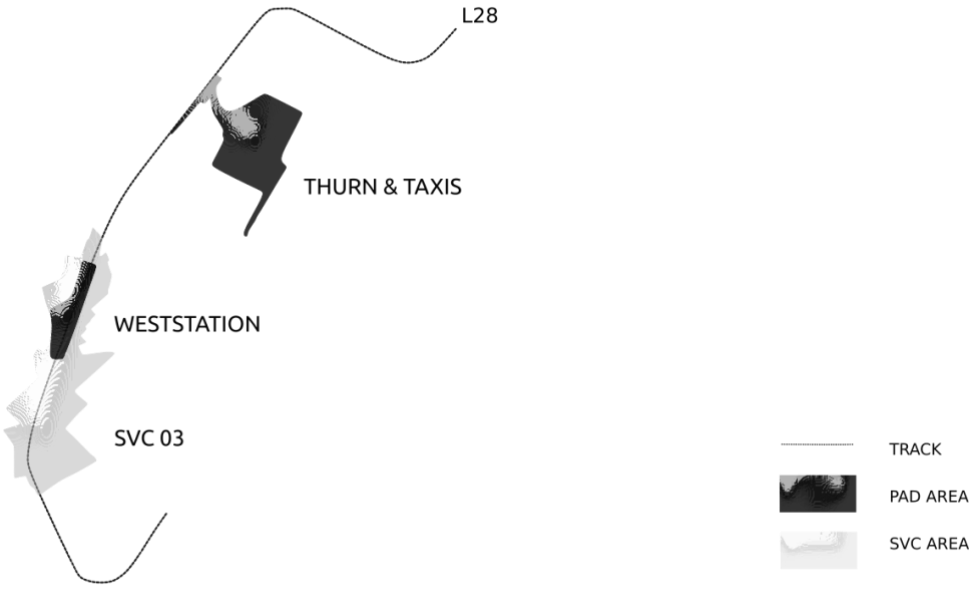


Figure 9. L28 Railway Development, Brussels: Project Areas of Weststation and Thurn & Taxis with zones of PAD Tour & Taxis, SVC 03, and PAD Weststation

Open space along the Western ring railway L28 has long been marginalized in Brussels planning processes (Agora & Leefmilieu, 2014a; 2014b). Anno 2015, the development of green space on former railway land was relatively new here. Because of its natural, historical, and ecological richness and the recent plans for development and transition, transformative open railway spaces along the L28 line, I considered it as an excellent object for research into sound and urban public space development. As a sociologist-urban planner with professional experience in

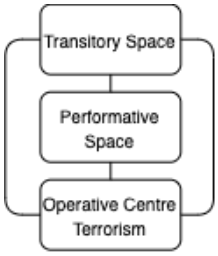
supporting architects and organizations in the social sphere in their organization of outreach-based community involvement in planning processes, I'm interested in approaching sound as a medium for (re-)negotiating the relation between social and physical space in a context of old industrial railway space conversion into green space.

The confrontation with international conflict during early field research in late 2015 motivated a reconsideration of the research approach. As a result, the research on urban sound changed both in terms of focus, theoretical understanding, and methodology. In 2016 the strategy and approach shifted from participatory mapping of sonic experience and symbolic violence committed against marginal groups in a context of urban planning to sonic artistic research exploring the presence of sonic material – affective processes in public space (Profanter, C., in Eckhardt & Costa, 2016). Not being able to introduce these intentions and practices in the planning and design processes in which I was involved, late 2016, I initiated a parallel interdisciplinary project intended as critical spatial practice for trans-disciplinary research into sonic perspectives on urbanism (Claus, 2017; 2018b). Following this initiative, which was realized in partnership with Q-O2 and public school for architecture Brussels, late 2017, following my participation in Theatrum Mundi's project on Sonic Urbanism, I prepared a proposal for a practice-led PhD research project at the KU Leuven Department of Architecture with Professor Dr. Burak Pak and sonic researcher and practitioner Peter Cusack as supervisors.

Confronted with restrictive and/or limited sonic planning approaches for transitory industrial landscapes on the one hand, and the emergence of new sonic experiments for alternative, shared experiences in militarized public spaces on the other, I became interested in conducting practice-based research on alternative, sonic material approaches through exploratory, qualitative, longitudinal case study.

3.2.1 Threefold Approach to Brussels Transformative L28_Railway Space

From an interest in a possible entanglement between the definition and implementation of acoustic comfort strategies in planning and design practice, an increased presence of surveillance technology and military presence on street-level, aggressive sound design in the music produced by local youth and a problematizing rendering of their performative practices as out of place, I have adopted a threefold approach by considering transformative railway space as (a) transitory greenspace, (b) performative space, and (c) operative centre for terrorism and surveillance infrastructure.



3.2.1.1 Transitory Greenspace

Within the context of green space development projects along Brussels' railway line L28, urban sound is dominantly discussed with a restrictive connotation. From the perspective of authorities but also from the position of habitants and neighborhood associations, the sonic focus is on nuisance control, with, for some locations, the quietness of green space: the cutting out of sounds (BRAL, 2017; GPDO, 2018; Quiet Brussels, 2019). Conflicts over sounding social nuisance are dealt with, in the long term, via the implementation of the Brussels Noise policy on the level of strategical planning and in the short term, repressively, on street level (VT Bruzz, 2018). More recently, transitory projects of temporary experiment with open planning

perspectives towards more co-creative and constructive approaches to urban sound (Stadsvernieuwingscontract Weststation, 2017; Duurzaam Wijkcontract 'Rondom Westpark', 2019).

Regional Plan for Sustainable Development (2018):

The green park and infrastructure space development along L28 is part of the green and blue network program of the Brussels' *Regional Plan for Sustainable Development* (GDPO). This regional plan defines Brussels' goals and development priorities for social and economic needs, as well as for environmental and mobility needs. It is the overarching planning instrument for regional development in the context of sustainable development. The GPDO is indicative and not prescriptive. Subordinate plans or municipal plans must adapt to the GPDO. With *projecting.brussels,* Brussels Region introduced a more dynamic strategic planning approach, enabling a constant update of the plan according to the evolution of the socio-economic situation of the Region and the urban problems which the GPDO aims to tackle.

The Blue and Green Network program of the GDPO defines Brussels ambitions concerning the increase in the provision and quality of green and blue spaces, and the overall improvement of the urban environment and quality of life in the Brussels Region. The program is structured around an integrated strategy for a green and blue network development addressing not only its ecological and environmental function and the landscape, cultural and heritage function but also its socio-recreational function. Of relevance for the case-study is that Brussels-Capital Region takes the Green and Bleu Network as a strategic framework for intervening in the development of railway spaces along L28. One of the goals is the creation of green connections away from road traffic to encourage active modes of transport across Brussels Region.

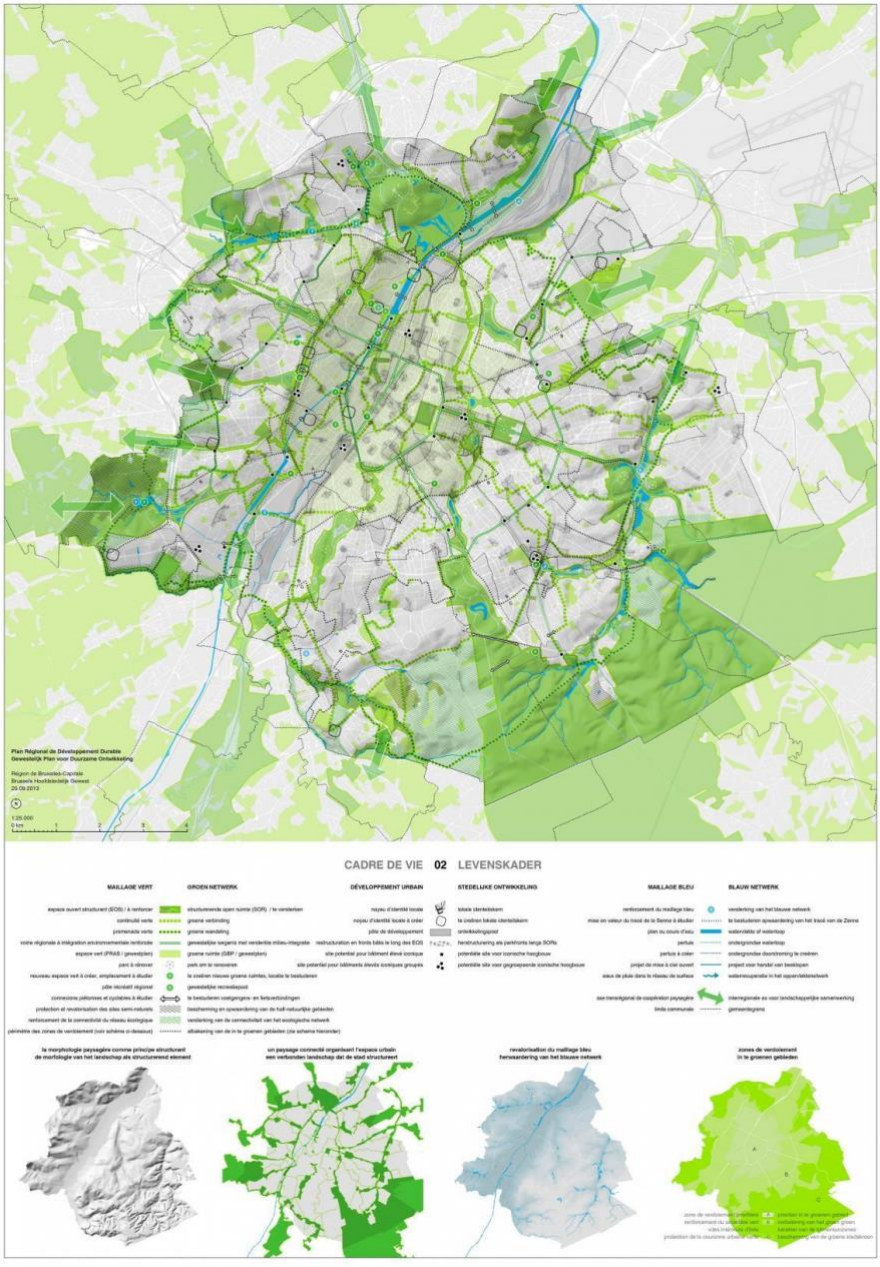


Figure 10. Map "Quality of Life " of GPDO: priorities of the Green Network (2018)

Figure 11. "Study on the green Network – L28 within the framework of the regional plan for sustainable development (PRDD), Mid-term report - study commissioned by Brussels Environment (AGORA & IBGE, 2011)

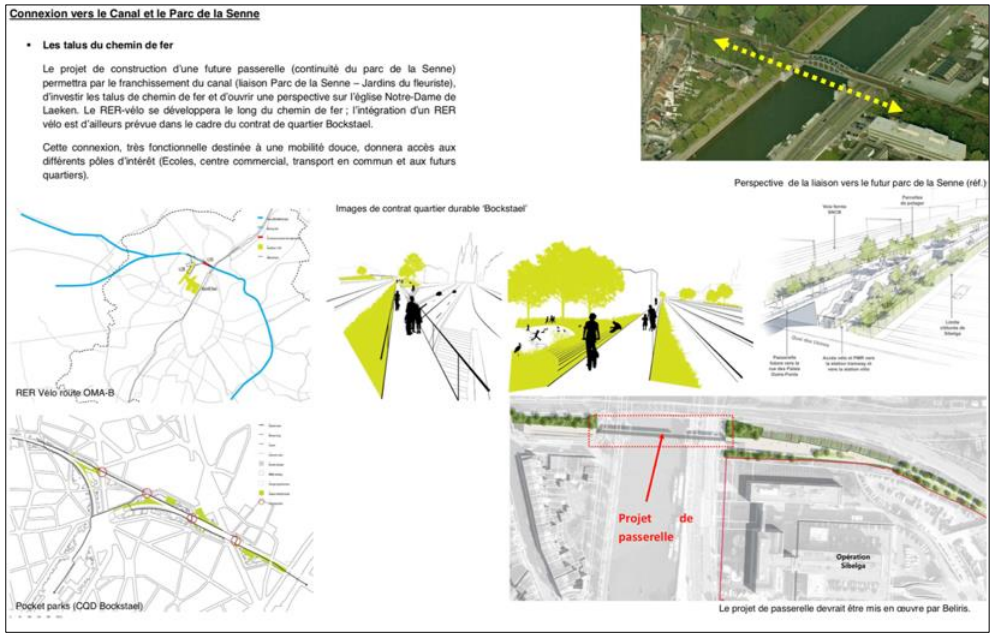


Figure 12. Green Network – GPDO, Brussels-Capital Region, Phase 2: Operational Part, Concept Study for area L28, Canal – Park de la Senne (AGORA & IBGE, 2014)

Good Move (2020):

In line with the green and blue network program, in *Good Move* (2020), Brussels Region defines the implementation of a *Bicycle PLUS axis* along railroad line L28 as an important step in the development of a structuring regional bicycle network promoting fast connections on a metropolitan scale. For this type of axes, separate bicycle facilities are preferred over mixed traffic.

Tour & Taxis: Masterplan (2007) and Specific Zoning Plan (2017):

The Specific Zoning Plan (BBP) "Tour & Taxis" (Stad Brussel, 2017) defines the legal framework for the development of a public park at Tour & Taxis. It builds upon the Masterplan (Ateliers Lion, MSA, MODUS Expert, CITEC, & Smets, 2007). In both plans, a 'public' park connects the Thurn & Taxis site with the Belgica and Pannenhuis metro stations. It was considered as the first part of the development of a larger green network.

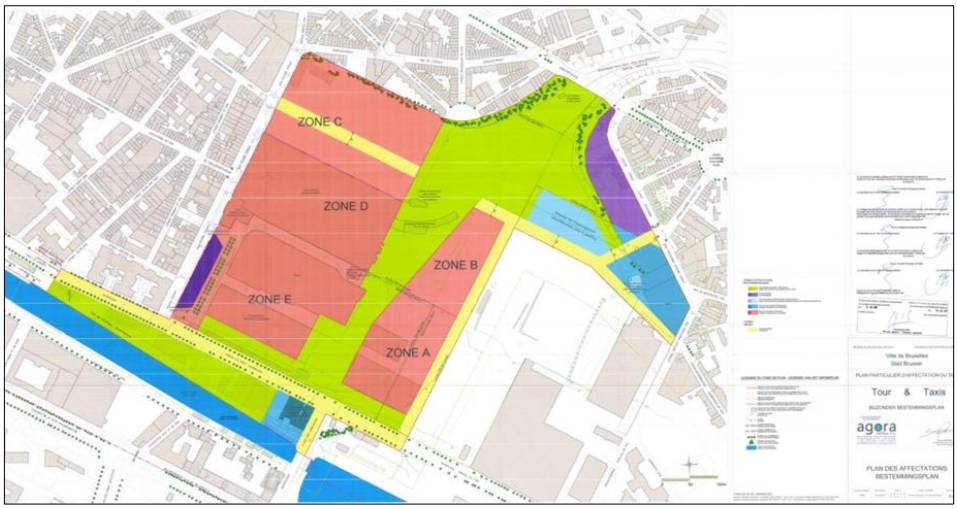


Figure 13. BBP Tour & Taxis, Brussels (Agora, 2017)

PAD/RPA Weststation (2021):

The Brussels Region acknowledged in 2001 the development potential of the wasteland behind the Brussels West railway station and the railway that divides the municipality of Molenbeek into two parts (Perspective, 2021). The restructuring of this area with good public transport connections is being developed as part of a territorial strategy, supported by a *Directive Plan of* Implementation (PAD/RPA). The PAD/RPA (TAKTYK e.a., 2021) foresees the development of a green park area as part of a green network and the management of its transitory processes. The plan integrates the development of comfort zones in the future green space and neighborhood. The master planning process followed the definition of an *Urban Renovation Contract* program (TAKTYK, 1010, & ALIVE ARCHITECTURE, 2017) for a larger urban area overlapping both the municipalities of Anderlecht and Sint – Jans - Molenbeek. In recent years, multiple neighborhood contracts have been realized in the area surrounding the site, and at the time of the study, two sustainable neighborhood contracts whose perimeter extends around the abandoned site were launched.

Brussels Region considers the West Station site as an important metropolitan-scale landscape network (Perspective, 2021). Brussels acknowledges one the one hand its position in a vast system of open spaces, at the intersection of the green network following the L28 railway line from Bockstael to Brussels South Station and a west-east green axis connecting Pajottenland to the center of Brussels and other hand how this open space is bordered by large urban projects or vast blocks of houses. Brussels identified four development stages of the derelict West Station site, from the pioneer stage to more advanced stages. On the one hand, several locations introduced a development potential via their rich or unique fauna and flora. On the other hand, soil contamination forms a major concern for the opening and development of the site.

With this plan, in terms of open green space, Brussel Region aims to open the site to its surrounding neighborhoods and to structure it around the public transportation hub, to provide quality and accessible open spaces including a park of at least 3 hectares, the creation of a zone exclusively reserved for the development of biodiversity and new public spaces that primarily infrastructure active modes of transportation, including a wide bike-walk promenade along line 28 and facilities enabling active modes of transportation to cross railway line 28 in at least two places. In doing so, the region aims to preserve, if possible, industrial heritage and install a transitional management to support the gradual opening of the abandoned site in conjunction with trying out possibilities for use in collaboration with residents and future users. Urban sound is addressed from a perspective on nuisance and acoustic comfort. The plan proposes the implementation of acoustic systems based on nuisance control at the source and in addition, extra care for the facades of existing and future homes.

Figure 14. Weststation – Synthesis plan © perspective.brussels - Taktyk, Alive Architecture, 51N4E, Tractebel, ABO (2021)

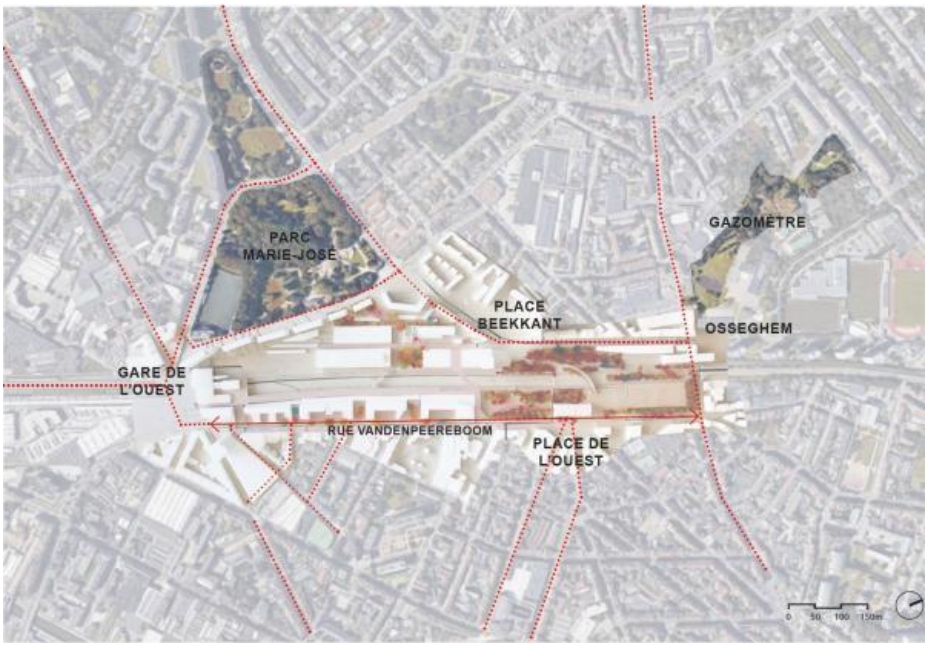


Figure 15. Weststation site – integration of the project in the neighbourhood © perspective.brussels -Taktyk, Alive Architecture, 51N4E, Tractebel, ABO (2021)

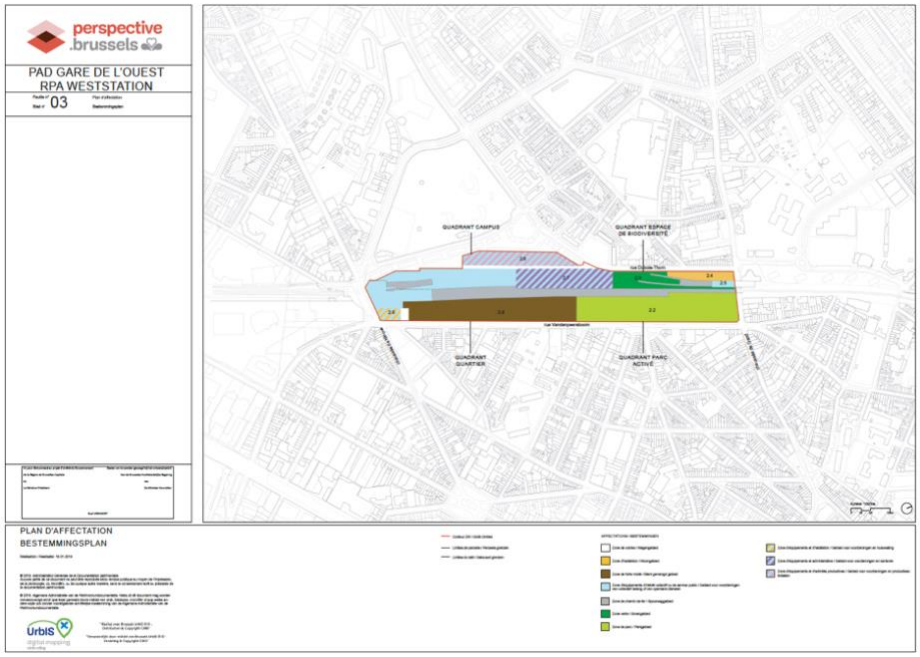


Figure 16. Zoning RPA/PAD Weststation © perspective.brussels -Taktyk, Alive Architecture, 51N4E, Tractebel, ABO (2021)

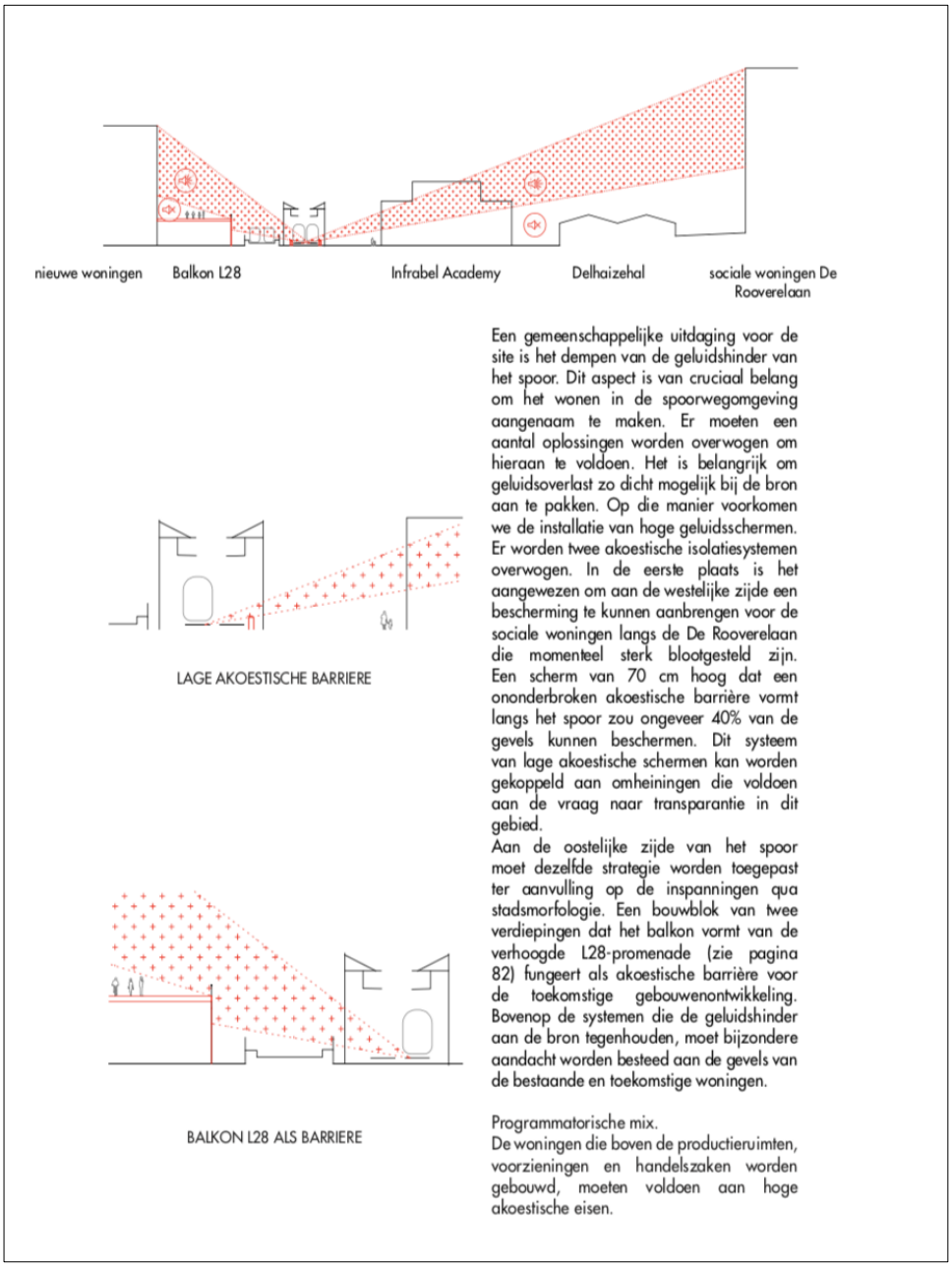


Figure 17. Urban Acoustic Strategy, RPA/PAD Weststation © perspective.brussels - Taktyk, Alive Architecture, 51N4E, Tractebel, ABO (2021)

Regional Canal Plan (2015):

Brussels first *Canal Plan* has been adopted for implementation by the Government of the Brussels-Capital Region in 2015 (Maatschappij voor Stedelijke Inrichting, 2015). In the area where the railway line L28 crosses the canal, this plan is guiding and therefore relevant to the research area. Via its Canal plan, Brussels Region searches to achieve a set of objectives in the central part of the city, on both sides of the Canal. The Plan focuses on 1) economic activity and the integration of workspace and housing; 2) the creation of housing adapted to the population growth for all types of households; 3) the creation of pleasant, attractive public space promoting the Canal Axis; 4) the reopening of the Senne and the Canal as structuring network; and 5) conditioning of an open city in terms of functions and diversity among its existing and future inhabitants. Concentrating on an area situated in between the railway line and the canal, this plan is also decisive and therefore relevant to the case study.

Quiet.Brussels (2019):

Following the Directive 2002/49/EC (as cited in Brussels Leefmilieu, 2019), Brussels Capital Region has developed and approved the plan *Quiet.Brussels* (Brussels Leefmilieu, 2019). The plan defines some actions, rather than norms, focusing on the reduction of noise and vibration, to lower the health impact of (sonic) vibrational nuisance. The plan emphasizes effective governance, using an integrated approach to noise control in transport, construction, and urban planning policies and collaboration on issues that intersect with different policy areas. For example, focusing on traffic, an influential and common source of sound and the experience of nuisance, Brussels Region proposes a coordination between Quiet.Brussels and Good Move (2020). In the same way, strategies for reducing

noise pollution caused by the renovation of buildings have been linked to energy-air and quality-climate strategies.

Figure 18. Quiet.Brussels: Logo (Brussels Environment, 2019)

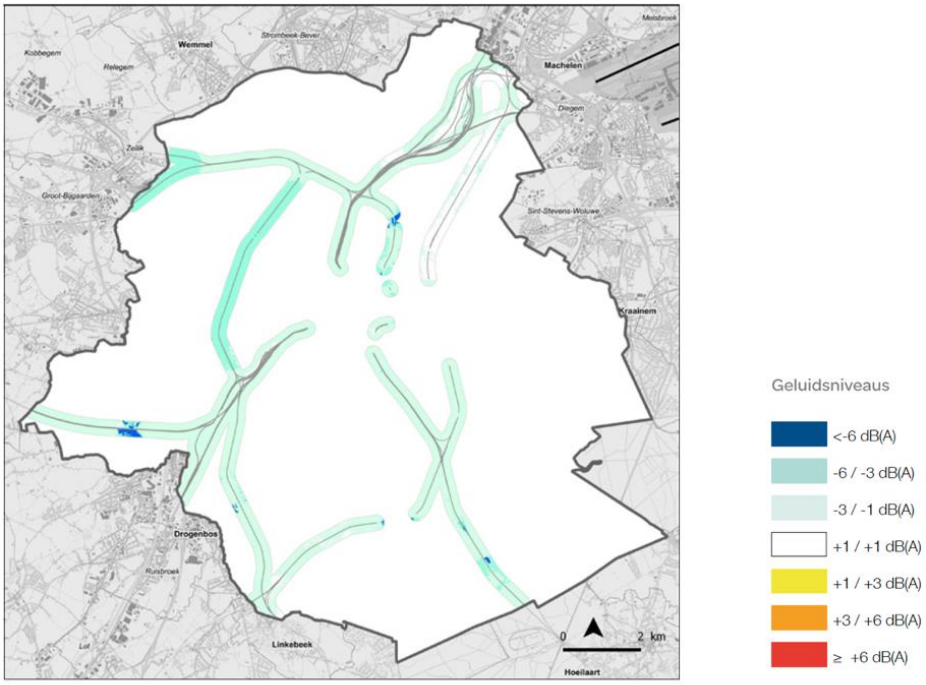


Figure 19. Quiet.Brussels: Scenario of rail traffic in 2025. Difference map of noise benefit. (Brussels Environment, 2019).

Quiet.Brussels contains multiple orientations for action. It assumes an order of importance, with noise-prevention as the most important and urgent type of action. This one is followed by the instalment of dampening measures. A third orientation concerns the insulation and suppression of noise. The *Quiet.Transport*

section states that (sonic) vibrations must be taken into account in every mobility plan and every physical (re) development. The plan doesn't introduce a clear monitoring system. It doesn't offer a central qualitative approach.

The section *Quiet.Citylife* introduces 'comfort zones' as a key tool. The Brussels Region wants to create comfort zones in neighborhoods and green areas by means of preventive measures, spatial planning measures and the promotion of high-quality soundscapes. Brussels Region defines an acoustic comfort zone as an area in which the noise level is below 55 dB(A) for at least 50% of the surface area. This implies the affirmation of the principles for the protection and improvement of acoustic comfort zones. Brussels Region proposes different actions, including the use and promotion of existing spaces, the protection of courtyards of blocks of houses, the determination and maintenance of high-quality noise environments. The latter being understood as the creation of noise nuisance, the avoidance and addressing of background noise by masking its effects, etc. And this for public spaces, and more specifically the green areas, in accordance with Brussels ambitions for green space. In addition to protecting or improving these areas, Brussels Region wants to ensure the development of new comfort zones in the current problem areas.

Brussels Region focuses on the creation or maintenance of 'acoustic comfort zones' (or Q-Zones), and the improvement of zones that can be exposed to a sound pressure level of more than 55 dB(A) in 1) green space development aligned to a planned reduction of motorized transport, and the protection of fauna, 2) the SVC urban renewal contracts and the DWC sustainable neighborhood contracts, particularly in neighborhoods where there is a lack of silence, and 3) in the context of the pedestrian walkways development projects.

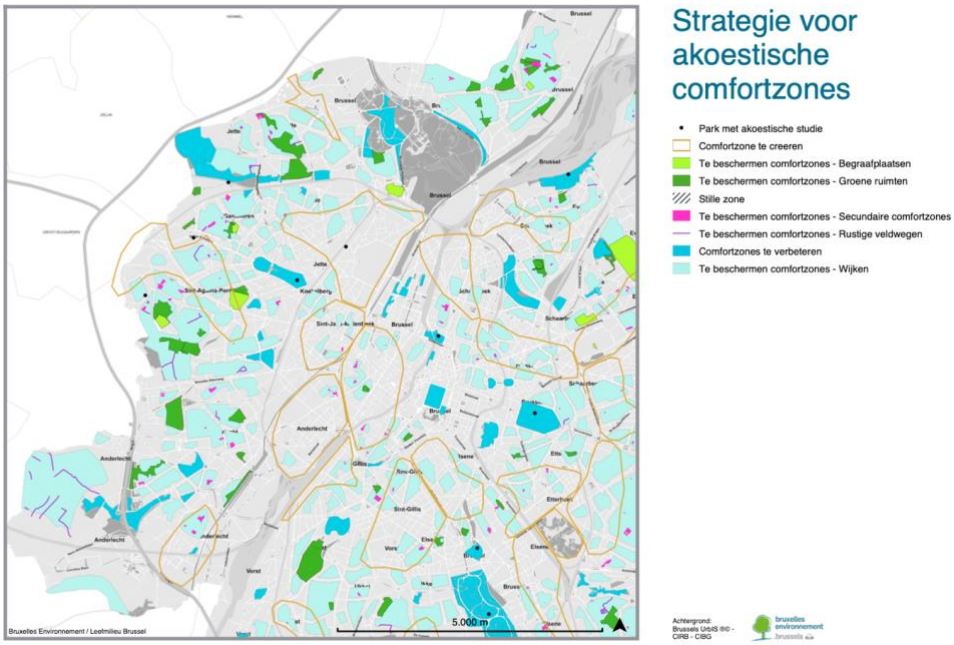


Figure 20. Quiet Brussels: Strategies for Acoustic Comfort. (Brussels Environment, 2019)

Adopting a comfort perspective, *Quiet.Brussels* delineates the Tour & area as a zone where an acoustic comfort zone should be created. In the area of west station, the focus is on improving an acoustic comfort zone in the area of Park Marie José and the protection of acoustic comfort around the social housing complex at Beekkant Square.

*Quiet.Brussel*s emphasizes Brussels Region's ambitions for the improvement of the quality of the sonic environment where needed and to maintain where the quality is fine. Taking the regulations of the RPAs and the BPAs, according to local specificities into account, it recommends 1) the creation and maintenance of quiet courtyards or facades for housing, 2) buffer zones aggregating fewer sensitive functions, or zones where construction is prohibited, located on the periphery of thoroughfares or noisy transport infrastructure projects, and 3) the design, improvement, and protection of 'acoustic comfort zones.'

Understanding urban planning processes as an occasion to (re-)define or adjust specific sound and visual environments, Brussels-Capital Region stresses how the development and renovation of sustainable and habitable neighborhoods can go along with a well-thought-out soundscape project protecting the population from traffic noises. *Quiet.Sensitize* suggests a project for a methodological guide that can be used in urban sound planning or the design of a 'soundscape' for future neighborhoods.

No real monitoring system is available yet. In the future, Bruxelles Environment wants to share updates on the instalment or maintenance of acoustic comfort zones in the context of development projects, both in terms of mobility and spatial planning. This includes an update of the cartography and the search for specific sound indicators for each land-use. *Quiet.Brussels* does not mention the use of qualitative indicators. Under the section *Quiet-Sensitize*, various actions have been put to the fore to promote the upgrading of acoustic comfort zones or Q-zones. To conclude this reading of Quiet.Brussels, the plan specifies that Brussels Region is following scientific research explaining the impact of noise pollution on health.

3.2.1.2 Performative and Collective Listening Space

Making and listening to music in public space forms an integral part of the lives of many young people growing up in the urban area the railway line L28 crosses (Perspective, 2019). For several decades, French-speaking hip-hop scenes dominated by boys and young adult men of immigrant background have been producing and performing music in open railway space of the West Station area, the neighborhood of Beekkant Station, as well as in the transformative railway spaces of the Tour & Taxis area (Des Claques, 2011; La Révolte, 2011; Wz, 2019; Sky feat 3robi, 2019). These, mostly informal, performative practices take place in an urban context that is marked by on-going urban renewal processes but also enduring social inequalities, precarious employment, and unemployment with a high percentage of youth employment, uncertainty about housing, high school dropout rates and inadequate access to leisure activities (Perspective, 2015; STUDIO020 PAOLA VIGANÒ & WALLOTH URBAN ADVISORS, 2020).

The appropriation of urban space as a performative and collective listening space is territorial in nature. Several of the railway spaces bordering the L28 Railway line have a mixed use welcoming different type of users. Recurring spatial characteristics of the performative and collective listening spaces are a centrality in the neighborhood and the proximity of the dwelling, in most of the studied cases, a social housing complex. Sites that are being used for performative practice are marked by the capacity to expose and represent the neighborhood through performance. Most of the performative and collective listening spaces are often also hotspots or ‘zones’ for crime and rebellion. Most of these urban spaces are heavily policed by means of surveillance technology or street-level patrouilles. In some of the transformative railway spaces, the design or layout integrates a strategy of surveillance and control.

Regional and local development plans have an impact on the design and use of these railway spaces. By defining not just relations and proportions, but also transitory processes, they provide urban context for the division and use of transformative railway space, the development of cultural, artistic, and creative spots. The presence of formal performative and/or listening spaces is often linked to a local or regional development framework with the regeneration of old industrial sites and buildings as key priority. Close to Weststation there is for example the site of Manchester 13-15/17-19, where Brussels Region wants to develop a cultural, artistic, and creative hub by means of a facilitating a coherent temporary project (SAU-MSI, 2021). The plan for this site is to turn buildings at 13-15 and 17-19 Rue de Manchester into a space for cultural, artistic, and creative activity and related facilities such as administrative offices, a multipurpose hall, and artists' residences. The project is framed as a priority project of the 'Heyvaert-Poincaré', the Urban Regeneration Contract (CRU 5) funded by the Brussels-Capital Region. In the framework of the Sustainable Neighborhood Contract 'Around Westpark', the municipality acquired an old industrial building as a new location for the youth center D'Broej Centrum West. In 2020, the Brussels Bouwmeester (2020) launched a call for the renovation project.

Music plays an important role in associating with an urban space, experiencing a sense of belonging, the creation of identity. Young performers, urban youth living in the Brussels L28 railway area search to claim an area, mark territories, through referencing particular places in their lyrics and in their videos. Music is often used as an instrument for sonic demarcation, urban territorialization and the creation of a sense of belonging. By making and performing music in urban space, both musicians and listeners seem to carve out a space for themselves. Also here, how, and where the music is made and performed, reflects some aspects of the spatialities of these transformative railway environments. Some producers explore the connection with other spaces by working with the materiality of sound and

sonic spatial qualities. Not only the text and the video image of a song, also the sound itself connects people to other people and the urban environment. Acknowledging the bodily response to sound as affect, producers, beat makers and sound designers create a sonic backdrop or a 'sound sphere' composed of pulses, tonalities, melodies, and beats introducing to the performative or listening space a dynamic sonic spatiality moving along with the performer and/or listener. This sonic spatiality can be thought of as an intensity composed of intensities or sound as an informational affect that when performed in a space is able to connect both horizontally and vertically with different materials and bodies.

Several sub-genres dominate the Brussels hip-hop scene. 'Trap' is a subgenre of hip-hop music that emerged in the late 1990s in the southern United States. The term trap comes from slang for a place where drugs or other illegal goods are being traded (The Music Origins Project, 2016). Like in other hip-hop genres a song is constructed around bars and hooks but without rhyme, the bounce and jazziness of Nineties production (McCarthy, Jesse, 2018). A drum machine defines its characterizing sound. Compared to Detroit techno and Chicago house, the drum machine is used less mechanically but rather in an elastically, wavy way. McCarthy points to trap music's hold on an overall flatness of effect, its orientation toward the (strip) club, and its effort to transcend self-consciousness and the boundaries of the self. Often samples of machine guns, and screaming sirens pop up. The wandering, overdubbed voice of a rapper floats a bit beside or apart from the pattern that plays a few variations. Acknowledging the central position of bass, the quick instalment of a signature with patterns rolling over, McCarthy (2018) remarks the absence of progress and how some tracks appear "to materialize and dematerialize out of a vacuum" (p. 11).

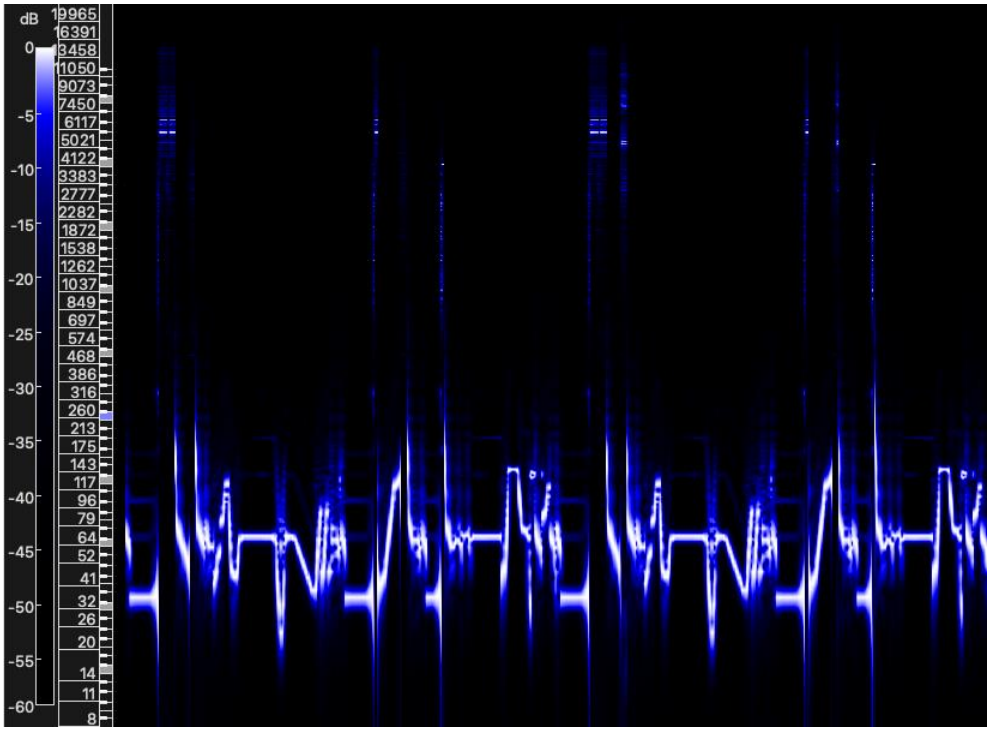


Figure 21. Spectrogram: UK Drill 808 Full Beat (JAKOB ♧ Jakastic Beatz 🐶, n.d.)

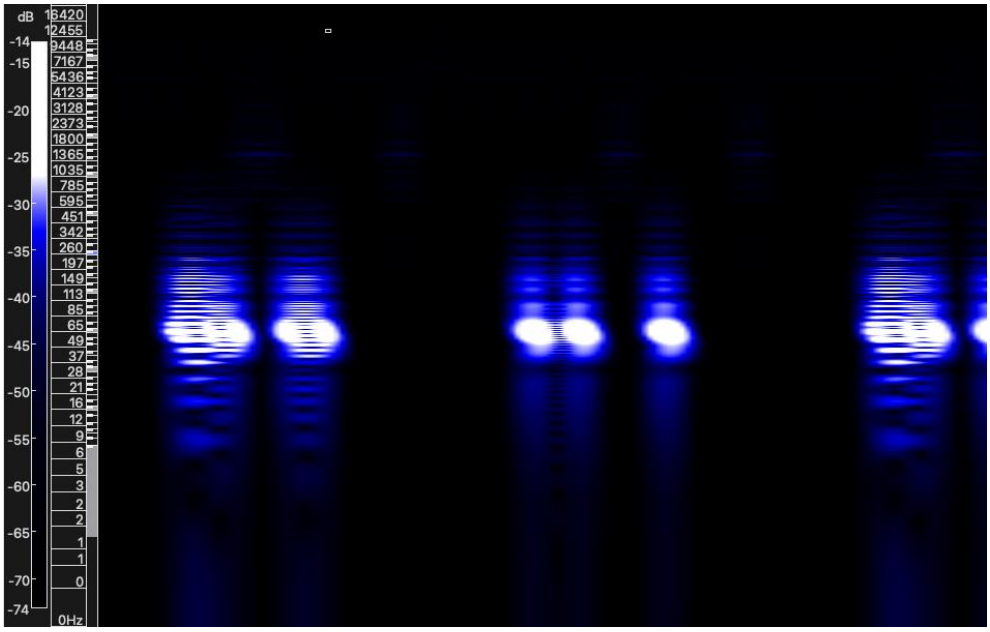


Figure 22. Spectrogram: UK Drill Drum Loop - Syncopated Mixed Beat (LeBlnche, n.d.)

Recently, drill music has become popular in Brussels. This subgenre of trap originated in the early 2010s in the ghettos of Chicago and became big in the UK and is now growing in popularity all over Europe. Drill is a form of trap and a descendant of mumble rap. It is distinctive because of its dark, violent, and nihilistic textual material and doom-laden, trap-influenced beat. The topics constitute an important part, but in this hip-hop subgenre, the sound design differentiates more than anything else. Trap is more upbeat. The beats in drill are grimier and darker. Drill is street slang for the use of automatic weapons. Most drill artists rap about gangs, guns, and street crime but also war. Drill scenes are often linked to youth violence and war. In response to accusations of incitement to violence, Drill musicians state that they do not cause but rather 'report' (Meara, Paul, 2012).

Seeking to perform an atmosphere of fear and conflict, Brussels trap and drill producers use machinic sound samples from video games, gun shots, police sirens, etc. Combining concepts, techniques, and experiences from different popular contexts they construct differing urban sound spaces. For example, there is the application of techniques from video games for the performance of a spatial experience of conflict, and the extraction of sound samples coming from war violence and gunfights. In the music video's the sounds of video games and gun shots are introduced as being part of everyday life and the position of these young men in the neighborhood. One the one hand these sounds operate symbolically but they can also be interpreted just literally: as part of a performance in a real urban space, these machinic and or spatial sounds also connects in a direct way to its urban environment, interacting with its physical, social, cultural, and environmental constellations.

Taking a relational perspective on performative practices, both music making and listening can also be understood as elements of a cultural, social, economic, and political process, resistant, enabling and fun, despite the lack of participation in

urban development processes. Through early informal contacts with young people using the transformative railway spaces along L28 as part of my sonic artistic research projects (Eckhardt & Costa, 2016; Claus, 2017), I noticed that young people who regularly use the sites are mostly unaware of the plans for these sites and the larger neighborhood.

Shifting urban conditions seem to affect the urban sound spaces young people tend to appropriate by performing or listening in the transformative urban railway spaces. The urban transformation itself seems to be incorporated only to be modified to be reintroduced in the urban space. In 2017 and again in 2018, some young musicians and performers reacted with a hip-hop video clip to a municipal decision to cut out public space. Young people who appropriate the old industrial urban railway spaces of the Tour & Taxis and Weststation areas, often because of a lack of alternatives, are being labelled as problematic, as objects to be feared.

3.2.1.3 Recruiting and Operative Centre for Terrorism and Surveillance Infrastructure Space

In 2015 it became clear that this part of Brussels served as the hub and operating base for the Paris attacks on the night of November 13, 2015 (Lasoen, 2019; 2020). The day after the Paris attacks people have been arrested at Osseghem Station, north of the Weststation area. Two brothers who participated in the Brussels and Zaventem attacks of 2016 grew up in the Laeken – Bockstael area.

The Brussels L28 railway area turned out to be not only a recruiting zone for Daesh but also a key operational centre for the Paris, Brussels and Zaventem attacks. Most of the youths were recruited in public space and local cafes, some of which are drugs bars, as there used to be several along the vacant railway sites of West station

and Tour & Taxis. Like other young people who left for Syria (Leman, 2017a; 2017b; 2021), most of the Brussels youth involved in the Paris and Brussels attacks grew up with an urban neighborhood culture prevalent for this part of Brussels. Most of the involved young people belonged to a group of friends, or rather 'a gang', situated outside a youth or sports club. Most of the youth experienced problems at school and/or at home, some of them were involved in criminal activities. Like a lot of young people growing up in socially vulnerable situations in this part of Brussels, most of the Brussels young men that were involved in the Paris and Brussels attacks, depended on public space for meeting their peers and spending leisure time. This was the case for Abaaoud, Salah Abdeslam, Abrini who belonged to the same local gang and for Ibrahim El Bakraoui, who ended up in the so-called 'minor delinquency'.

Following the Paris, Brussels and Zaventem terrorists Attacks, in 2016, the Belgian federal government introduced the *Federal Canal Plan – Plan Against Radicalization and Terrorism in the Canal Area Canal Plan* (Pirsoul, 2016; Lasoen, 2019; 2020). The so-called 'Canal Plan' was introduced by the then federal minister of home affairs, Jan Jambon (N-VA). Initially this action plan only controlled the territory and people of Molenbeek, but later also covered Brussels-City, Koekelberg, Schaerbeek, Saint-Josse, Anderlecht, Saint-Gilles and Vilvoorde. The plan involved a reinforced police presence, a strengthening of surveillance of radicalized people and extra domicile checks. The plan has been implemented via multi-level governance.

Belgium promotes a comprehensive and inclusive approach of the 'fight' against terrorism centered on balance between prevention, repression, reintegration, and aspects of rehabilitation ("Fight against Terrorism," n.d.). Via an inclusive approach Belgium aims for cooperation and coordination between various actors, policy domains and power levels. The Coordination Unit for Threat Analysis (CUTA) taking

care of this coordination, has representatives from FPS Foreign Affairs, Interior, Justice, Finance and Defense as well as the intelligence services, the Financial Intelligence Processing Unit, the federal and local police, the public prosecutors' offices, the Regions and Communities, and the municipalities. In addition, the inclusive approach also aims for cooperation at the international level.

Via the *'Action Plan Against Radicalism'* (Plan R, n.d.) that was introduced in 2005 and revised in 2015, Belgium aims for the prevention of radicalization and violent extremism. The coordination of this plan is done by the national taskforce together with federal services and federated entities. In coordination with Plan R, the Brussels Region, the Flemish Community, and the French Community carry out their own action plans. The action plans to combat violent extremism in the Brussels Canal area and radicalization in prisons are also part of this integrated approach. To reinforce the fight against terrorism, in 2015, the Federal Government introduced new counter-terrorism measures and installed the National Security Council. In 2017, this effort was followed by the adoption of extra security measures and the on-going adaptation of a system for combating terrorism and violent extremism.

Following the *Sixth Belgian state reform* (2013) which has given the Brussels Capital Region a coordinating role in terms of its prevention and safety, commissioned by Brussels Region Brussels Prevention and Security, (BPV), Perspective (BPB), Urban (BUP) and Brussels Mobility (BM) defined a *Guide for the Integration of Security Features in the Public Space* (2019). The actors involved could draw on their experience, and the knowledge sharing, cooperation that happened in the context of recent projects on the topic of urban security, in particularly protection against terrorist acts. The guide is consistent with the "urban strategy on the integration of security requirements in the context of the construction of the European Quarter", which Perspective was commissioned to work out on behalf of the Government of

the Brussels-Capital Region. Brussels Region expressed its ambition to provide a coherent and coordinated response to terrorist threats to Brussels European Quarter, its public space, and the main institutions there. It also builds on the experience from developing a global video surveillance plan that was commissioned by Brussels Region in 2018. The main goal of this guide is to familiarize designers, operators, and managers of Brussels public spaces with principles of physical security and related administrative procedures. The guide references the key principles of "Crime Prevention through Environmental Design" (Security by Design), which provide a general overview of security issues in public spaces and proceeds to introduce various steps necessary for the successful integration of security features. It discusses the possibility of implementing video protection and goes over different types of facilities offered by the regional platform for video protection which was created in collaboration with the CIRB (Center for Informatics of the Brussels Region). The guide aims to address challenges related to city planning, permission procedures and site management. In line with the definition of a strategy for the European Quarter, the focus of the first edition of this guide are terrorist and extremist threats and more specifically, attacks involving ram vehicles.

On the international level Belgium focuses on its cooperation with other member states and institutions of the European Union. Since 2005, the European Union has been focusing on the approval of guidelines for counterterrorism and adoption and operationalization of different measures against terrorism and radicalization. In addition, Belgium is also a member of the Global Coalition against Daesh. Belgium, a non-permanent member of the Security Council (2019-2020), puts the fight against terrorism high on its agenda within the UN framework.

3.2.1.4 Conclusion Transformative L28_Railway Space

Recent projects for railway space development and transitory planning in the Brussels railway area of the L28 seem to be green infrastructure or park space oriented. In the context of urban planning, sound is dominantly discussed with a negative connotation. Following Quiet.Brussels, Brussels Noise Plan approved in 2019, strategic actions focus on reducing noise and vibration referencing research on the health impact of (sonic) vibrational nuisance. The Brussels Region wants to install, protect, or improve acoustic comfort zones in neighborhoods and green areas by means of taking preventive spatial planning measures in development projects of new areas and the promotion of high-quality soundscapes. Brussels Region wants to develop a methodological guide to urban sound planning or the design of a 'soundscape' for future neighborhoods. No real monitoring system is available yet. The plan does not mention the use of qualitative indicators, either. In the future, Brussels Environment wants to update the data on acoustic comfort zones via the development of local projects, both in terms of mobility and spatial planning. I argue that this approach that partly starts from a comfort perspective and mainly relies on acoustics engineering cannot sufficiently consider the dynamics of an urban environment characterized by urban conflict and performance. Open railway spaces along Brussels L28 are marked by a dynamic and mixed use. Both in the Weststation and Tour & Taxis areas, young people appropriate railway sites for performative and collective listening practices. Many of these railway spaces border a social housing complex to which performers self-identify. Several of these locations are known for criminal activities and are under video and street level police surveillance. The L28 railway area was also familiar terrain for Daesh recruiters and most of the Brussels youth involved in the Paris, Brussels and Zaventem attacks and their recruiters. Following the period of attacks, the federal state installed an action plan that involved a reinforced police presence, a strengthening of surveillance of radicalized people and extra domicile checks.

3.2.2 Sonic Cartography (2020 – 2021)

I have studied the potential of sonic materialism for planning and design research via the construction of a sonic cartography for research on sonic experience as the sonic material felt outcome of an entanglement of strategical planning and design, the use of surveillance and/or military tactics, and sound design techniques defining performative and collective listening space.

Theoretical perspectives inspired this practice-led research on sonic cartography in two ways: firstly, following a relational, performative, sonic material research approach, the sonic cartography has been structured around the idea of sonic experience as comprising the physical, non-human, psychological, social relations and affects that surround bodies and social networks navigating the transformative railway landscape; secondly, in line with the sonic materialism and assemblage thinking in urban studies discussed above, I aimed for a shift from the human listener as the central unit of analysis to the study of the contingent and situated enactment of urban sound spaces, sound spheres and processes of acoustic territoriality.

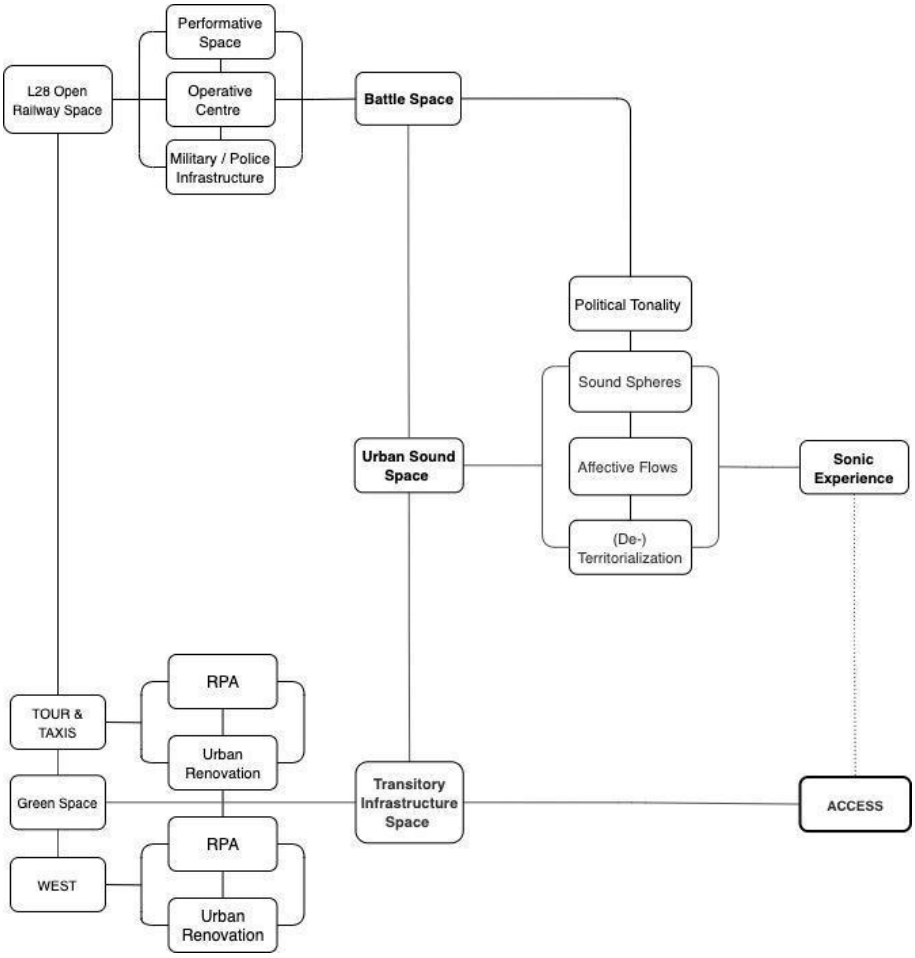


Figure 23. PhD Research Diagram; Flow Case Study – Sonic Cartography

For the sonic cartography or study of the sound environment of the railroad area along the line L28, I have divided the study area into two zones: Zone North and Zone West. Within each of these zones, I studied the sound spaces of various transformative spaces that are today used as performative and/or collective listening spaces.

For the mapping of the selected railway spaces, I experimented with different modi of unhearing via an opening of the research practice to technological enhancements of recording and sound design that prevented human hearing from

being approached as the only domain of sonic experience. Exploring the idea of sound as informational affect, I was less interested in the sonic experience of individual subjects than in the human non-human assemblages composed of material and abstract relations, affective flows, and the production of capacities within these assemblages. Exploring a dynamic perspective on transformative urban space, I focused on both processes and flows in preference to structures and stable forms. I studied how matters and interactions contribute to the integration of small and large relations in an assemblage and condition sonic experience as the felt consequence of a contingent and situated enactment of urban sound spaces, sound spheres and processes of acoustic territoriality. The practice of sonic cartography can be understood as a move away from the perceptive model of the soundscape and the phenomenology of a sonic experience. Exploring the potential of a sonic materialism informed approach, bodies have not been considered as a local subject exposed to physical and social forces but rather as the productive outcome of an interaction between multiple forces involved. In what follows, I will demonstrate how a relational, performative sonic material approach informs an argument for shifting the urban debate on 'acoustic comfort' and 'nuisance control' towards human and non-human mediation involved in the sonic experience of transformative railway space.

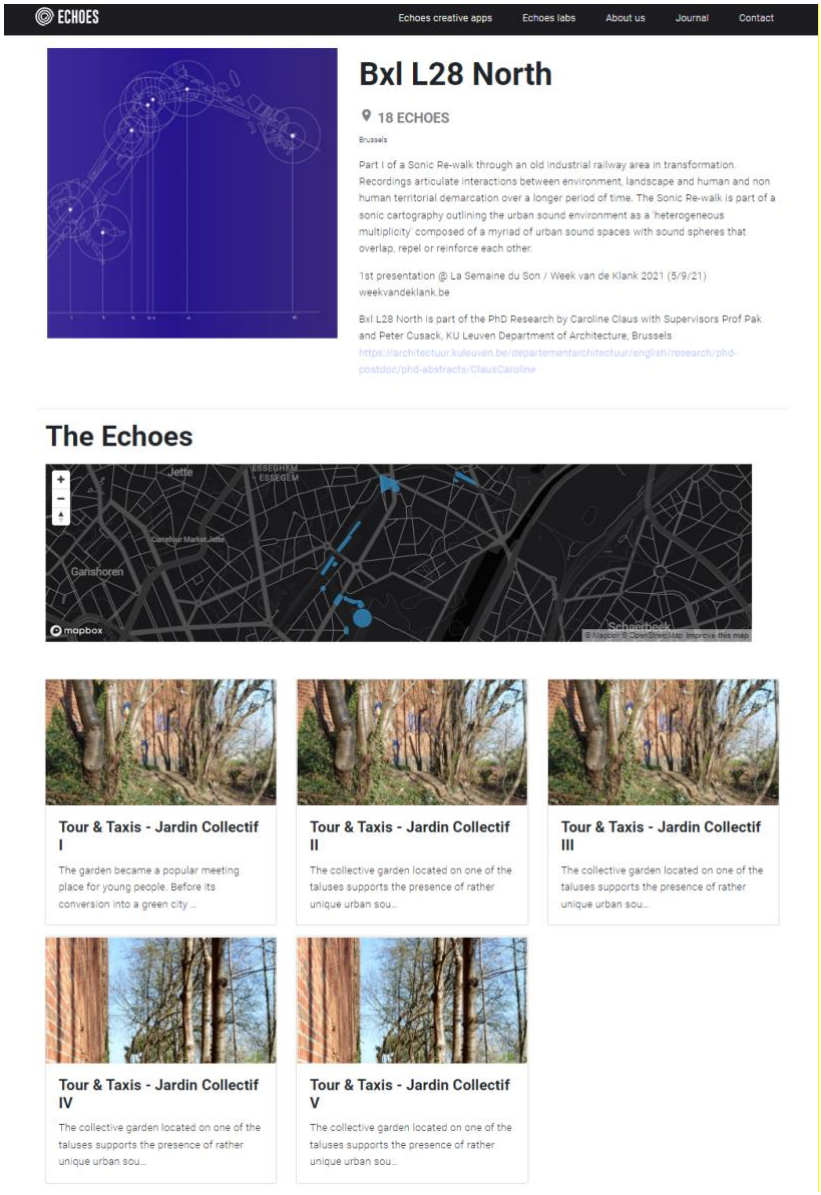
The cartography of urban sound spaces along Brussels line L28 combines the outcome of field recording, interviews, media studies and literature study on the planning context and proceeded in three phases: 1) Outreach-based *tracing* of three different types of transformative railway space that young people use as performative spaces. 2) *Mapping* the entanglement and performativity of unplace, sound spaces and their sound spheres by exposing involved relations, affective forces, and capacities. 3) *Analysis* of sonic experience as the sonic material felt outcome of an entanglement of strategical planning and design, the use of surveillance and/or military tactics, and sound design techniques defining

performative and collective listening space. Explorative research on how the use of sound as affect impacts the accessibility of the studied urban railway space. Explorative study of unplace revealing itself through the eerie experience of space triggered by sound and vibrations navigating real urban spaces.

The sonic cartography structures itself primarily through sound with minimal visual accompaniment. The project involves a whole process of abstracting out space to arrive at space. By cutting away or minimizing the visual, different sonic dimensions enable a study of space that is beyond the visual: the urban sound space. By working with sound, I aim to expand the focus of planning and design research to the temporal, contingent and situated enactment of transformative urban space.

Through practice development in sonic cartography, I have explored the audio paper as a format that employs the soundwalk as an instrument for individual and collective listening sessions on different moments in the research process. I have aimed to engage with the idea of the audio paper as a performative statement using a concrete and site-specific aesthetic of 'site sounds.' I outlined a soundwalk for each zone studied with corresponding recordings and explanatory notes that can be consulted online through the *Echoes* platform. By using the application of this platform, it becomes possible to consult the audio papers as a soundwalk experience on site. Readers are invited to augment their reading of text with an on-site experience and to consult the two audio documents as assemblages of text, image, and audio recordings.

Audio papers - on site experience via Echoes Platform Application (URL):



Bxl L28 North: https://explore.echoes.xyz/collections/hlktnlM2MAThliyy
Bxl L28 West: https://explore.echoes.xyz/collections/3ImAo54T1CIN7rx9

3.2.2.1 Zone North

The Green network development in the northern part of the L28 railway area consists mainly of the development of park space and green connections such as Park Tour & Taxis (2017), Parckfarm Tour & Taxis (2014), Park L28 (2014), Pannenhuis Park (2021) and the pocket parks that were realized within the framework of the Bockstael Sustainable Neighborhood contract (2013). Green connections such as Park L28 and Pannenhuis Park combine recreation with bicycle infrastructure. The maintenance of the sequence of green spaces is split up according to ownership and competences.

After a long period of decay, the railway sites gradually opened to a wider public. On the one hand, the range of space meeting places for local youth has been enlarged both qualitatively and quantitatively via the renovation and installation of sports infrastructure, for example. On the other hand, certain forms of appropriation are noticeably coming under pressure. Over the period of the research, I observed an increase in video surveillance infrastructure, reinforced fencing and the cutting away of plants to increase visibility of both formal and informal meeting spaces. On several locations, governments and owners support the programming and organization of activities in green space ("Parckfarm T&T: Het Park," 2017); ("Jardin Collectif de Tour et Taxis," n.d.). Multiple locations along the railway line feature in the music video clips produced by local hip hop artists. Young people, adolescents, and young adults, both male and female, also use these railway spaces for collective listening practices. Using outreach- based techniques of observation and tracing, in the northern part of the L28 railway area, I identified three different types of transformative railway space young people use for performance and collective listening: (1) North Park area: Park Tour & Taxis, (2) North Metro area: Axis Belgica - Pannenhuis, and (3) North Rail area: Axis Tour & Taxis - (Old) Bockstael.

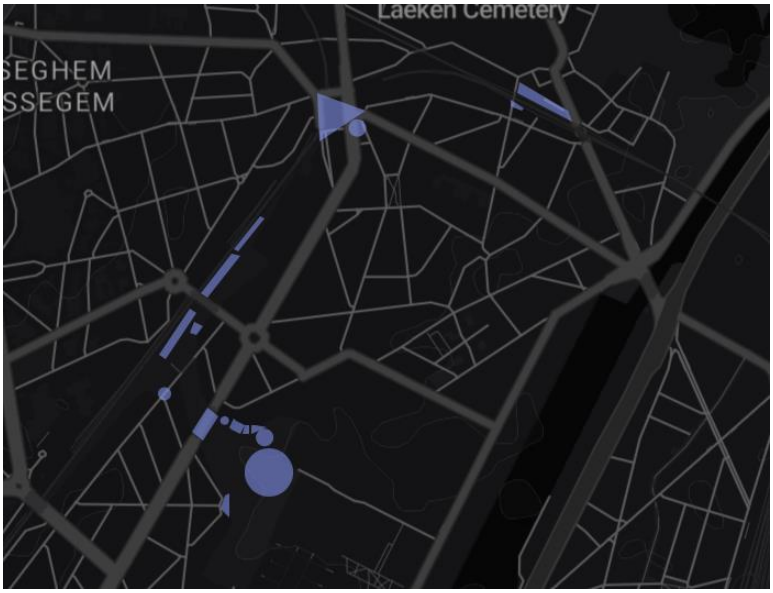
Figure 24. SOUND WALK Zone North (2019)

Figure 25. TRACING Urban Sound Spaces in Zone North (2020)

(1) Sonic Cartography North Park Area: Park Tour & Taxis

Sound Walk

As part of the sonic cartography, I outlined a soundwalk for Park North Area with corresponding recordings and explanatory notes which can be accessed using the Echoes application during a site visit. The augmented sound walk allows for on-site consultation of the research results.



URL to the Online Audio Paper 'Bxl L28 North': Park Area
(Echoes Platform):

Bxl L28 North:
https://explore.echoes.xyz/collections/hlktnlM2MAThliyy

Recording (1) Tour & Taxis - Frozen Wetland (2021)
Recording (2) Tour & Taxis – Pont Jubilé (2014)
Recording (3) Tour & Taxis - Jardin Collectif I (2014)
Recording (4) Tour & Taxis - Laekenveld (2020)

Tracing

The Specific Zoning Plan “Tour & Taxis” (Stad Brussel, 2017) defines the legal framework for the development of a public park at Tour & Taxis. It follows the Masterplan (Ateliers Lion, MSA, MODUS Expert, CITEC, & Smets, 2007). In both plans, a ‘public’ park connects the Thurn & Taxis site with the Belgica and Pannenhuis metro stations. It has been considered as the first section in a larger green network.

The development of the green network connecting the Canal via the Tour & Taxis Site and open railway space along L28 with Belgica and Bockstael stations, follows the idea of a visual corridor, a ‘valley’ to be represented as a side stream of the river the Zenne (Desvigne, 2011). The topography of the site allowed the inclusion of existing talus and the installation of gently sloping hills. On this location, water manifests itself in different forms such as wetlands, trenches, vegetated water. The management of water has been a fundamental principle for the evolutionary development of the network here. The transformation includes both natural and artificial components of the existing old industrial railway landscape such as its topography with fauna and flora of the talus to maintain their function as ecological corridor, three visual axes visually connecting the site with its surroundings, as well as the conservation and re-use of industrial and port heritage. One goal was to enable by design a flexible use and therefore not to determine functions in advance.

The landscaping of Park Tour & Taxis by Bureau Bas Smets (2012-2017) preserved the panoramic views to the canal and the Brussels North Manhattan Skyline. The old rail yard has been converted into a dry river valley with the ballast of former tracks stored underground enabling a water reservoir for the site's on-going development. Today the park welcomes recreation, sports, and informal

performance. Extensive fields of grass bordered by ditches stimulated the formation of bodies of water, reminding the affluent of the Senne river that once existed here. On and alongside the taluses, fast-growing trees have been planted without disturbing the panoramic views. The collective garden, located on the talus on the right side, has been preserved.

The open railway space transformed into a park has a long history of temporary use, including Le Début des Haricots' reviving of the *Jardin Collectif de Tour & Taxis* end of the 2000s (BRAL, 2017). Since 2010, a group of residents has been taking care of the garden project, this in agreement with the owner of the site, the private developer.

On 30 January 2010, one of the brothers, Ibrahim El Bakraoui, together with two companions, one of whom had been a youth animator in a temporary project at the privatized Tour & Taxis site, failed in their raid on a Brussels exchange office. In Laeken, El Bakraoui fired at the police with a Kalashnikov. One officer was heavily injured. El Bakraoui and his companions were arrested in a side street, north of Tour & Taxis. In 2014, he was allowed to leave prison. A year later, he was arrested at the Syrian border. He managed to escape and disappeared under the radar until he reappeared blowing himself up in the departure hall of Brussels Airport together with his companions ("Het parcours van Ibrahim El Bakraoui," 2016).

Figure 26.North Park area - Park Tour & Taxis: Le Début des Haricots' reviving of the Jardin Collectif de Tour & Taxis - Construction Performative Space (Claus, 2009)

Figure 27. North Park area - Park Tour & Taxis: Tivoli - Abandoned Playground (Claus, 2010)

In 2014, as part of Brussels Environment's festival Parck Design, the nearby greened railway track connecting Park Tour & Taxis with Park L28, was transformed into *Parckfarm Tour & Taxis* (Alive Architecture & Taktyk, 2014). From within its *Farmhouse* (1010, 2014), a collective of residents supported by professionals coordinates a program of activities. This is done in consultation with different Brussels authorities, and with the consent of the developer of Tour & Taxis, owner of a part of the land here. The alternation of green railway spaces, each with a different design and program, introduced a variation of urban sound spaces.

Figure 28.TRANSFORMATIVE RAILWAY SPACE – PARK NORTH

Mapping

Relations constituting the assemblage of the 'transformative railway space' of *the North Park area: Park Tour & Taxis* are listed (in no particular order) as follows:

Railway Space	Spatial Composition	Planning Context	Phase	Usage	Conflict
T&T; Jardin Collectif; Av Bockstael;	Railway Infrastructure Space; Talus; Greenspace	Green & Blue Network; Masterplan; Urban Renovation;	On-Going Negotiation; Realization;	Jardin Collectif; Meeting & listening space:	Land Ownership; Local Hip-Hop Scene; 'NEET' youth;

1020 Laeken	Infrastructure; Wetland	Federal Canal Plan; Acoustic Comfort		Informal economy: Criminal activity: Surveillance	Gardeners; Surveillance; Ecological value; Criminal Activity; Recruiting Terrorism

Table 1. Transformative railway space assemblage – Park North

For this site, I have identified relations, affective forces, and capacities constituting the dynamic assemblage of an 'urban sound space', performative 'sound spheres and processes of acoustic territoriality. In doing so, I explored how these dynamics relate to accessibility of transformative railway space, and unplace.

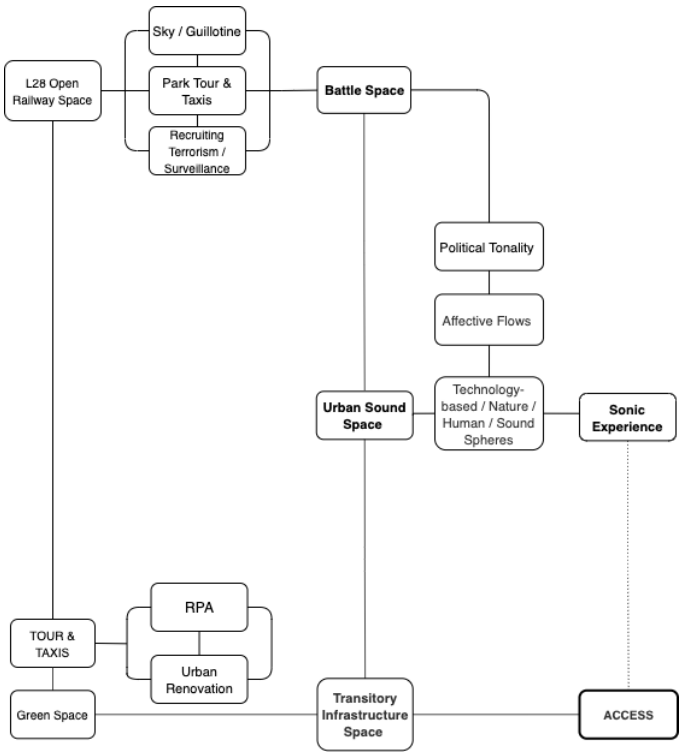


Figure 29. Urban Sound Space - Park North

Relations:	Affective Flows	Capacities	Micropolitics
Spatial: Horizontal Railway Infrastructure Space; Green infrastructure space: garden and park space Military, Private and Police Surveillance Infrastructure; Construction sites; **Socio-spatial:** Gardeners Visitors; Police; Military; Private Surveillance	**Youth:** Music; Voice; Actions **Gardeners:** Gardening Sounds and Rhythm; cut out of sounds **Garden:** Environmental sounds wetland Non Human **Construction Sites:** Machinic Sounds, Engines; Fences; **Surveillance:** Opening up space; Sounds surrounding Sirens; Helicopter sounds; EM infrastructure	**Youth:** Producing, Performing sounds of crossing; Destruction Sounds; Social Territoriality, **Gardeners:** Producing, Performing sounds Control activity, other sounds and cut out of sounds **Authorities:** Control, cut out, adding Sounds; Instalment Maintenance Vacuum; **Planners and Designers:** Definition of conditions **Private Companies:** Decision control, cut out, adding sounds	**Private Companies:** Volumetric Control, **Non Human actors:** Sounding, lack of power, **Garden collective:** support ecological environment, awareness raising. **Youth:** cohesion, resist, **Political Tonality:** Cut out intimacy Visibility > audibility Intro surroundings **Micropolitics Research:** Social Researcher, Ethics; Crossbenching

Table 2. Urban Sound Space Assemblage – Park North

Sonic Material Analysis

Given its central location, the Tour & Taxis Park offers a relatively large amount of open space. This openness can be experienced both visually and aurally. The urban park allows for listening at long distances. Compared to the surrounding neighborhoods, the urban sound space of Tour & Taxis Park is relatively quiet. Nonetheless, it reveals itself to the human listener as a dynamic space combining different sound spheres. Human activity brings in multiple human-centric spheres traversing the sound space according to the season, time of day. Activities on construction sites, the organization of festivals and a gradually increasing and diversifying appropriation of the central green space reflect audibly the environmental and social transformation of the site over a period of time. Traffic flows occasionally sparked by a sliding siren contribute to a distant ambient drone of the urban sound space. Activities in the surrounding neighborhoods manifest themselves first at the edges of this urban space from where they tend to blend gradually inward. Sonic and/or non-audible vibrations, surpass many physical demarcations, in doing so they transmit activities over some distance.

Spheres can occur performer-less, following a structure of seeming randomness. The valley topography allows heavy rain or storm to dominate volumetrically, to become all-pervasive. The same applies to temporary festivals or the sliding and swelling drone of an airplane, but the silence caused by absence during the lockdown also manifests itself volumetrically. The presence of water in all its various forms generates non-anthropocentric activity. On the one hand, there is the possibility of human non-human interaction; on the other hand, a frozen wetland, for example, can install a totally non-anthropocentric sphere.

Amplified recording exposes the structural cracks of the Jubilee Bridge. The performance of infrastructure under traffic depends as much on the supporting

characteristics of the foundation and embankment soils as does the strength and stability of bridges. The Jubilee Bridge is an iron, Art Nouveau structure, that connects Avenue du Jubilee with Avenue Emile Bockstael. It was built in 1905 following a design by engineer Frédéric Bruneel. The bridge consists of three successive spans. Until 2000, the railway line L28 was underneath, connecting the western ring railway line with the Gare Maritime terminus. Since 2007 the bridge has been listed as heritage. In 2021 the owner SNCB and Brussels Region agreed to invest together in the renovation with the sale of the bridge to the region.

The wasteland that preceded the park is still present in one area. It offers a listener a rather generated field of randomly generated sets of acoustic waves. Some of this randomness is now somehow replicated by opening the park to a flexible usage, with people walking, playing in various locations. This gives a pointillist effect, but it is not nearly as unpredictable and layered as the sound space of the wasteland. As it stands now, the urban sound space is significantly more human centric, but it lacks the sense of glittering infinity that it possessed for a long time as vacant railway land.

Figure 30. North Park area - Park Tour & Taxis - Marshland (Claus, 2021)

The collective garden located on one of the taluses supports the presence of rather unique urban sound spheres such as those generated by the collective gardening, cultivating the soil and gardeners interacting with plants, trees, and animals. The presence of trees and bushes attract different animals. This contributes to a combination of different intense sound spheres. The urban sound space of the garden stimulates careful listening. Relatively silent spheres offer quiet zones and moments. Its intimacy allows for an increased sonic clarity and makes a vivid exploration of uncanny sonic phenomena possible. Before there was a beehive here. It was destroyed during a conflict among gardeners. For a long time, the section in the back of the talus was squatted.

The garden has become a popular meeting place for young people. Before its conversion into a green city space, the site of Tour & Taxis offered several of these locations. The disappearance of other locations, the presence of an agora and the possibility of hiding make this place popular among local youth today. The young people, primarily male but female as well, mostly live in the surrounding neighborhoods. It's not necessarily always about the same group and it's more than a group: these are networks with young people who go out, young people who come in (Bravvo, personal communication, 2020). Often, they are young men who share the same reality: rapidly transforming urban context, socio-political, economic position, and socio-cultural interests and experiences. A hip-hop sound is present here. Young people are often caught up in the real-time magic of a sonic sphere performed in a hip hop track. There is a local hip-hop scene associated with the social housing complex at Rotterdam Street and Laekenveld Square, situated at the top of the left talus of Park Tour & Taxis.

Figure 31.North Park area - Park Tour & Taxis: Jardin Collectif (Claus, 2021)

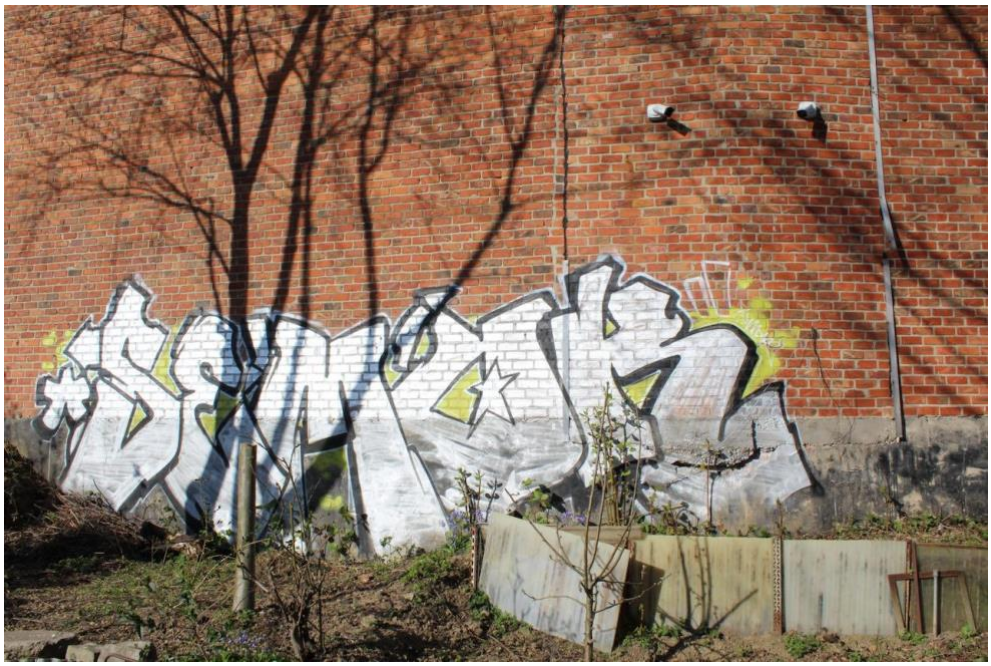


Figure 32. North Park area - Park Tour & Taxis – Jardin Collectif (Claus, 2021)

Last winter, one of the firms located in the buildings adjacent to the garden decided to cut down trees against the wall so that it could install video cameras. This operation was preceded by the removal of trees on the border with the park a year earlier. Together with the trees, a part of the intimacy of this space disappeared. Spheres coming from the park and the surrounding streets are now penetrating the sound space of the garden. The removal of the trees in front of the wall led to an amplified effect of sounds bouncing back. This not only resulted in a loss of intimacy, sonic articulation, and opportunity for non-anthropocentrism, it also introduced a continuous and ubiquitous presence of electromagnetic waves. A mix of this technological based sound sphere with the ecological intensity, persistent intimacy of the garden works on many levels—you can zoom out, you can zoom in, or you can drift somewhere in between, but no matter what position, human – nonhuman, the sound space ends up enveloping human listeners.

Figure 33. North Park area - Park Tour & Taxis:

Screenshot - Video by Sky feat Zvdu17 – Yanso (2021). Millions d'euros.

https://www.youtube.com/watch?v=nJX3N8nPQkI

Sky is a well-known rapper in Brussels. He is associated with *Guillotine Records* label and has been making music for a longer time, exploring several styles. He has

collaborated with various people, producers and rappers from the neighborhood, rappers from other areas in Brussels and performers from abroad (Sky feat 3robi, 2019; Sky feat Zvdu17 - Yanso, 2021). His recent track performed at Laekenveld Square with the Tour & Taxis housing construction site in the back, introduces a sound sphere marked by strong UK influences and sampling culture. Overall, it has a more aggressive clean edge. There is a quite articulated interest for sonic spatiality. Spatial sound effects interplay with video images and text. There is also a radio voice dropping war announcements from the background suggesting other spaces. Other effects used are phrasing of delays and reverbs to create spaces around the verses. This hip-hop track is rich in sonic spatiality projecting the listener into an aggressive but delicate real and moving sound sphere.

Sonic material analysis exposes the contingent and situated enactment of the urban sound spaces and various sound spheres that continuously or intermittently overlap at several locations. Some of these enactments such as a radio voice dropping war announcements into locally performed music introduce a political tonality and are involved in processes of acoustic territoriality. Through literature review on the context of planning, a recurrent practice of individual field recording, and analysis of (popular) media collected over time, I was able to account for sonic experience as the result of an intertwining of strategic planning and design, the use of surveillance and/or military tactics, and sound design techniques that define the performative and collective listening space. This triangulation of methods and sources allowed me to trace transitory railway space as unplace revealing itself through the eerie experience of an urban space triggered by sound and vibrations navigating real urban spaces. The research points to the possibility of sonic strategies and tactics being used in controlling the accessibility of the studied urban railway space. The outcome of the analysis indicates a need for further research on the role and position of sound and vibration in relation to accessibility of transformative railway space.

(2) Sonic Cartography North Metro Area: Axis Belgica – Pannenhuis – Bockstael

Sound Walk

As part of the sonic cartography, I have outlined a soundwalk for the North Metro Area with corresponding recordings and explanatory notes which can be accessed using the Echoes application during a site visit. The augmented sound walk allows for on-site consultation of the research results.

URL to the Online Audio Paper 'Bxl L28 North' : Metro Area (Echoes Platform):

Bxl L28 North: https://explore.echoes.xyz/collections/hlktnlM2MAThliyy

Recording (1) Axis Belgica – Pannenhuis Park L28 - Green Connection (2014)
Recording (2) Axis Belgica – Pannenhuis Park L28 - Blue Zone (2014)
Recording (3) Axis Belgica – Pannenhuis Park L28 - Arriving Train (2014)

Tracing

Park L28 (2014) is both a park and a green link infrastructuring active modes of transport. The Park contains a variety of playing areas, sports zones and relaxation areas. It connects the Belgica metro stop with the Pannenhuis metro stop and the Dubrucq play area with the Parckfarm park, which was created as part of the Parckdesign festival in 2014. The Park was conceived as a component of an overall green structure connecting the Belgica and Bockstael metro stops with the Tour & Taxis site and further down to the canal. This green corridor has already been partially implemented today.

Pannenhuis park opened in April 2021. Following the L28 and connecting to Park L28 it connects Bockstael station and Pannenhuis station with Belgica Station. It is the last section, covering an area of just over 2 hectares. It was the missing link between Bockstaelplein, Thurn and Taxis site and Havenlaan. The project, a design by Landinzicht and Baukunst, infrastructures soft mobility and highlights natural elements such as woods and a wetland area.

Figure 34. North Metro Area - Park Pannenhuis (2021)

The realization of *Pannenhuis Park* responds to Brussels ambitions for the development of a regional green and blue network in this part of Brussels. Conceived as the extension of an already existing green network, it contributes to the fast connection between Belgica station and Bockstael Square. It also gives access to Charles Demeer Street. A new play area connects the park with Bockstael Avenue. The project includes the preservation of a wet zone that is sustained by rainwater.

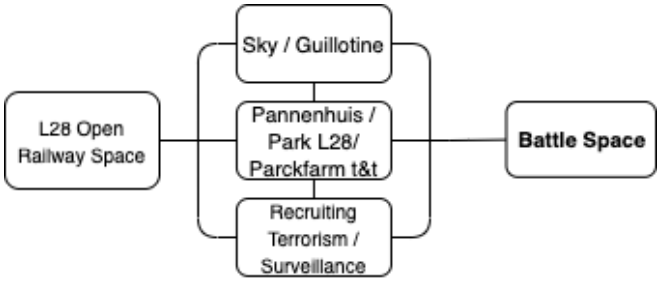


Figure 35. Transformative Railway Space - Metro North

Mapping

Relations constituting the assemblage of the 'transformative railway space' *of North Metro area: Axis Belgica – Pannenhuis – Bockstael* are listed (in no particular order) as follows:

Railway Space	Spatial Composition	Planning Context	Phase	Usage	Conflict
Park L28; Pannenhuis Park; Parckfarm Tour & Taxis; 1080 SJM; 1000 BXL; 1020 Laeken;	Railway Infra structure Space; Green Space; Wasteland; Urban Edge; Wetland	Green & Blue Network; Master Planning; Urban Renovation Projects Federal Canal Plan; Acoustic Comfort	On-Going Negotiation Realization;	Surpassing, Above, Under Park; Green, Social Hub; Private & Public Surveillance;	Land Ownership Private & Public Green Space Management; Arrival new inhabitants / visitors; Introduction Programming; 'Neet' Youth socio cultural programming; Mobility; Homelessness; Recruitment Terrorism;

Table 3. Transformative Railway Space Assemblage - Metro North

For this site, I have identified relations, affective forces, and capacities constituting the dynamic assemblage of an 'urban sound space', performative 'sound spheres and processes of acoustic territoriality. In doing so, I explored how these dynamics relate to accessibility of transformative railway space, and unplace.

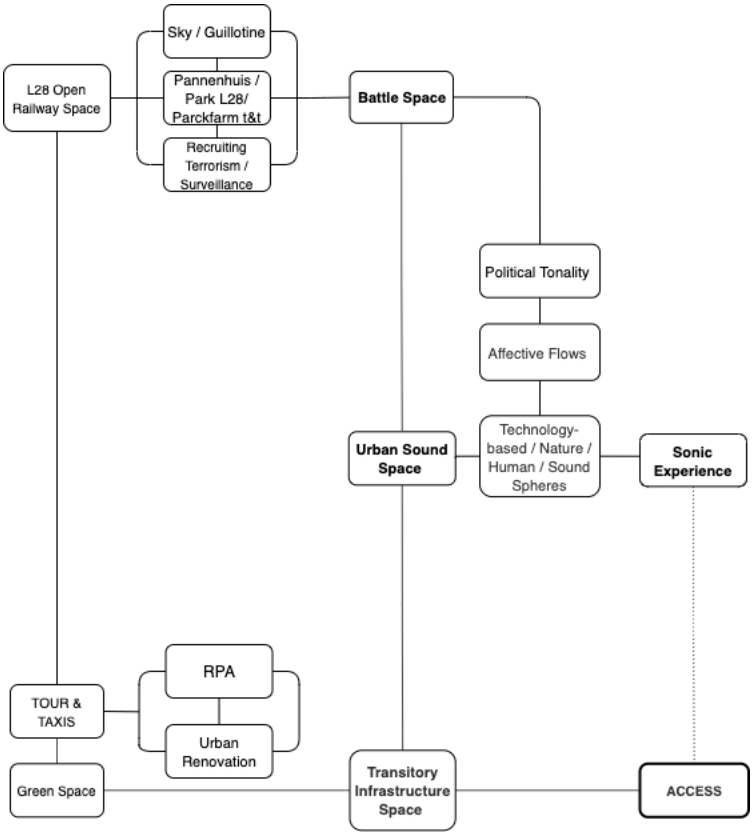


Figure 36. Urban Sound Space - Metro North

Relations:	Affective Flows	Capacities	Micropolitics
Spatial: Horizontal Vertical Railway Infrastructure Space; Horizontal Metro infrastructure Space; Green Network Space; Military, Private and Police Surveillance; Construction sites; Smartphones Fenced Space; Surveillance Infrastructure **Socio-spatial:** Network of youth ; **Old** and New Inhabitants; New Urban Collectives; Police, Military and Private Surveillance	**Youth:** Music; Voice; Actions **Green - Blue Space:** Verticality, Fence; horizontality Cycling sounds; Environmental sounds; Cultivating sounds **Construction Sites:** Machinic Sounds, Engines; Fences; **Railway and Metro Infrastructure:** Trains crossing; Wide Open Reverberation Cracking infrastructure; **Surveillance:** Sirens; Machinic	**Youth:** Producing, Performing, listening, Social Territoriality, Criminal and Terrorist Activities **Other Inhabitants;** Passage, Producing, Performing collectivity; urban agriculture - **Authorities**: control, cut out, Instalment of order, Vacuum; **Private Developers:** control, cut out, adding sounds; Instalment / Vacuum; **Green Infrastructure Space:** Non Human – Human sounding; distance **Rail and Metro Infrastructure:** Rhythm; Signal; Piercing; Waves of sound;	**Youth:** music Acoustic territoriality; green infrastructure space: return **Authorities**: Control **Planners:** Conditioning Green Infrastructure Space **Political Tonality:** Socially blended Old infrastructure sounding Environmental sounds more human than before **Micropolitics Research:** Participant Observer; Ethical approval; Crossbenching

Table 4. Urban Sound Space Assemblage – Metro North

Sonic Material Analysis

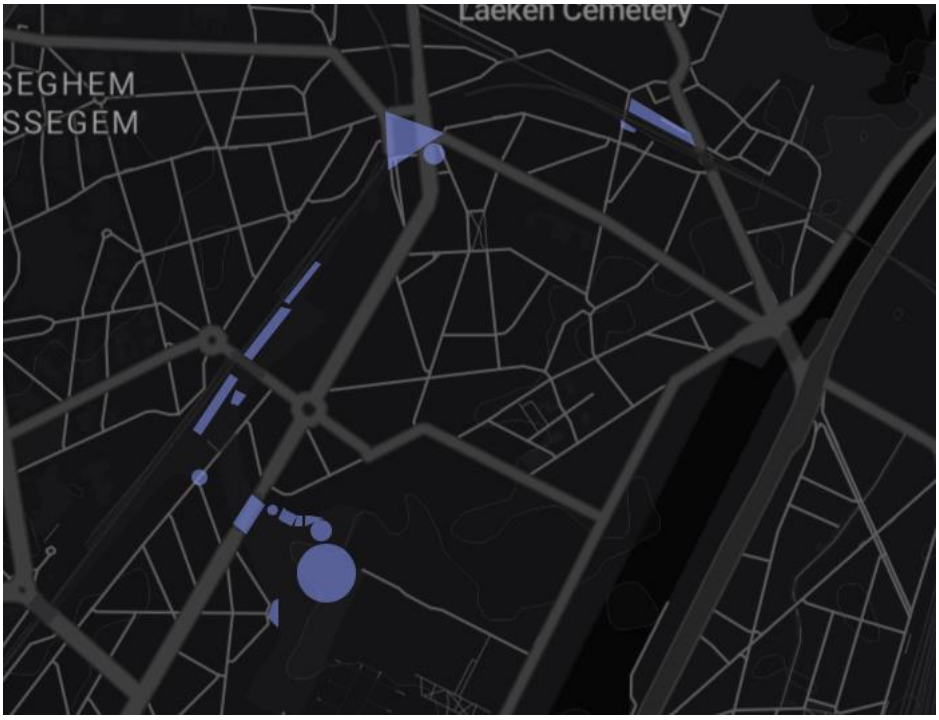
The urban sound space of Park Pannenhuis fuses different elements such as the sounds of water, trees, stillness, bringing in seemingly random patterns, chaos. It installed conditions for a mixture of sonic intensity and spatiality. In addition to the railway and metro infrastructure and old industrial heritage, the design and program of the new park contribute to possible sonic experiences here. Some of the sound spheres such as those generated by the water and dense zone of trees are quite adequate for inducing a kind of aural contact with nature that not many public spaces in Brussels allow. The mix of elements such as water and trees in a corridor triggers the articulation of more random elements. The park allows more unexpected shapes to perform, and its sound space takes on unforeseen timbres. Different elements situated in the landscape, the old or newly installed architectural systems bring in various immersive materials. Compared to Park Tour & Taxis, there are more immersive spheres here. Regular alternation with the piercing sound waves of passing trains, intensifies the urban sound space.

Sonic material analysis over time demonstrates the contingent and situated enactment of the urban sound space and its various sound spheres which continuously or intermittently overlap at several locations in this greenspace stretched along the railway line. It exposes how planning and design processes not only enabled public access to the urban sound space but also introduced some new sound spheres in this part of the railway environment. A mutation in sound space has been audibly observed but this exploratory study cannot adequately demonstrate the endangerment or elimination of certain sound spheres. The outcome of the analysis indicates a need for further research into the transformation of sound spaces, the presence of sound spheres in relation to the development of public green space.

(3) Sonic Cartography North Rail area: Axis Tour & Taxis - (Old) Bockstael.

Sound Walk

As part of the sonic cartography, I have outlined a soundwalk for the Axis Tour & Taxis - (Old) Bockstael with corresponding recordings and explanatory notes which can be accessed using the Echoes application during a site visit. The augmented sound walk allows for on-site consultation of the research results.



URL to the Online Audio Paper 'Bxl L28 North': Metro Area (Echoes Platform):

Bxl L28 North: https://explore.echoes.xyz/collections/hlktnlM2MAThliyy

Recording (1) Axis Tour & Taxis - (Old) Bockstael: Bockstael Video Surveillance (2021)
Recording (2) Axis Tour & Taxis - (Old) Bockstael: Bockstael Park (2021)
Recording (3) Axis Tour & Taxis - (Old) Bockstael. Old Bockstael Railway Station (2020)

Tracing

For the study of this part of the L28_railway area, I have focused on *Pocket Park Rue Champ de L' Eglise – Kerkeveldstraat.* The green community space is one of the four pocket parks that have been realised within the framework of the Sustainable Bockstael Neighbourhood Contract program (2013). Together with Park L28, the pocket parks were programmed as part of a green network connecting Laeken with Tour & Taxis. Across the railway tracks is the old station building. After four years of renovations, this space reopened at the end of September 2021. Via this project Brussels City, aims for the co-creation of a local platform facilitating local participation, meeting, and creation. The pocket park had a difficult start, and the collective space was appropriated by youth who showed little interest in the idea of gardening. Today, the park is no longer in use. A recently installed fence prevents people from entering the park.

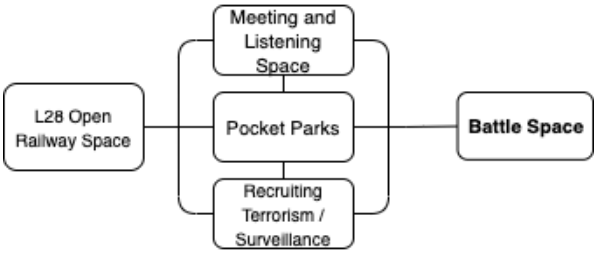


Figure 37. Transformative Railway Space - Rail North

Figure 38. North Rail area: Axis Tour & Taxis - Pocket Park Old Bockstael (Claus, 2021)

Figure 39.North Rail area: Axis Tour & Taxis - (Old) Bockstael Railway Station (Claus, 2021)

Mapping

Relations constituting the assemblage of the 'transformative railway space' of North Rail area: Pocket Parks are listed (in no particular order) as follows:

Railway Space	**Spatial Composition**	**Planning Context**	**Phase**	**Usage**	**Conflict**
Pocket Park Rue Champ de L' Eglise BXL1020 Laeken	Railway Infrastructure Space; Talud; Green Space; Infrastructure	Green & Blue Network; Urban Renovation; Federal Canal Plan;	Negotiation; Realization;	Jardin Collectif; Meeting, listening space; informal economy; criminality; Social prevention;	Agriculture; Local Youth; 'NEET' youth; Mediation; Social Control; Ecological value; Recruitment Terrorism; Criminal Activity

Table 5. Transformative Railway Space - Rail North

For this site, I have identified relations, affective forces, and capacities constituting the dynamic assemblage of an 'urban sound space', performative 'sound spheres and processes of acoustic territoriality. In doing so, I explored how these dynamics relate to accessibility of transformative railway space, and unplace.

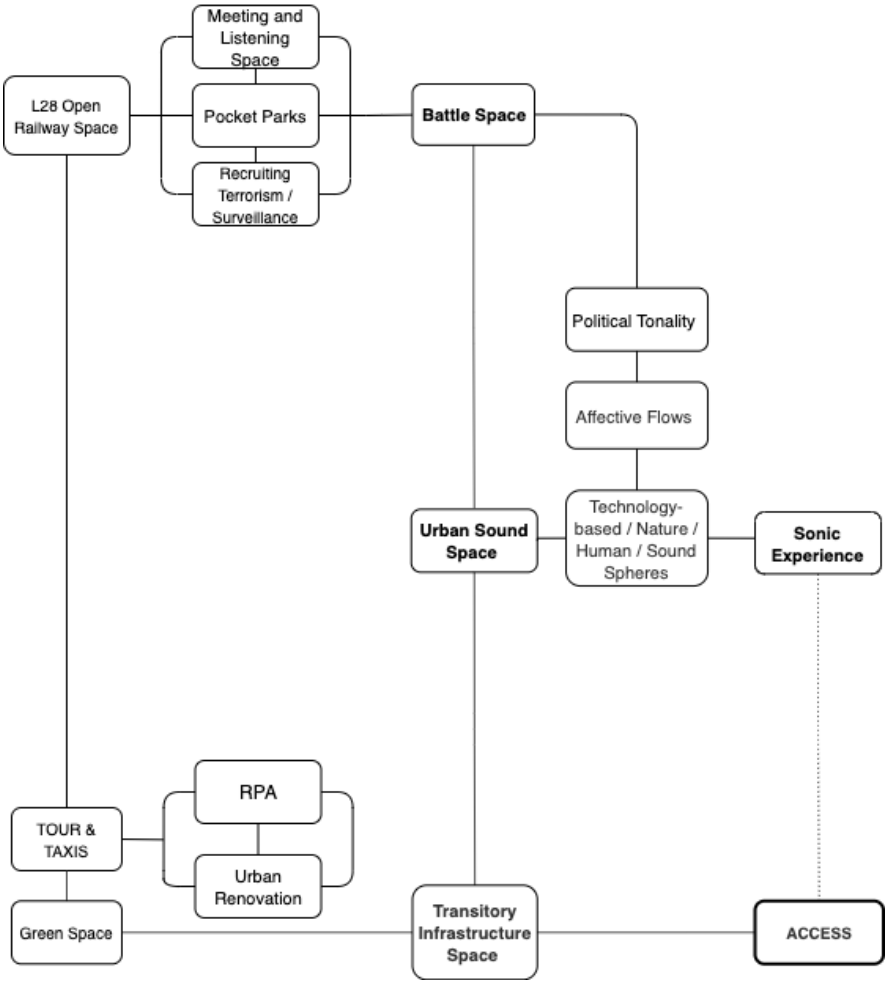


Figure 40. Urban Sound Space - Rail North

Relations:	Affective Flows	Capacities	Micropolitics
Spatial: Vertical Railway Infrastructure Space; Green infrastructure space: garden and park space Fence Blind Walls Military, Private and Police Surveillance; **Socio-spatial:** Network of youth ; Gardeners Inhabitants; Passers by; Social Mediation	**Youth:** Music; **Voice;** **Actions** **Gardeners - Collective:** Absence of gardening Sounds **cut out of sounds** **Green infrastructure Space:** Intro **Outro** **Environmental, Non Human, Human sounds** **Railway Infrastructure:** Piercing sound waves; **V**olumetric vibrations; **Rhythm** **Social Mediation:** Nuisance cut out Sound recordings; performance	**Youth:** Producing, Performing Sounds of crossing; **Destruction Sounds;** **Social Territoriality,** Criminal and Terrorist Activities **Gardeners - Collective:** Absence / Turning away **Authorities:** Control, cut out, adding **sounds** **Instalment** Maintenance Vacuum; **Fence**; Social mediation, **Planners & Designers:** Planning, design, conditioning transformative railway space **Social Mediation:** Process of re-negotiation	**Power:** Railway infrastructure; persistent; Non Human Elements: sounding, Garden - Collective: moving out, instalment fence. Youth: cohesion, resist, Mediation: re-negotiations **Political Tonality:** Vacuum marked by Inaudibility Intro surroundings **Micropolitics Research:** Social Researcher, Ethics; Crossbenching

Table 6. Urban Sound Space Assemblage - Rail North

Sonic Material Analysis

Moments of spacious stillness define the urban sound space of *Pocket Park Rue Champ de L' Eglise – Kerkeveldstraat.* The trembling fence adds texture and dynamics. Shifting drone swells from passing trains contribute to its eeriness. Sounds from trains arrive from a distance dissolving in loud and sharp sliding and cracking sounds. The slowly approaching trains introduce an intensifying sound field so loud that it eventually overrides all other sounds to become a wall of sound before fading and disappearing out of the sound space.

Sonic material analysis demonstrates the contingent and situated enactment of the urban sound space of and its sound spheres which intermittently overlap. Through literature review on the context of planning, a recurrent practice of individual field recording, and an interview with the coordinator of the local social prevention administration, I was able to account for sonic experience as the result of an intertwining of strategic planning, the failure of tactical design projects for collective greenspaces, and infrastructure space. This triangulation of methods and sources allowed me to trace this transitory railway space as 'unplace' revealing itself through the eerie experience of space triggered by the absence of sound and vibrations navigating real urban spaces. The combination of methods and sources allowed me to understand how the experience of silence is related to a failure of the collective garden project and rhizomatic appropriation of this space by local youth.

3.2.2.2 Zone West

The green network development in this part of the L28 railway area is on-going. Anno 2021, In 2021, most of the West Station site is still wasteland. From 2017 to 2021, the area was the object of urban planning using Master planning (PAD/RPA) as a tool. During the period of the definition study and the composition and selection of teams that would work for the then-new planning instruments Urban Renewal Contract and the PAD/RPA, this part of the L28 railway area operated as hub for the recruitment and preparation of terrorist attacks. In the period that followed, this area became the object of increased control and repressive measures put into practice by both the police and the military.

The Weststation area is home to a popular hip-hop scene that has been producing and distributing music and video clips both independently and in collaboration with local non-profit organizations since the late 1990s. The open space surrounding the social housing complex as well as the metro infrastructure regularly operates as a staging ground for video clips, music production, lyrics as well as for concerts and other collective listening.

After a phase of predominantly study and planning, starting with the realization of Infrabel Academy (2021), the first projects are now being implemented. For the past two years, a part of the West Station site has been opened to the public via the introduction of a transitory project *Molenwest* (2020). The transitory project is coordinated by Brussels Society for Urban Development (MSI) and is co-managed by the municipality of Molenbeek-Saint-Jean and her partner associations. The space has been developed as part of two urban development programs: the Urban Renewal Contract "West Station" (TAKTYK et al., 2017) and the Sustainable Neighborhood Contract (PTA, 2018) " Around West Park " (PTA, 2018).

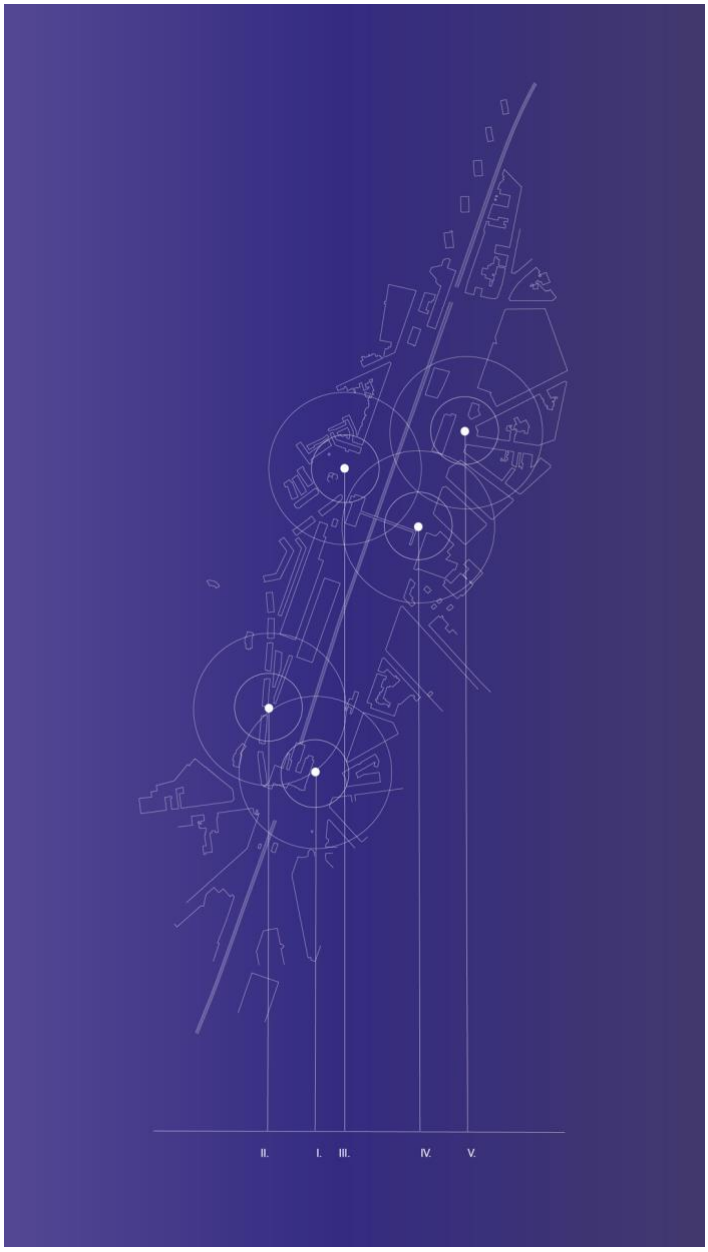


Figure 41. SOUND WALK Zone West (2018)

Using outreach- based techniques of observation and tracing, in the southern part of the L28 railway area I have identified three different types of transformative railway space young people use for performance and collective listening: (1) West Metro Area: Beekkant Square, and (2) West Rail Area: Bruxelles-Ouest, (3) West Park Area: Crosscut – West.

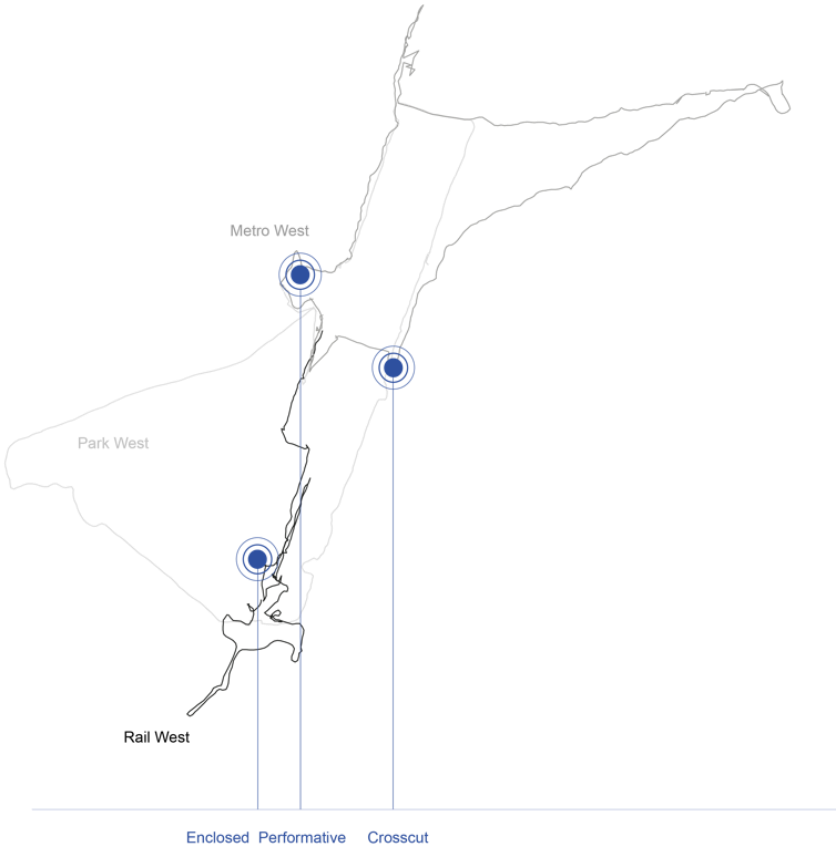


Figure 42. TRACING Urban Sound Spaces in Zone West (2020)

(1) Sonic Cartography West Metro Area: Beekkant Square

Sound Walk

As part of the sonic cartography, I have outlined a soundwalk for the Metro West Area with corresponding recordings and explanatory notes which can be accessed using the Echoes application during a site visit. The augmented sound walk allows for on-site consultation of the research results.

URL to the Online Audio Paper 'Bxl L28 West': Metro Area (Echoes Platform):

https://explore.echoes.xyz/collections/3ImAo54T1CIN7rx9

Recording (1) West Metro Area: Beekkant Square – Vibrations (2021)
Recording (2) Beekkant Square Video Surveillance (2021)
Recording (3) order Future Zone BioDiversity (2016)

Tracing

For the study of the environment of metro spaces in this part of the railroad area, I zoomed in on the square next to Beekkant metro station. Anno 2021, Beekkant Square operates as a mobility hub and the central square of a residential area west of the railroad yard. It owes its current form of a greened arena situated between two social housing towers largely to the design of the larger social housing complex *Cité Edmond Machtens.* The square faces the entrance to the underground Beekkant metro station with access to the pedestrian bridge and on its right side the undeveloped and fenced-off West Station site and on the left, the Dubois-Thornstreet giving access to both the Infrabel academy campus site and Delhaize Hall buildings. The square has stations for buses, and bike and car sharing. In addition to its green and recreation area, anno 2021, the square includes an agora space with half-destroyed benches. A monumental sculpture emphasizes a no longer operative railway line to the Delhaize Site in the back.

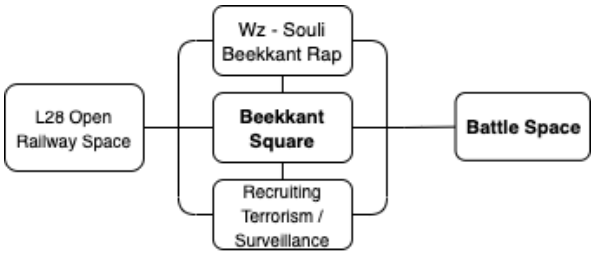


Figure 43. Transformative Railway Space - Metro West

According to RPA/PAD (2021) defining the transitory development of the West station site, the square will become even more important as an esplanade connecting the underground metro station and the pedestrian bridge with the future park. Besides its function as an esplanade integrating different traffic flows,

the square also operates as a neighborhood square, where people of different generations pass by, relax, play, and perform. As elsewhere in the L28 area, this public space with minimal comfort close to a subway station, became an important meeting place for young people. Previous analyses (Perspective, 2015), (TAKTYK et al., 2017), (PTA, 2018), indicate that most of these functions are fulfilled, but not in a qualitative way. According to the studies, the square lacks attractiveness and does not support adequate mobility, especially when crossing between the bus and the metro. End of Spring 2021, by order of the Municipality of Molenbeek, the Brussels Bouwmeester (Bouwmeester-architecte, 2021) launched a call for the redevelopment of this public space. The redevelopment will focus on the creation of a more hospitable public space, an attractive green character and hydraulic management to make this place resilient to climate change.

The square is notable for its long-term problems of crime (PTA, 2018). Following the Paris, Brussels and Zaventem attacks, there was increased monitoring and surveillance realised by the police and army with armed soldiers patrolling the entrance to the underground station. Today, the transformative railway space in this part of the L28 railway is heavily controlled by public and private actors. At street-level, police patrols and city guards pass by regularly and via the instalment of a video surveillance system permanent monitoring became possible. In 2017 and again in 2018, the municipality enforced a 'crowd ban' between 9pm and 5am, for a larger zone delineating a Beekkant Square area (Roelant, 2017), (PTA, 2018), (VT, 2018). Following the decision by the Molenbeek social housing company, a social project located in an office space at the ground floor of one of the towers on Beekkant square was disbanded at the end of 2020 (Roelant, 2020).

Figure 44. Perimeter Crowd Ban Beekkant (Bruzz, 2017)

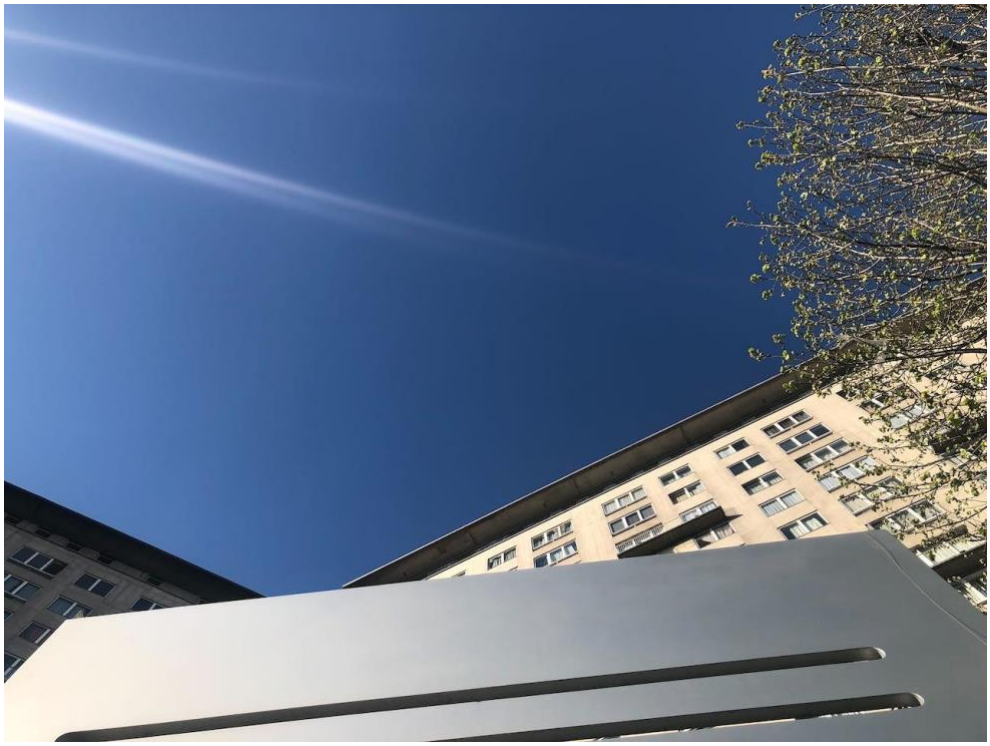


Figure 45. West Metro Area: Beekkant Square (Claus, 2021)

Mapping

Relations constituting the assemblage of the 'transformative railway space' of *WEST METRO area: Beekkant Square* are listed (in no particular order) as follows:

Railway Space	**Spatial Composition**	**Planning Context**	**Phase**	**Usage**	**Conflict**
Beekkant Square, 1080 SJM	Vertical / horizontal Metro / Railway Infrastructure Space; Old Railway Space; Infrastructure Space; Bus Infrastructure Space; Social Housing Complex; Car / Bike Sharing Infrastructure; Green Infrastructure	Green Network; Master-Planning; Urban Renovation; Federal Canal Plan; Acoustic Comfort	On-Going Negotiation ; Realization;	(Public) Transport; Social Cohesion; Performance Informal Economy; Housing; Surveillance; Prevention	Social Acoustics; Housing Quality; NEET Youth; Criminal activity; Performative Space; Increased surveillance; Participation In Renovation: Recruiting and Operative Centre Terrorism; criminal activity

Table 7. Transformative Railway Space Assemblage - Metro West

For this site, I have identified relations, affective forces, and capacities constituting the dynamic assemblage of an 'urban sound space', performative 'sound spheres and processes of acoustic territoriality. In doing so, I explored how these dynamics relate to accessibility of transformative railway space, and unplace.

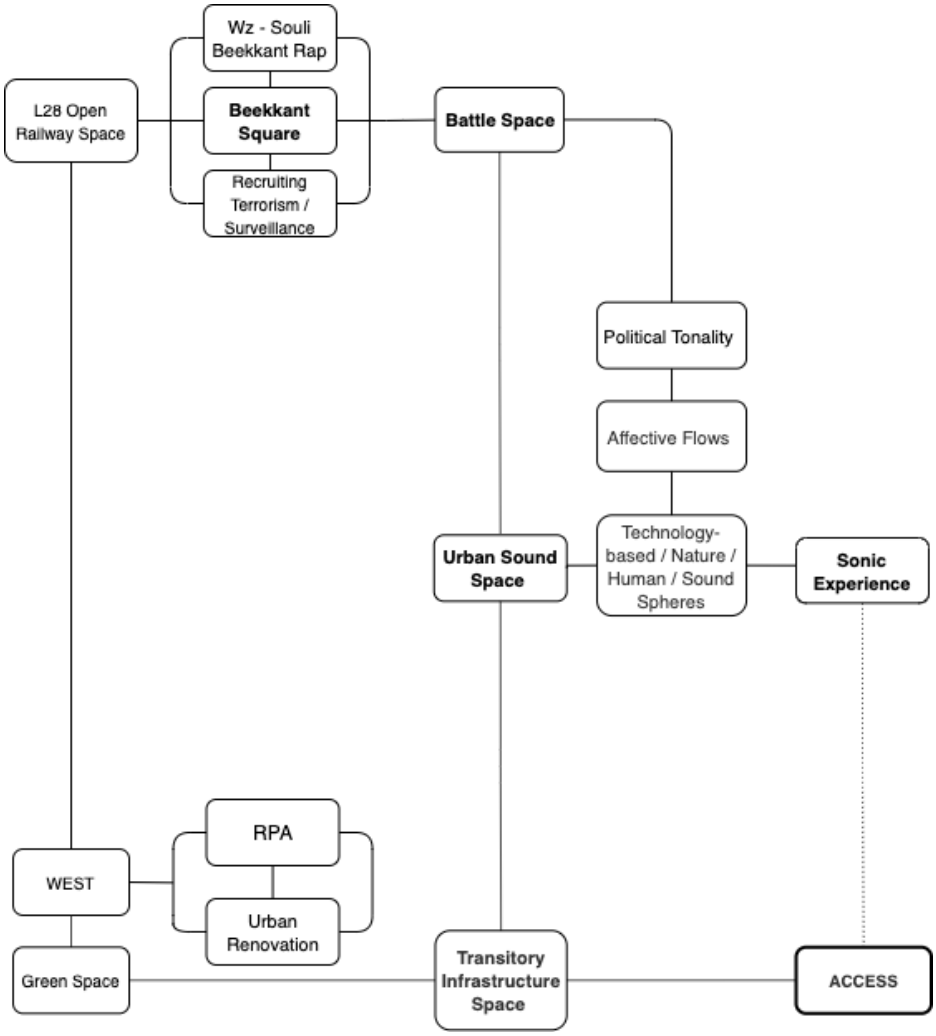


Figure 46. Urban Sound Space - Metro West

Relations:	Affective Flows	Capacities	Micropolitics
Spatial: Underground infrastructure; Construction Sites; Housing Complex Garages; Wasteland; Railway infrastructure; Green infrastructure; Surveillance Infrastructure; **Socio-spati**al: Network of Youth; Hip Hop Performers; Soldiers; Police; Lack of Social Cultural Professionals Other inhabitants; Private Surveillance	**Youth**: Music; Network; Machine Guns; **Other Inhabitants:** Complaint Assembly Ban **Housing Complex**: Acoustics Architecture **Authorities - Noise Plan**: Acoustic Comfort **Construction Sites:** Machinic Sounds, Engines; Fences; **Wastelands:** Fence; non human sounding **Surveillance infrastructure:** Silence Soldiers; Silence Closed space; Sirens; EM infrastructure; **Railway and Metro infrastructure:** Trains Leaving / arriving; Underground vibrations	**Youth**: Producing, Performing, listening music - gun sounds Re-negotiating sound space **Authorities**: control, cut out, adding sounds **Planners:** Definition conditions Wastelands: Non Human Human sounding **Railway and Metro Infrastructure:** Producing Sound; Rhythm; Volumetric vibration; Acoustic Resonance **Surveillance infrastructure**: Cut out; Control; Monitoring; **Other inhabitants**: Social control, cut out, adding sounds	**Railway Company**: control Conditioning sound space **Authorities:** control **Inhabitants**: impact sound space **Youth:** lack negotiation, performing **Political Tonality:** Eeriness Military Metal Sounds / Rhythm Resonance Performance Gun Sounds **Micropolitics Research:** In between Participant Observer - ethics

Table 8. Urban Sound Space Assemblage - Metro West

Sonic Material Analysis

Beekkant Square adds a relatively dynamic sound space to the sonic environment of the L28 railway area. It allows the experience of different sound spheres. In what follows, I will demonstrate how a relational, performative, material analysis of sonic experience in a dense and conflictual space as Beekkant Square triggers a shift in the urban debate from a focus on 'acoustic comfort' and 'nuisance control' to the contingent and situated enactment of processes of territoriality and conflict.

Vibratory waves coming from traffic flows dominate the urban sound space of Beekkant Square. Recurring police sirens articulate the presence of control. This results in a mix of patterned waves moving through the air. Listening to Beekkant Square only allows a partial exploration of the urban sound space. Underground infrastructure enforces their experience through one's feet on the ground. The street can be experienced as a 'sensory surface' connecting human and other bodies with the rhythm of the underground traffic. Environmental sounds are underrepresented. The square offers space to some trees, but the effects of their presence are masked by dynamic traffic sounds. There is a concrete wall preventing physical and visual access to the nearby waiting space appropriated by plants and animals. This cut-off creates the presence of a 'distant sound field'. A sound wall generated by the sounds of traffic flows prevents a blending with the natural sounds coming from the vacant land. The positioning and architecture of two adjacent residential towers causes reverberation and amplification of sounds in the empty space above the square. This can be thought of as a complex dynamic unity marked by continuous movement with the echoes and reverberations multiplying the movements heard without diminishing them. When performing or speaking aloud in the arena space of Beekkant Square, human voices are amplified by the architecture of the square and buildings.

Figure 47. West Metro Area: Beekkant Square (Claus, 2021)

Electromagnetic inducers render the interplay of electromagnetic waves emitted by surveillance technology audible. The presence of this technology combined with the presence of soldiers in public space caused a severe reduction in social sounds at different locations. In the period immediately following the Paris and Brussels Attacks, the presence of soldiers generated an eerie sound sphere marked by the absence of urban sounds. The temporary presence of soldiers triggered verbal reactions among young people. In 2016, I observed how reverberation occurred when young people were shouting from the arena to the soldiers standing silently at the entrance of Beekkant station. Both the reaction of young people to the zone of silence surrounding the soldiers and the echoing of their shouting from the tall concrete buildings co-define possible sonic experiences at the square.

Human's capacity to affect the sound space here and to be affected by the sound space defines only a part of the dynamics of the sound space since a multitude of bodies, including non-human ones, are involved. For example, a similar amplifying and reverberating effect occurs with passing freight trains and helicopters in the sky as well as police sirens on the ground, exposing its aural architecture.

Together with the emergence of internet and hip-hop at the turn of the century, local young performers started to explore Beekkant Square both as virtual, augmented and distributed urban sound space. In 2016, local youth together with the prevention service organized a rap competition called 'Beekkant rap'. This project was such a success that the staff and youth then built a recording studio close to Beekkant Square. Today, Beekkant Square is still a popular location for online distributed music video clips. In the period between two periods of crowd bans, WZ and rapper Souli distributed a new music video (Wz -Souli, 2019).

Figure 48. West Metro Area - Beekkant Square:

Screenshot Video Clip by WZ J'vais l'faire. (2021)

https://www.youtube.com/watch?v=V7mDZsdFeO8

The irrepressible and running input of dry vibrational beats and flows, combined with slanguage, and spatial exploratory video imagery used in online shared music video clips expands indisputably the urban sound space of transformative railway space. On the one hand, these performative and collective listening practices can be understood as a materialization of the experience and positioning of youth in a context of increased control and oppression through performance on the site itself. On the other hand, the performative practice dematerializes via an online sharing and distributed collective listening. The imposition of helicopters and armed police and military, curfew, and video cameras for surveillance, involves an addition or suppression of vibrations, sonic or otherwise.

WZ (Souli) is a freestyle rapper performing at Beekkant who has been active since 2016. Vice magazine (2020) considers him as one of Brussels best rappers to depict raw and precise the real life of the Brussels neighborhoods. The video clip of Il est balaise was filmed at night at Beekkant Square and in between the garages of the

housing complex. In recent decades, Beekkant Square became a popular performance space for young musicians both as a social cultural project (Bknt Rap Project, 2015) and as an independent initiative (Des Claques, 2011; Wz -Souli, 2019). The soundtrack produced by 300 Momo contributes to the affective capacity of *Il est balaise.* It combines drums with bass reminiscent of the automatic gun sound, samples of real gun sound, and some drill synth bell sounds mixed with bass creating a dark and aggressive sound sphere. In the video, young men and little boys gather in a circle around the rapper. They are masked and some wear war clothes such as bulletproof vests. Some carry a flag; others hold a pit bull on a leash. Occasionally a weapon is being dropped. They also show off large motor vehicles. During the performance, the young people appropriate the space of the square and parts of the building. They stand on the roof of an outbuilding that used to house a social service. In a more recent video clip performed at Beekkant Square (Wz, 2021) a young rapper's autotuned voice rolls over a dead-and-dry grid-like beat produced by KeyBrams Prod. The track introduces a sound sphere of disruptive energy featuring some micro innovations not just in its creative use of auto-tune and other vocal processing but also in its switching between the rhythmic speech of rap and melodic trills of singing.

Sonic-material analysis of Beekkant Square indicates a complex, contingent and situated enactment of urban sound spaces and different sound spheres. The proximity of underground and thus vertical subway infrastructure and an expansive, longitudinal railway landscape contribute to the occurrence of vibrational patterns. These patterns structure sonic experiences of Beekkant Square. Through literature review on the context of planning, a recurrent practice of individual field recording, and analysis of (popular) media collected over time, I was able to account for sonic experience as the result of an intertwining of strategic planning and design, the use of surveillance and/or military tactics, and sound design techniques that define the performative and collective listening space. This

triangulation of methods and sources allowed me to expose how the architecture of the social housing complex is involved in processes of acoustic territoriality. A situated sonic material engagement in explorative, longitudinal case study, enabled the study of the eeriness or absence of sounds caused by military tactics and strategies. The occurrence of multiple sound spheres, including conflicting spheres and a surfacing of unplace, results in a well-defined but no less dynamic political tonality. This leads me to a criticism of the rationale and decision making for the ban on gathering in a public space that was designed as a meeting place and has long been used by local youth as a performative and collective listening place.

(2) Sonic Cartography West Rail Area: Bruxelles-Ouest

Sound Walk

As part of the sonic cartography, I have outlined a soundwalk for the West Rail Area with corresponding recordings and explanatory notes which can be accessed using the Echoes application during a site visit. The augmented sound walk allows for on-site consultation of the research results.

URL to the Online Audio Paper 'Bxl L28 West': Rail West (Echoes Platform):

https://explore.echoes.xyz/collections/3ImAo54T1CIN7rx9

Recording (1) West Railway Area: West Vertical Infrastructure Space (2016)
Recording (2): West Railway Area: West Video Surveillance (2021)
Recording (3) Axis Tour & Taxis - (Old) Bockstael. Old Bockstael Railway Station (2020)

Tracing

The infrastructure of Weststation combines a metro and train station. Weststation has the potential to become an important public space. Planning processes and transitory projects gradually introduce future perspectives but at the same time condition the accessibility of the railway space.

Anno 2021, the station's entrance is nothing more than a tightly spaced esplanade. In stark contrast are the insufficiently utilized inner spaces of the infrastructure. To reach the train tracks travelers must go down two floors. The railway platforms are invisible and not integrated into the whole. The masterplan for Weststation proposes a second entrance on its north side (TAKTYK et al., 2021). The goal of this reverse move is to bring the focus to the main hall, which is little used today, and to facilitate permanent public flows along the tracks. Both Brussels Region and the Municipality of Molenbeek Saint Jean envisage the development of a public esplanade to reinforce the metropolitan character of Weststation (TAKTYK et al., 2017; PTA, 2018; TAKTYK et al., 2021).

Figure 49. West Railway Area: Bruxelles-Ouest (Claus, 2021)

From the train platforms the back of the tall concrete flat blocks immediately catches the eye. The buildings are part of the social housing complex built between the 1950s and 1970s. Because of their height, the housing blocks between Beekkant and Weststation form a wall parallel to the railway line. From the railway platforms there is little visual contact possible with what's happening at street - level and the Park Marie José. The zone between the blocks and the railway line is a residual space with garage boxes and open space. Surrounded by vacant land and on the east bordered by the concrete wall formed by the backside of the social housing complex, the railway station with its platforms creates an eerie sound sphere. For a long time, the railway platforms were the scene of illegal activities such as drug trafficking and vandalism. As a result, both police and STIB increased their surveillance of the space (PTA, 2018). Following the Paris and Brussels attacks, soldiers patrolled inside and outside the railway station. The surrounding street and station area both inside and out are monitored by video cameras.

As part of the Sustainable Neighborhood Contract 'Rondom West' a project for temporary use is taking place on a corner plot adjacent to Vandenpeereboom street (PTA, 2018). Brussels MSI together with the designers and a network of local professionals jointly are coordinating the gradual opening of this part of the railway site. This happens in accordance with the program of the Sustainable Neighborhood Contract *Rondom Westpark* and the Urban Renewal Contract *West Station* (SVC 3). In addition to the expansion of railroad tracks, Infrabel realized its 'Infrabel academy' project on a plot between the railroad, the Delhaize halls, and the garages of the social housing. The project, a realization by Greisch, Atelier Kempe-Thill and Canevas, includes an extension of the Dubois-Thorn Street. The extension will form a new 'green connection' between Beekkant Square and Av. De Rooverelaan, the future Westpark and Marie-José Park. Private companies guard the fenced construction sites with guards and video cameras.

Figure 50.West Railway Area: Bruxelles-Ouest (Claus, 2021)

Figure 51. West Railway Area: Molenwest (Claus, 2021)

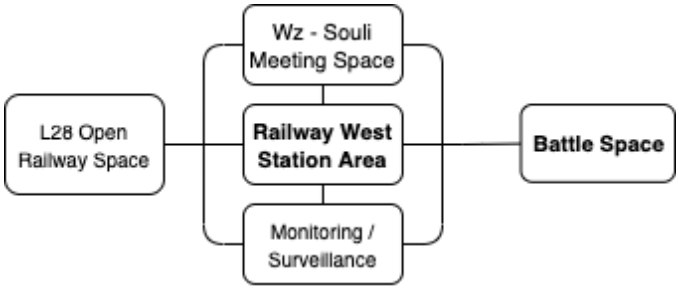


Figure 52. Transformative Railway Space Assemblage - Rail West

Mapping

Relations constituting the assemblage of the 'transformative railway space' of *WEST RAIL area: Bruxelles-Ouest* are listed (in no particular order) as follows:

Railway Space	**Spatial Composition**	**Planning Context**	**Phase**	**Usage**	**Conflict**
Social Housing Complex, Infrabel Academy, De Roovere Laan, 1080 SJM	Back Social Housing Complex; Railway Company infrastructure; Metro infrastructure, Street Extension	Green Network Master-planning Urban Renovation Projects (CQ/CRU) Federal Canal Plan	On-Going Negotiation realization	(Public) Transport; Social Cohesion; Performance-Informal Economy; Housing; Training Centre; Surveillance; Prevention	Social Acoustics; Housing Quality; NEET Youth; Criminal activity; Performative space; Nuisance; Space; Increased Surveillance; Accessibility; Participation

Table 9.Transformative Railway Space Assemblage - Rail West

For this site, I have identified relations, affective forces, and capacities constituting the dynamic assemblage of an ‘urban sound space’, performative ‘sound spheres and processes of acoustic territoriality. In doing so, I explored how these dynamics relate to accessibility of transformative railway space, and unplace.

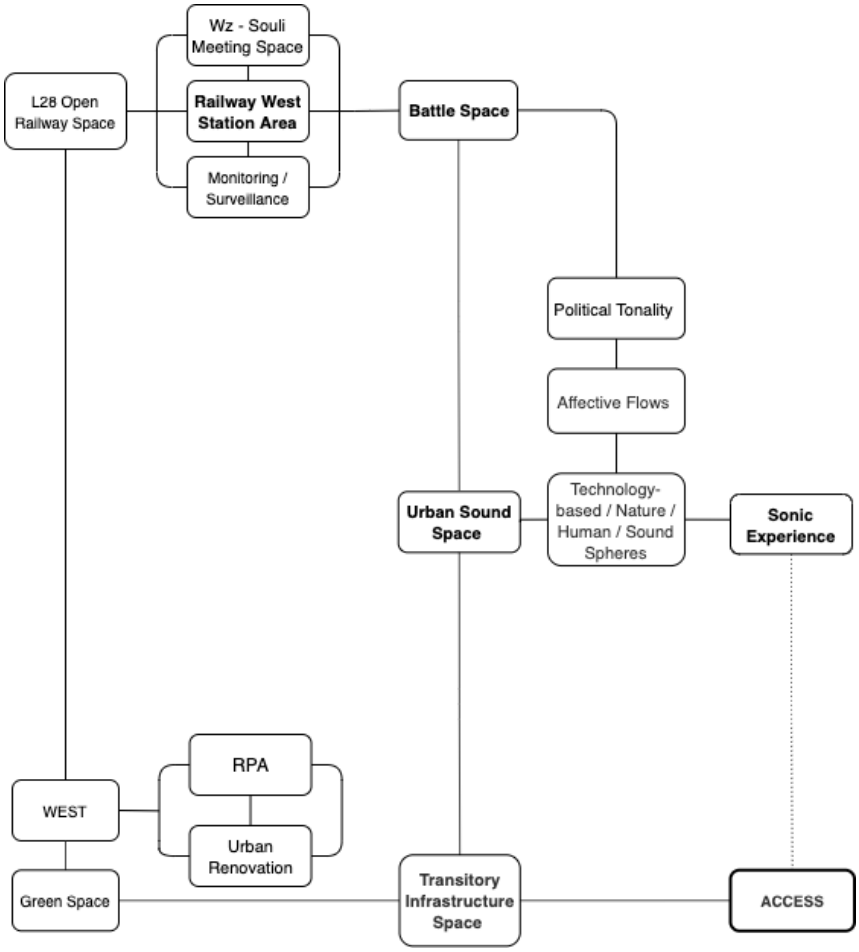


Figure 53. Urban Sound Space Assemblage - Rail West

Relations:	Affective Flows	Capacities	Micropolitics
Spatial: Underground infrastructure; Construction Sites; Wasteland; Railway infrastructure; Green infrastructure; Cars / Motorcycles Traffic; Surveillance Infrastructure; Prohibition perimeter; **Socio-spatial:** Network of Youth; Hip Hop Performers; Soldiers; Police; Lack of Social Cultural Professionals Complaining Inhabitants; Kids Playing;	**Youth:** Music; Network; Machine Guns; **Other Inhabitants:** Complaint Assembly Ban **Architecture Housing Complex:** Acoustics Opening Metro Wall Bouncing **Authorities - Noise Plan:** Acoustic Comfort **Construction Sites:** Machinic Sounds, Surveillance **Wastelands:** Non Human; Transformation; **Surveillance:** Silence Soldiers; Silence Closed space; Sirenes; EM infrastructure; **Railway and Subway infrastructure:** Machinic sound and vibrations; Vertical / Horizontal	**Youth:** Producing, Performing, listening music - gun sounds; Hiding; Negotiation sound space **Authorities:** control, cut out, **Planners and architects:** Definition conditions **Introducing Wastelands:** Disappearing Non Human Human sounding **Railway and Metro Infrastructure:** Producing Sound; Rhythm; Volumetric vibration; Acoustic Resonance **Surveillance:** Cut out; Control; Monitoring; **Other inhabitants:** Social control, cut out, addition	**Power:** Youth: hide and/or escape adapt / perform / lack of power; Authorities: initiation, conditioning projects, intro and reinforcement of surveillance infrastructure Planners and architects; conditioning Subway and Railway infrastructure; rhythm **Political Tonality:** Disappearing Environmental sounds Hidden Sonic Warfare **Micropolitics Research:** Distant participant Observer – ethics; Crossbenching;

Table 10. Urban Sound Space Assemblage - Rail West

Sonic Material Analysis

Escaping via the opening from the underground subway infrastructure situated in between the railway platforms and a first series of social housing blocks, sounds of arriving and departing trains loudly occupy the area around west station. The concrete wall of high-rise buildings bounces back the crackling and tearing sounds of these motorized beaters to the area surrounding the railway platforms. Vibrations coming from the underground subway infrastructure travel upwards through the metal structures of these platforms above ground. De vacant land keeps traffic sounds coming from Vandenpeereboom Street at a distance, drawing attention to smaller sounds that would otherwise slip unnoticed in the chorus of the traffic buzz. Sirens contour sonically the open space around the west station. Helicopters flying over, take up the open railway space volumetrically. The presence of animals and vegetation in undeveloped areas adds fluidly shifting patterns with huge masses of pointillistic sound to the urban sound space of this area. With rain or storms, these textures can take on a more intense dominant position here.

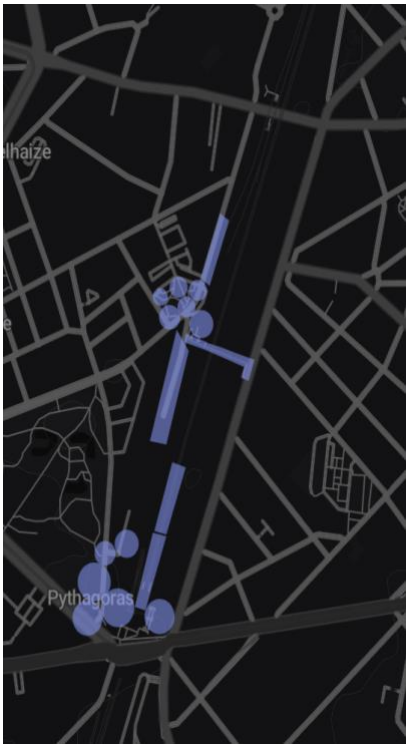
Both the video clip of *Il est balaise* (Wz, 2019) and *West Zone* (Wz, Unknown) with Souli Wz and other performers confirm that local youth use the garages in the back of the social blocks for meeting and performance. In both video clips, young men and boys appropriate playfully the space between the garages and the blocks. The *West Zone* video clip shows youths handling weapons or imitating their use, carrying Moroccan flags, the presence of police, large amounts of soft drugs, and riding motorcycles. The track searches to revoke a disruptive sphere of anger and pride. A catchy melody on repeat engines the beat, central element of this dark sound sphere, forward. Other important elements are the drums and bass, and some vocal chops. Halfway through the song the auto tuned vocals of Mr. Choco introduces an eerie element permeating the sound sphere of the track.

Sonic material analysis exposes the contingent and situated enactment of the urban sound spaces and various sound spheres that continuously or intermittently overlap. Some of these enactments, such as the performance of electromagnetic waves emanating from expanded surveillance infrastructure surrounding the railroad site, are involved in processes of acoustic territoriality. Through literature review on the context of planning, a recurrent practice of individual field recording, and analysis of (popular) media collected over time, I was able to account for sonic experience as the result of an intertwining of strategic planning and design, the use of surveillance and/or military tactics, and sound design techniques that define the performative and collective listening space. This triangulation of methods and sources allowed me to identify how the sound design and music of local youth interferes with the architecture of the social housing complex, military presence and surveillance infrastructure controlling the access to railway space. The outcome of the analysis indicates a need for further research on this interference.

(3) Sonic Cartography West Park Area: Crosscut – Weststation site

Sound Walk

As part of the sonic cartography, I have outlined a soundwalk for the West Park Area with corresponding recordings and explanatory notes which can be accessed using the Echoes application during a site visit. The augmented sound walk allows for on-site consultation of the research results.



Links to the Online Audio Paper 'Bxl L28 West': Park West (Echoes Platform):

https://explore.echoes.xyz/collections/3ImAo54T1CIN7rx9

Recording 17: West Park Area – Pedestrian Bridge (2016)
Recording 18: West Park Area – Passerelle Beekkant (2016)
Recording 19: West Park Area – Park West Outro (2016)

Tracing

The slow development of the Weststation site, contributes since long to the persistence of an urban fracture, separating different neighborhoods and their residents. Via RPA/PAD Brussels Region envisions the development of the inner railway site with, among others as ambition, a co-creation of a positive image and more visibility of the old industrial railway landscape itself (Taktyk et al., 2021). The

central mobility lines of the RPA/PAD divide the railway site into four quadrants. This basic structure of RPA/PAD outlines the four conditions of various programs and environments, as well as an operational basis for managing the scale of the site.

The introduction of a walking and cycling area along railroad line 28 together with *Passerelle Beekkant* defined the basis structure of the RPA/PAD. Longitudinal and transverse connections for pedestrians, bicyclists and PRMs will form an extension of existing local and regional networks. With RPA/PAD Brussels Region, envisions the development of a bicycle and pedestrian promenade following the railway line L28. The intervention is supposed to infrastructure active mobility and is aimed at the integration in a broader network connecting the Weststation area northwards to the Tour & Taxis site and Bockstael railway station. This L28 promenade will be situated on the east side of the railroad tracks at Weststation, bordering the tracks, with a goal to connect the four quadrants of the RPA/PAD with the platform overviewing the park and the development of the site.

Brussels Region envisages the Passerelle at Beekkant to become a strategic connection between the higher part of Molenbeek and the future park. The decision to keep, renovate and adapt the pedestrian bridge is also motivated by its capacity to offer extra space for play and sporting activities in the future West Park. There will be another bridge centrally located, overlapping the quadrants 'Activated Park' and 'Space for Biodiversity' and connecting the West Square with Beekkant Square. This connection will be accessible for pedestrians. A third bridge is situated in the southern part and is planned to become an additional connection between the neighborhoods bordering the transportation infrastructures. This connection is planned to become a shortcut to the railway platforms and will be open for pedestrians.

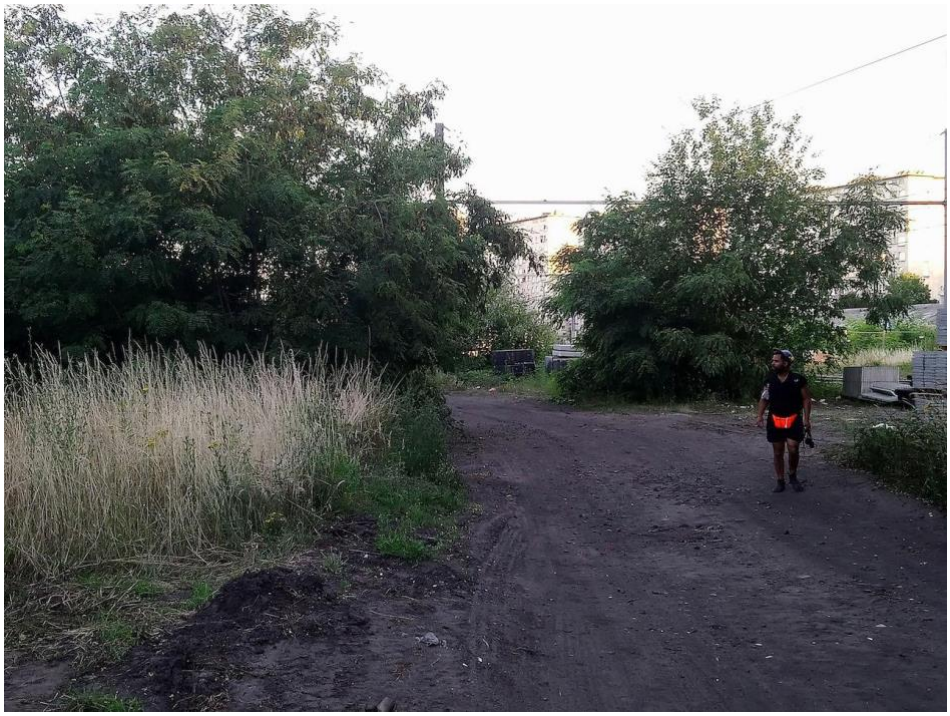


Figure 54. West Park Area: Future Green Connection Zone (Claus, 2018)

Figure 55. West Park Area: Passerelle Beekkant (2018)

The future new park at West station will cover almost completely the two northern quadrants of PAD Weststation. This project for a new park fits the larger strategic green (park) network development in the L28 railway area. The idea is to position the new park in between Marie-José Park and the 'Gasometer' zone which is located north of the site. Via the implementation of green space and water management in the pivotal zones between these parks, Brussels Region aims for an effective reinforcement of the Brussels green and blue network. A diversified sequence of green spaces extends the system to the concrete zones of the site. Other programs of the PAD are more concentrated on the development of the southern part of the site, including necessary shifts between certain parts to activate the site. Priority in this program is the branching of open space, combined with a mixing of functions and the integration of ‘new’ infrastructures into existing ones.

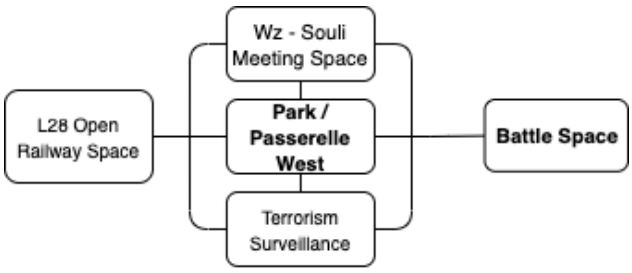


Figure 56. Transformative railway space assemblage - Park West

Mapping

Relations constituting the assemblage of the 'transformative railway space' of *WEST PARK AREA – PARK WEST:*

Railway Space	**Spatial Composition**	**Planning Context**	**Phase**	**Usage**	**Conflict**
Future Park; Passerelle; Weststation; Beekkant; Vacant Land; 1080, SJM	Railway Infrastructure Space; Metro Infrastructure; Green Space; Infrastructure; Wasteland; Urban edge; River Valley; Future Park Area ;	Green Network; Master Plan; Urban Renovation; Federal Canal Plan; Acoustic Comfort	Planning Negotiation Waiting Space Call for projects	Waiting Space; Surpassing; Under; Bridge Infrastructure; Railway and Metro Infrastructure; Social Hub Crossing Edge Area;	Land Ownership; Mobility Hub; Lack of Mobility; Homelessness Operative & recruiting centre terrorism; Inertia; planning processes

Table 11. Transformative railway space assemblage - Park West

For this site, I have identified relations, affective forces, and capacities constituting the dynamic assemblage of an 'urban sound space', performative 'sound spheres and processes of acoustic territoriality. In doing so, I explored how these dynamics relate to accessibility of transformative railway space, and unplace.

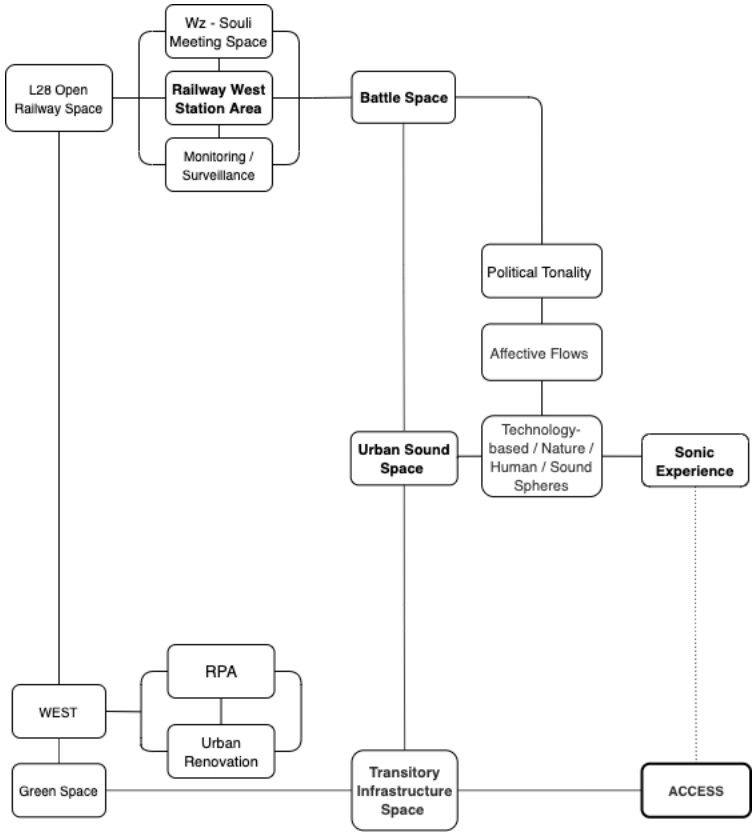


Figure 57. Urban Sound Space Assemblage - Park West

Relations:	**Affective Flows**	**Capacities**	**Micropolitics**
Spatial: Horizontal Railway Infrastructure Space; Horizontal / vertical Metro infrastructure Space; Military, Private and Police Surveillance; Wasteland; Construction sites;	**Youth:** Music; Network; Machine Guns; Footsteps; Phone sounds; Voice; **Other Inhabitants:** Complaint Assembly Ban **Housing Complex:**	**Youth:** Producing, Performing sounds of crossing; Destruction Sounds; Social Territoriality, **Authorities:** control, cut out, adding sounds; Initiation;	**Power:** Youth: hide and/or escape adapt / perform / lack of power; Authorities: initiation, conditioning projects, intro and reinforcement of surveillance infrastructure

Smartphones Helicopters **Socio-spatial:** Network of Youth; Hip Hop Performers; Soldiers; Police; Lack of Social Cultural Professionals; Complaining Inhabitants; Kids Playing;	Architecture Acoustics Opening Metro Wall Bouncing **Authorities - Noise Plan:** Protection Acoustic Comfort **Construction Sites:** Machinic Sounds, Engines; Fences; **Wastelands:** Closed: Verticality, Window, Fence; Environmental sounds; Open: horizontality **Via Surveillance:** Silence Soldiers; Silence Closed space; Sirens; EM infrastructure; **Railway and Subway infrastructure:** Trains cross cutting sounds; Underground vibrations	coordination; Vacuum; inertia **Planners and architects:** Definition conditions; Cutting out, Introduction of dynamics **Wastelands:** Non Human Human sounding **Railway and Metro Infrastructure:** Producing Sound; Rhythm; Volumetric vibration; Acoustic Resonance **Surveillance:** Cut out; Control; Monitoring; **Other inhabitants:** Social control, cut out, (re-) introduction of sounds	Planners and architects: conditioning Subway and Railway infrastructure: rhythm **Political Tonality:** Disappearing Environmental Sounds; Hidden Sonic Warfare **Micropolitics Research:** Crossbenching; Participant Observer; ethics

Table 12. Urban Sound Space Assemblage - Park West

Sonic Material Analysis

Chez nous on frime pas, c'est l'ghetto
Quand c'est tendu, on fait parler les métaux
Wz, 2021

The videoclip of *J'te Baratine Pas* (2021) opens with WZ and a friend strolling down Alphonse Vandenpeereboom Street along the renewed fence of Weststation's vacant terrain. On entering the pedestrian bridge towards Beekkant Square, they cross a friend. Studio experimentation defines the sound of the intro. Playing the track backwards inserts a time-based manipulation that not just accentuates the electronic sound of the track but also has the capacity to trigger a sense of disorientation or futile longing among its listeners before arriving moving fast forward. At first, the focus is on the melody and lyrics. Gradually, the beat moves to the foreground. In the video clip, this transition goes along with the main actors entering a collective space in one of the towers of the social housing complex. The combination of the beat with the melody introduces unsettling juxtapositions. The use of gun shots as rhythmic effects together and vocal samples give the beat another dimension. Vocal samples of the crowd shouting are alternated with samples of individual reactions. These are mainly the voices of boys. The voice of a young woman appears twice. Auto-tune effects are less present compared to other songs by Wz but the ominous atmospherics and spacious arrangements nonetheless add an augmented sonic sphere to this part of the Weststation area.

Due to the temporary fencing and the enclosure of the traversing passerelle, much of the sound space of the vacant lot is inaudible to public audiences. Motorized traffic in the surrounding streets also hinders aural connectivity with the site. The sound sphere within the pedestrian bridge allows concentrated listening to the passage of people passing by. Amplified contact noise emphasizes the presence of railway infrastructure. At street level, sound spheres linked to demolition and

construction work are alternately audible. At the entrance to the pedestrian bridge in Alphonse Vandenpeereboom Street, the soundsphere of an old electricity station volumetrically occupies the space.

Figure 58.West Park Area – Outro Park: Screenshot Videoclip by Wz. J'te Baratine Pas (2021). https://www.youtube.com/watch?v=far0N3nToiU

Sonic material analysis demonstrates the contingent and situated enactment of the urban sound space of and its sound spheres which intermittently overlap. Through literature review on the context of planning, a recurrent practice of individual field recording, and analysis of (popular) media collected over time, I was able to account for sonic experience as the result of an intertwining of strategic planning and design, and violent sound design techniques defining the performative and collective listening space. This triangulation of methods and sources allowed me to trace the sound space of the waiting space as 'unplace' revealing itself through the eerie experience of space triggered by its absence. The combination of methods and sources allowed me to see the non-availability of this sound space as an unfulfilled place waiting to mediate the sonic experience of its future audience.

3.2.3 Design Experimentation: Practice-led research through participation in KU Leuven Faculty of Architecture Master Design Studio (2018 – 2020)

Early in the PhD research project, an opportunity was offered by supervisor Prof Pak to accomplish part of the case study through participation in a design studio and elective course at the KU Leuven Faculty of Architecture, Brussels. From a collaboration between supervisor and PhD researcher, a platform was created for planning and design experimentation in educational practice opening the PhD research to experiments in urban and architectural design starting from the research perspective. Via the collaboration with Prof Pak and network practice organized in the context of higher educational practice I aimed to answer the following research questions:

2. What happens when urban planners consider urban (sonic) vibrations as physical, as well as informational affect?

2.1. What new ways of mapping and understanding urban space become possible?
2.2. Does this affective conception of urban sound contribute to the study of transformative space which also is the scene of urban conflict and performance?
2.3. How does this shift in thinking lead to new planning and design perspectives on urban transition?

As the literature review progressed, I began to interpret these questions as follows:

- How can we install in planning and design experimentation a sonic sensibility for patterns of affective encounters, materialities and multiple positions of involvedness?

The research project informed my participation at the end of the first, second and third year of the PhD trajectory in four educational programs organized at KU Leuven Faculty of Architecture under the coordination of Professor Dr. Burak Pak. In what follows, I will discuss the research outcome of my participation in the master design studio that we have organized in the academic year 2018 – 2019.

3.2.3.1 Master Design Studio (2018)

Masterstudio_L28 [1] was conceived as a platform for critical learning in action rather than as an educational program. Following Professor Dr. Burak Pak's approach, critical learning was considered as a tool for the development of ideas from within the ongoing conversation between graduate students, studio coordinators-researchers and a larger network of sound artists, outreach workers, and urban planners and architects involved in the official planning processes. Throughout the process Professor Dr. Pak and I facilitated the production of critical ideas and motivated the students to create exploratory projects as a means for presenting and testing these ideas.

As part of the PhD research project, the studio operated as a platform for trans-disciplinary research-based practice focusing on a (re-)alignment of planning situations where sonic awareness and sound design strategies are limited to nuisance control. Content driven field research informed alternative sonic strategies and tactics in physical or other manners. Rather than proposing one single design solution for the sonic environment of the area in question, a studio combined theory and practice to create a framework for a possible intervention.

[1] This text outlines the research context and strategy for the Masterstudio_L28 Drs. Caroline Claus and Prof. Dr. Arch. Burak organised for the first time at the KU Leuven Faculty of Architecture in Brussel between September 2018. It is a short version of a paper written for the publication in Sonic Urbanism by Theatrum Mundi (Claus & Pak, 2019b).

Taking a fourfold perspective on the transformation of urban space, a studio facilitated the definition of a framework for a possible intervening by means of a questioning of acoustic territories, sonic cartography or representation, future spatial design, and site sounds. The studio concentrated less on formalistic urban architecture than on a possible intervening in the agency, the experience of formal-mechanic dimensions of urban sonic vibrations as a source for a re-negotiating of urban transformation. By re-negotiation we meant a re-purposition of sonic spatial relations that are capable of getting new socio- (political) encounters off the ground. Rather than demanding students to use a ready-made formalistic approach to the design process, emphasizing physic acoustics, the exercise was about the search for, and the amplification of tensions between intuitive, sensible, and semantic components of urban sound and the disinterested, de-semantified and purely formal elements of urban architecture or urban design on the other. Conceived as practice-led research, method, and tools for urban architectural design, were used for the exploration of a possible articulation of these relations hereby facilitating a possible (re-) negotiating urban transition manifested in new sonic forms.

In what follows, I will discuss the research outcome of the 1st Masterstudio. Between September 2018 and January 2019, I contributed as a researcher to the development and supervision of the Master Design Studio taught by Professor Dr. Burak Pak at the Faculty of Architecture of KU Leuven, Brussels. [2] Drawing on this collaboration with Professor Burak Pak and the joined papers based on this work, I will bring students' projects in relation to the Ph.D. research project positions and propositions. I will discuss the capabilities of the sonic design interventions according to their 'disciplinary positions' and 'urban sonic forms.'

[2] Acknowledgements: Under the guidance of Prof. Dr. Burak Pak and Drs. Caroline Claus in September 2018, eleven students of the KU Leuven International Masters in Architecture enrolled in a fourteen-week urban sound design research project. Participating students were Vilius Balčiūnas, Afanen Eman, Thorisaen Sarah, Ince Melisa, Modzelewski Mateusz, Vasudeo Doyel, Asa Pelin, Yin QI, Auris Alexander, Van Bellingen Leonie, and Daniel Dent Murgui.

Disciplinary Positioning

Half of the students adopted Augoyard and Henri Torgue's phenomenological approach as a building block for the creation of new design tools such as a new typology of urban architectural interventions. Some students included one or more of the sonic effects in their project proposal. Although originally conceived as a human centred approach, for example Sarah Thorisaen, misused it for an integration of non- human agency. A focus on the sonic experience of urban space has prompted students to experiment with techniques such as the interview or survey, narrative explorations, field recording of sounds in relation to the built environment, contrasting qualitative research with the decibel approach used by authorities and planners. From this position, different other disciplines have been approached, without really leaving the discipline of architecture.

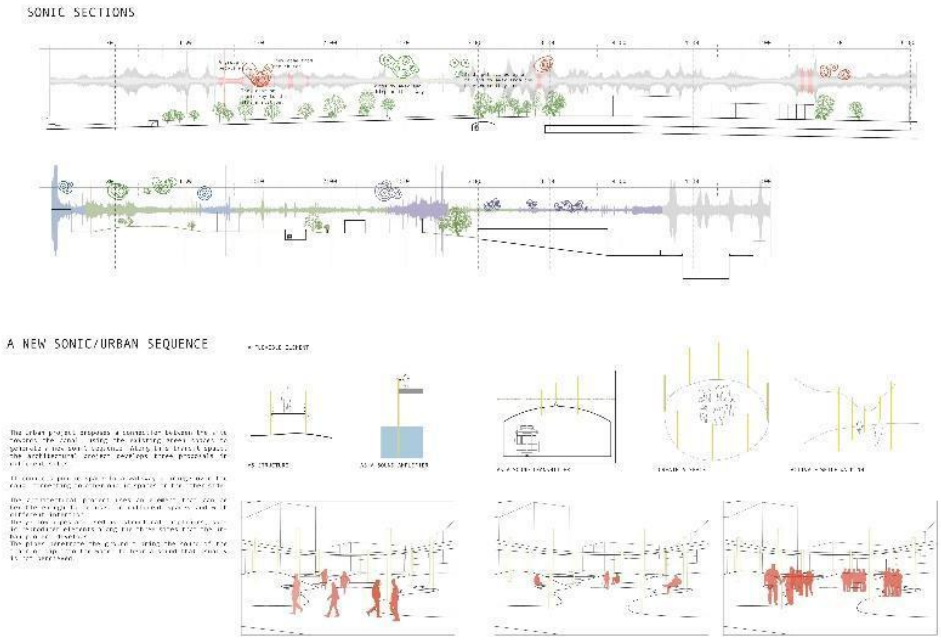


Figure 59. Sonic sections by Alex Auris Gonzales (2019)

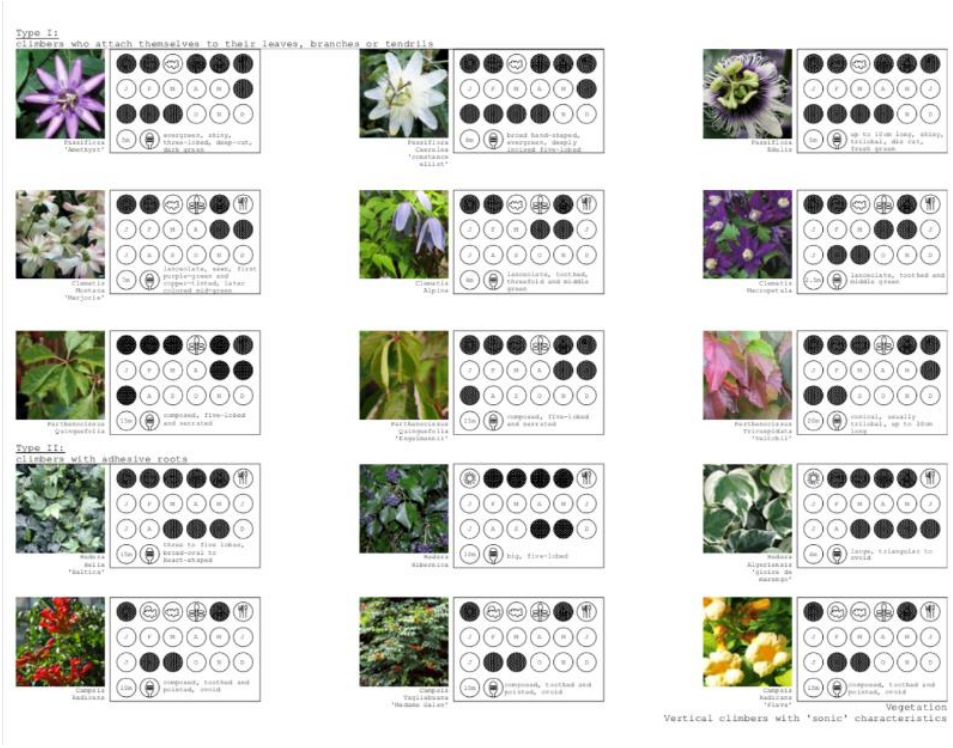


Figure 60. Study of sonic effects among different plants by Sarah Thorisaen (2019)

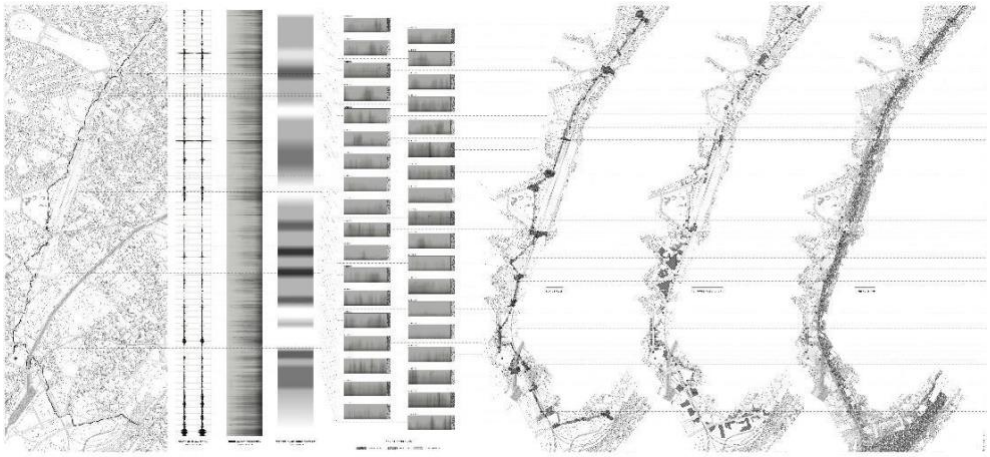


Figure 61.Fragment of the research into sound out of place by Vilius Balčiūnas (2019)

Student Vilius Balčiūnas, aimed for a positive approach to urban noise. He positioned themselves, as crossbencher, in opposition to the dominant approach followed by Brussels authorities and urban planners and architects involved in the on-going development of a socio- recreational green infrastructure space along the line L28. Their design approach we consider as transdisciplinary in nature. Daniel Dent Murgui and Eman Afaneh adopted a transdisciplinary approach as the starting point for the design of a performative installation they both have situated in an early transitional phase of the urban project they were dealing with. Student Leonie Van Bellingen operated from within the discipline of architecture without looking for much confrontation with other disciplines. And finally, some students, Sarah Thorisaen for example, decided to follow a system-based design approach albeit connecting in different ways to the non- human - human relations.

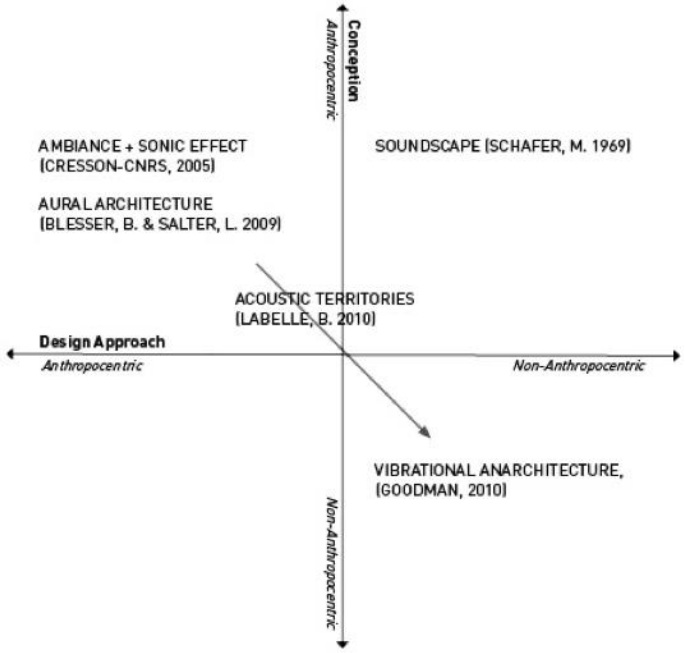


Figure 62. Masterstudio_L28: Towards a Non-Anthropocentric Design Perspective (2019)

Urban Sonic Form

Dealing with sonic spatial qualities not present in other analyses of the area, I argue that this opening to a differing engagement with urban sound and vibration in the design studio, touches upon the limits of traditional planning and design approaches. What appeared in the design projects of students are spatial qualities, urban atmospheres contributing to a particular identity for the urban space in transformation. The final projects highlight different possible sonic approaches to a variation of sonic conflictual aspects of urban transformation. Each project illuminates or introduces elements for listening or other ways of sonic vibrational experience. Different modes of sonic experience have been articulated through design: from a focus on hearing a sound source, to aural attention to formal or structural details and their arrangement in space and time. By connecting in different ways to transitioning space and urban sonic conflict, students highlighted a variety of negotiation, inclusion, autonomy - who gets it in/out? Not all students have designed for a re-negotiation of urban transition by virtue of being made aware of the contingent aspects of a sonic experience, and capable of re-engineering the control-panel. Some design projects like the *Project for Empowerment* by Daniel Dent Murgui, are oriented towards the facilitation of a rule-governed selection, the installation of a protocol, an exercise in autonomy: a subjective experience or relation to urban transition as negotiable.

In several projects the adoption of a phenomenological approach led to a punctual urban sound design proposal. Two students proposed a series of sonic spatial design interventions based on different sonic effects listed in the catalogue of Augoyard and Torgue. The design projects introduced a collection of new aesthetic qualities to strengthen the social and cultural appropriation of a future railway park/place. Through these punctual interventions, the participation of an audience becomes possible. Another project consists of a spatial structure that offers space

for non-human agency in support of a new sonic identity for the Weststation housing complex area. Following a positive noise approach, Vilius Balčiūnas designed for a controlled aesthetic acceptance of urban noise. The experience of a series of types of urban noise is included in the design for a network of public railway park/spaces. The idea of a sonic sequence is also present in the landscape project by Alex Auris Gonzales. Inspired by the introduction of Mark Bain's vibrational anarchitecture for the Mies van de Rohe pavilion (Mireia Pascual, 2017), and some of my contact microphone recordings of the vertical railway infrastructure at Weststation, Alex designed a series of installations enabling sequential vibrational experience of underground railway space across future green networks. These design solutions are transdisciplinary in nature and encourage a further development of new sonic spatial forms for socio - recreational green infrastructure space in Brussels Capital Region.

The rather experimental projects stimulate a multiple appropriation of future public railway space. Performative installations like those designed by Eman Afaneh and Daniel Dent Murgui are intended to infrastructure and augment peoples experience of railway space in the early phase of its transition. Their installations aim to reinforce the interplay between human and non-human relations on one side and between sound and vision on another. Both students explored how a critical sonic approach can play a role in a (re-)negotiation of urban transition.

Three projects evolved from more practical perspectives and concrete architectural approaches. Via an interweaving of acoustic elements in the design for tactile interventions student have researched the negotiability of sound in the architectural scale of urban space. Leonie van Bellingen, for example played with the idea of an acoustic arena as defined by Blesser and Salter (2007) in her design project for a series of arena’s that act as an interactive and socially, as well as physically, connecting narrative for the Weststation area in transition. Basic

acoustic principles determine the system-based design projects. Technical methods for filtering and amplifying sound waves are used to facilitate a multiple use of public and private railway spaces.

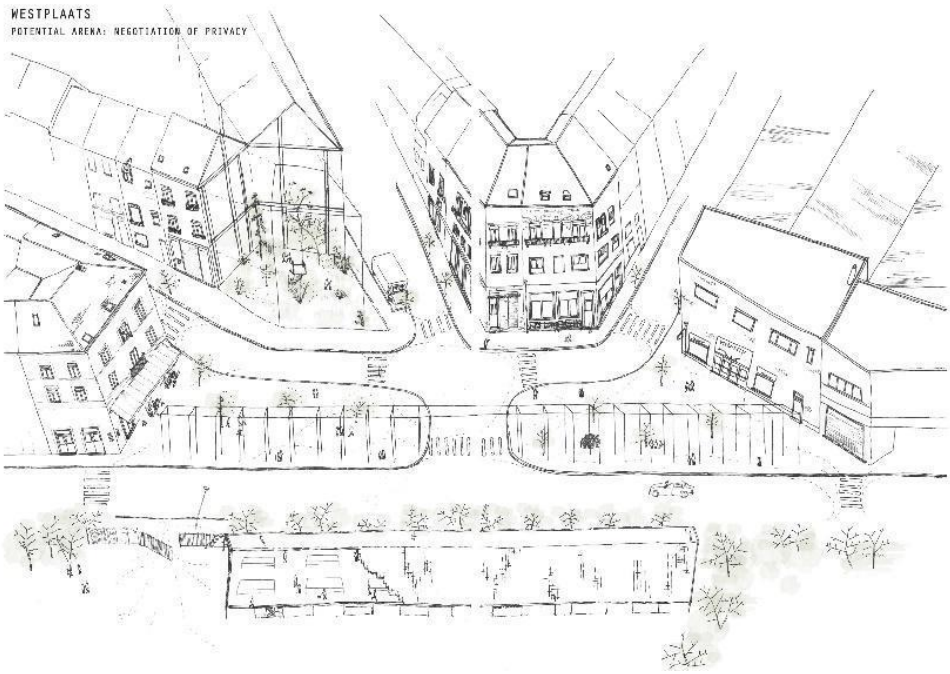


Figure 63. Design for a potential arena for Westplaats by Leonie Van Bellingen (2019)

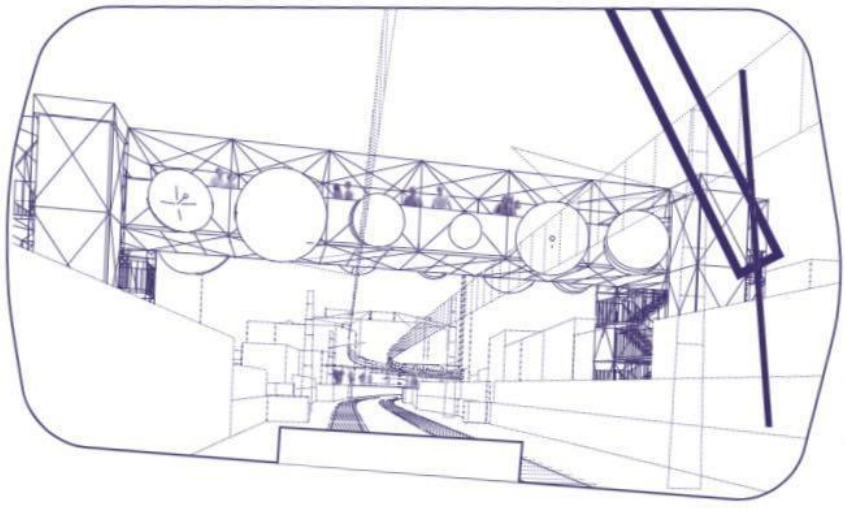


Figure 64. Project for empowerment by Daniel Dent Murgui (2019)

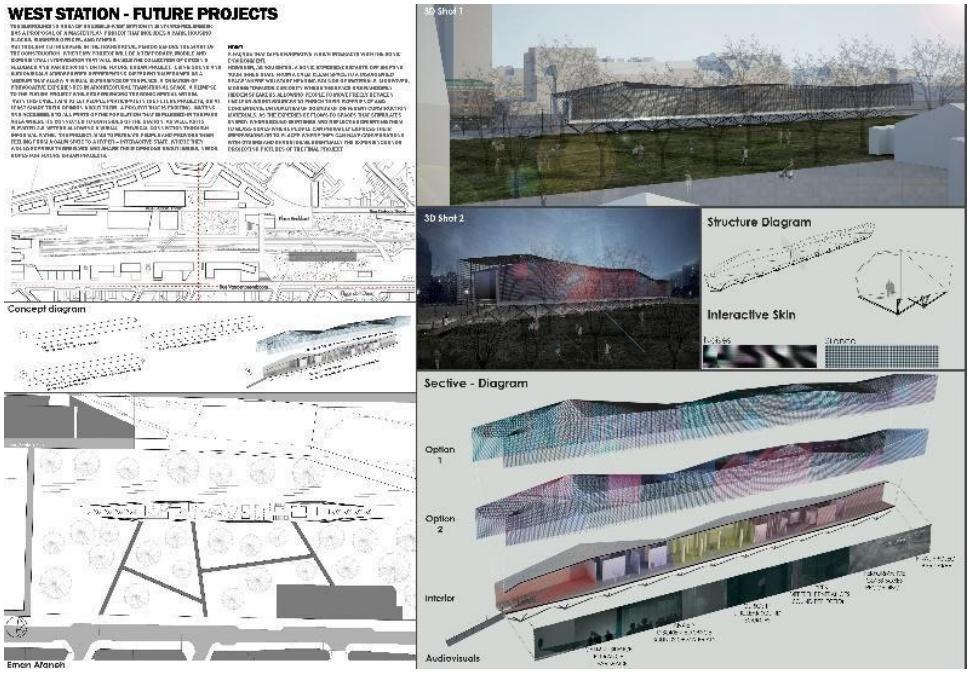


Figure 65. Transitional Architecture by Eman Afaneh (2019)

Sonic Design Typology

Building on the conceptual frameworks introduced at the start of this course and the final design proposals and propositions produced during the design studio, we identify four types of design approaches in relation to their disciplinary position and urban sonic forms applied in the projects:

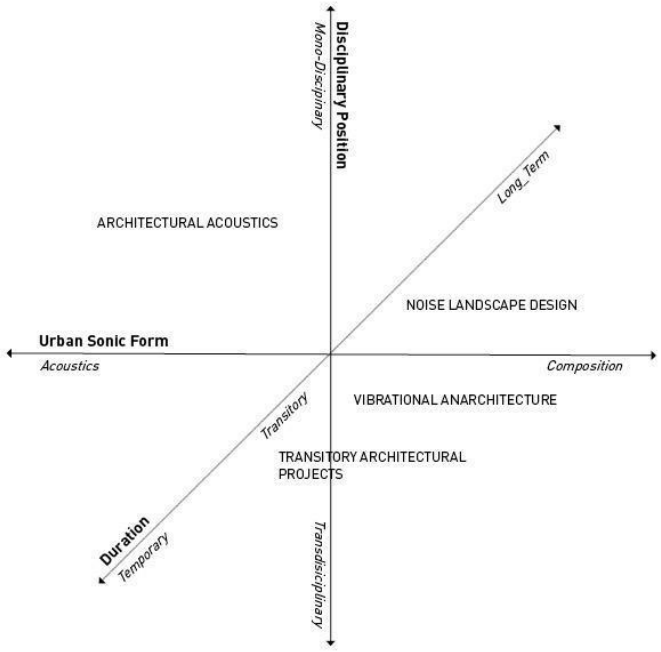


Figure 66. Masterstudio_L28: Urban Sonic Design Typology

- An interdisciplinary urban sound design approach in line with Augoyard and Torgue's suggestion of playing the city via its sonic instrumentarium by modulating its vibrational effects. Within this we distinguish a human versus non-human design approach.

- The noise landscape as an opportunity for urban design. A transdisciplinary noise perspective allows for a gradually embracing of noise and an attitude of experiment. Noise oriented features are integrated in a green framework for urban design.
- The design of transitional architectural projects in which (sonic) vibrations are used as material for a re-negotiation. Ephemeral installations by means of artistic sonic strategies and techniques facilitate a disclosure of urban experience in a context of urban transformation. The experimental nature of the installation encourages an exploration of non-human agency in transitional planning.
- Concrete architectural approaches and projects dealing with sound as a material and elaborating a design idea from an explicit acoustic perspective. The implementation of basic acoustic principles in relation to place-making allow for a controlled (re-) negotiation.

3.3 Conclusions Practice-Led Research

Part III describes a practice-based effort in the (re)alignment of planning and design situations where sonic awareness and sound design strategies are limited to nuisance control. Through practical engagement in a Brussels case study, I have studied how a sonic material research approach allows for the cultivation and preservation of a deviant engagement with urban sound in planning and design research and practice defining transitory urban spaces. By inviting sonic materiality in an explorative longitudinal case study, I aimed to formulate an answer to the following research questions:

1. What is the position and role of sound and vibration in the redevelopment of old industrial railway space which also is the scene of urban conflict and performance?

2. How can we expand a planning and design research focus on hearing or focused listening to a non-anthropocentric conception of sound as vibrational affect?

    2.1. What new ways of mapping and understanding urban space become possible?
    2.2. How does this shift in thinking lead to new planning and design perspectives on transitory railway space?

To answer these questions, I conducted practice-based research through exploratory, qualitative, longitudinal case study. Throughout this study, I did research on the use of sonic cartography as analytical tool for addressing the urban sound space and sound spheres of transformative railway space, the implementation of this practice in a design studio, the use of methods and tools that allow for a situated sonic material engagement.

Sonic Cartography as Analytical Tool

Through elaboration of a sonic cartography (2020 - 2021), I aimed for a better understanding of the position and role of sonic and vibrational affective flows of transformative railway space along Brussels Western ring railway L28. Exploring the potential of a situated engagement with sonic materiality, I have focused on sonic and vibrational relations, affective flows, capacities and micropolitics of the urban sound spaces of six transformative railway spaces stretched over two zones situated along Brussels L28 railway area.

Attuning to affective sonic materiality in a practice of sonic cartography enabled a study of the position and role of sound and vibration in the redevelopment of old industrial railway space which also is the scene of urban conflict and performance in two ways: First, it stimulated diffractive analysis via an exploration of situated sonic material engagement as a researcher. This exploration motivated interdisciplinary research on multiple constitutive affective relations between the events to be researched, methods and (recording) tools, ethics, academic and urban settings of the research, theoretical frameworks, masterstudents participating in the research, a deepened engagement with data and presentations as performative statement. Second, inviting sonic materiality in the study of railway space enabled to account for sonic experience as the sonic material felt outcome of an entanglement of strategical planning and design, the use of surveillance and/or military tactics, and sound design techniques defining performative and collective listening space and how this relates to the accessibility of the studied transformative railway space and the surfacing of unplace.

Attuning to affective sonic materiality in a practice for sonic cartography contributed to knowledge production on the position and role of sound and vibration in the redevelopment old industrial railway space along Brussels Western

ring railway L28 in three ways: 1) insights into how these spaces became sites of militarization, not only because of their history of terrorism-related activities such as recruiting and preparing for the Paris and Brussels attacks, but also because of an expansion of surveillance infrastructure and police control, the imposition of a curfew supported by acoustic comfort strategies, as well as via the appropriation of these sites by local hip-hop scenes using gun violence in their sound and video art; 2) articulation of urban sound spaces and various sound spheres for the six studied railway spaces and involved human non-human, non-human non-human, and human human relations; 3) understanding of how the contingent and situated enactment of the urban sound space and their sound spheres relates to dynamics of acoustic territorialization in six of the studied railway spaces and in locations such as the Laeken Pocket Park, Weststation wasteland, Beekkant Square also to a surfacing of unplace.

To illustrate this, I will discuss how a situated engagement with affective sonic materiality contributed to knowledge on the position and role in the transformative environment of west station area and more specifically, in the on-going transformation of Beekkant Square. The square, a mobility hub, and the central square of a residential area west of the railway yard, owes its current form of greened arena situated between two social housing towers largely to the design of the larger social housing complex *Cité Edmond Machtens.* The central square and its arena is home to a popular hip-hop scene that has been producing and distributing music and video clips both independently and in collaboration with local non-profit organizations since the late 1990s. Beekkant Square regularly operates as a staging ground for video clips, music production, lyrics as well as for concerts and other collective listening. The square is also notable for its long-term problems of crime. Following the Paris, Brussels and Zaventem attacks, there was increased monitoring and surveillance realized by the police and temporary also by armed soldiers patrolling the entrance to the underground station. Today, the

transformative railway space in this part of the L28 railway is heavily controlled by public and private actors. At street-level, police patrols and city guards pass by regularly and via the instalment of a video surveillance system permanent monitoring became possible.

Residents' complaint on social nuisance caused by youth was followed by a decision to temporarily cut out meeting space and its sound spheres via the recurring installation of a crowd ban. *Quiet.Brussels* (2019) and preliminary policy studies (Leefmilieu Brussel, 2018), offer a strategic framing of these decisions on noise and nuisance control. Between the two periods when an assembly ban was imposed, local musicians and their audiences responded with the production and on-line distribution of a music video clip in which they demarcated their territory, among other things, by using gun violence in their video and music driven by its aggressive beats.

Opening the analysis of Beekkant Square to a situated engagement with affective sonic materiality using interdisciplinary triangulation of methods and sources, it became possible to account for sonic experience as the sonic material felt outcome of an entanglement between strategic planning and design processes, acoustics of the social housing complex, surveillance and/or military infrastructure and operations monitoring public space, and the deployment of violent sound design in performative and collective listening practices. Attuning to affective sonic materiality allowed me to account for the political tonality of the sound space of a transformative railway space and to explore how processes of acoustic territoriality relate to the accessibility of transformative railway space. The outcome of this sonic cartography brings me to a preliminary criticism of prevailing acoustic comfort strategies and the sonic argumentation behind the decision for the installment of a crowd ban in a public space that was originally designed as a meeting place and long used by local youth as a performative and collective listening space.

Understanding sonic experience as the sonic material felt outcome of an entanglement of strategical planning and design, the use of surveillance and/or military tactics, and sound design techniques defining performative and collective listening space, I argue to shift planning and design perspectives away from subjective percept and individual human experience towards the dynamics of transversal power of vibrations engaging bodies, human and non-human, individual as well as collective. Building on the outcome of the above practice development in sonic cartography, I argue that a situated engagement with affective sonic materiality in planning and design research concentrating on transitory railway spaces contributes to a preservation and cultivation of a criticism towards sonic approaches structured around engineering of acoustic comfort or soundscape design.

Implementation of Sonic Cartography in a Design Studio

The search for a sonic material approach in planning and design research, informed my contribution to the educational research practice coordinated by Professor Pak. Participation in the development and teaching of elective courses and masters design studios enabled research on the implementation of this approach in planning and design experimentation a sonic sensibility for patterns of affective encounters, materialities and multiple positions of involvedness. realized at an earlier than initially planned stage of the research, the approach of integrating a sonic material approach was very open and exploratory.

The masterstudio concentrated less on formalistic urban architecture than on a possible intervening in the agency, the experience of formal-mechanic dimensions of urban sonic vibrations as a source for a re-negotiating of urban transformation. By re-negotiation we meant a re-purposition of sonic spatial relations that are

capable of getting new socio- (political) encounters off the ground. The exercise was about the search for, and the amplification of tensions between intuitive, sensible, and semantic components of urban sound and the disinterested, de-semantified and purely formal elements of urban architecture or urban design on the other. Conceived as practice-led research, method, and tools for urban architectural design, were used for the exploration of a possible articulation of these relations hereby facilitating a possible (re-)negotiating urban transition manifested in new sonic forms. Following the design approach introduced and the final design proposals and propositions produced during the design studio, we identified four types of design approaches in relation to the disciplinary position and urban sonic forms applied in the projects.

Tools for a Situated Sonic Material Engagement

Through experimentation with practices of field recording, sonic journalism and sound walking and the integration of these tools in the format of an audio paper, I explored the potential of a an abductive, rhizomic and diffractive research approach for planning and design research. My approach to 'field recording' is based on a model for crossbenching between sound arts practice and urban planning and design research. This interdisciplinary approach impacts the positioning of the recordist, decisions on recording technology, the selection of frequency range, moment, rhythm, and duration of the observation. Confronting ethical challenges, I further cultivated this practice by moving to the boundary frequencies of unsound, choreographing different sound walks and recording practices, and an on-going reconsideration of unauthorized recording.

Moving away from the position of the researcher outside the observed phenomena and a pursuit of knowledge production via methodologically structured interpretation, toward a 'situated material engagement', throughout the case

study, I have explored the potential of a diffractive, relational engagement with different data sources hereby focusing on novelty. From this situated engagement with sonic materiality, I became interested in a rendering of sonic experience as the sonic material felt outcome of an entangled relations connecting strategical planning and design, the use of surveillance and/or military tactics, with sound design techniques defining performative and collective listening space. The occasional became more important, and accounts of contingent and situated enactments, though not necessarily categorized in advance, were considered capable of making a difference to the researcher's position and the research itself.

For the sonic material analysis, I have explored the potential of a sonic journal as a tool for method and source triangulation. I used it for the sampling, editing, and mixing of data that I collected via different methods from various sources such as field recordings, literature, and online music video clips. The use of a sonic journal supported a simultaneous exploration of conceptual tools and case study research by facilitating a continuous alignment of the analytical framework with the empirical material. It allowed for both the integration of different types of collected data as well as a deepened engagement with it.

The Audio Papers – Manifesto inspired the integration of the sonic cartography, soundwalk and sonic journal in the communication on research process and outcome by use of the audio paper. Exploring the audio paper as a format for communication, I aimed to move away from supposedly ‘neutral’ presentations of outputs towards a more relational and performative presentation of research outcome. I used this format for the presentation of abstracts as well for on-site presentations and discussions. Via the integration with two sound walks, I have studied how communication about research can take the format of a performative statement with a concrete and site-specific aesthetic of location sounds.

4 PART IV | CONCLUSION

Following a restatement of aims, research questions, methodology and key outcome, in this final part, I will discuss the outcome of the research project. Responding to the question on the position and role of urban sound in planning and design research on old industrial railway space conversion to green space, I will argue that attuning to affective sonic materiality in urban analysis and design contributes to a re-politicization of urban ecological relations involved in the transformation of old industrial railway spaces. In conclusion, I will outline why and how I envision the outcome of this PhD research advancing planning and design research.

4.1 Restatement of the research aims questions, hypotheses, and methodological approach

Via literature study and situated sonic material engagement, I have studied the position and role of urban sound and vibrations in relation to the on-going transformation of railway space along Brussels L28 that became the scene for contemporary urban violence. As a sociologist-spatial planner with experience in social participation and sound studies, I wanted to explore the potential of a critical and creative sonic approach for a critical (re-)negotiation of urban planning and design processes.

Following a situated sonic experience of contemporary urban violence in transformative railway space and a curated confrontation with limited sound approaches in urban planning and design research, at the end of 2017, I started a PhD under supervision of Professor Dr. Pak and Peter Cusack. Building on the outcome of this PhD research and participation in educational practices under the coordination of Professor Dr. Burak Pak, I argue for an opening of planning and design research to a relational, performative sonic approach.

In this final section, I will discuss the outcome of the doctoral research by going back to the research questions and indicating why and how I think findings can inform planning and design research and practice:

1. 1. What is the position and role of sound and vibration in the redevelopment of old industrial railway space which also is the scene of urban conflict and performance?

1.1. Should we extend the focus on hearing or focused listening to a non-anthropocentric conception of sound as vibrational affect?

2. What happens when urban planners consider urban (sonic) vibrations as physical, as well as informational affect?

2.1. What new ways of mapping and understanding urban space become possible?

2.2. Does this affective conception of urban sound contribute to the study of transformative space which also is the scene of urban conflict and performance?

2.3. How does this shift in thinking lead to new planning and design perspectives on urban transition?

Throughout the research, both literature and practice development, I addressed these research questions via the following questions:

- How can we practically engage in a rethinking and reconfiguring of assumptions on urban sound and vibrations that structure planning and design research focusing on sonic strategies for urban transition?

- How can planning and design researchers take into account a sensibility for patterns of affective encounters, materialities and multiple positions involved in the transformation of old industrial railway spaces?

- Does a conception of unsound and practices structured around unhearing enable the articulation of alternative proposals, other compositions, resolutions as lines of flight, the planning and design of processes of deterritorialization?

The practice-led research has been structured around the following research tracks:

- Relational, performative sonic material approach
- Sonic cartography
- Planning and design perspective
- Site sounds

Combining literature study and practice development via explorative, longitudinal case-study, I aimed to address the problem of planning and design practice's incapacity to consider sonic experience as the material felt outcome of an entanglement of strategical planning and design, the use of surveillance and/or military tactics, and sound design techniques defining performative and collective listening space. Interpreting this problem as what Patricia Reed defines as 'debordered exposure,' motivated the search for a move away from both an engineering acoustics concentrating on urban sound and vibration as nuisance to be controlled, as well as from soundscape-based approaches focusing on a sonic perceptual healthscape to be sculpted. Drawing on urban research on global conflict, ideas linking contemporary urban violence to nihilism and hauntology,

affect theory and military urbanism, a rethinking of sound as affect in sound studies, and the introduction of assemblage thinking in planning and design research, I argue for a decentering of the listener by attuning to affective sonic materiality in planning and design research. Building on literature study and practice development throughout exploratory and longitudinal case study research, I argue that a situated sonic material engagement in planning and design research contributes to the preservation and cultivation of critical sonic approaches for planning and design practices concentrating on industrial railway space conversion into greenspace.

The search for a rethinking of the position and role of sound and vibrations in planning and design defining green space development along railway line L28 and the invitation by Professor Dr. Burak Pak to participate in the development and teaching of his design studio and elective course early in the research process, inspired an abductive research approach. Through practice development in case study and participation in educational practice, combining different disciplines and methods, I demonstrated how a situated sonic material engagement, grounded in a process of rethinking urban (sonic) vibrations as physical, as well as attunement to informational affect, can contribute to a re-consideration of sonic conflict in the planning and design of transitory railway space along the Brussels Line L28 and consequently, and from here, how this shift in focus can contribute to a re-negotiation of the on-going transformation.

Building on the outcome of literature review and practice-based research exploring sonic cartography as analytical method and an interface for design experimentation, I argue that a situated engagement with affective sonic materiality enables research on (i) sonic experience as the outcome of a co-existence of processes of reconversion and militarization in the sound environment of transformative railway space; (ii) urban sound and vibration localizing affect in

the (abstract) sonic space of a transformative railway site; (iii) the involvement of urban sound and vibration in dynamics of territoriality, the search for control over transformative space; and (iv) the negotiating capacity of urban planning and design practice in a context of old industrial railway space conversion to green space.

4.2 Final reflections on the outcome (and future directions)

4.2.1 Relational, Performative Sonic material approach

Informed by the *European Noise Directive* (2002), *Quiet.Brussels* (2019) dominantly considers urban sound and vibrations as a socio environmental issue, a health problem related to co-existence. For Brussels, urban sound is pre-dominantly a socio-technical project. Brussels noise policies are based on quantitative measurement techniques for nuisance control and implementation in urban planning and design. Frequency became an indicator of nuisance. When discussing urban sound and vibration in the context of planning and design projects for Brussels railway space development, both public and private developers are dominantly concerned with acoustic comfort resulting mostly reflected in a re-assessment of sound and vibrations as nuisance. All of this assumes that the manifestation of sound and vibrations induce discomfort among citizens.

A situated sonic experience of contemporary urban violence in transformative railway sites motivated a rethinking of the position and role of urban sound and vibrations in planning and design processes. As a sonic researcher involved in planning processes, I noticed how in the context of planning and design research, 'sound' is remarkably underdeveloped as a concept and indicator for policy and design decisions. Building on the outcome of this PhD research, I argue that within a context of militarized urban transformation, in exploring sonic spatial strategies

for dealing with alienation, repression and immobility in planning and design research, the importance of the affective and disruptive capacities of sound cannot be underestimated. Criticizing dominant approaches structured around decibel measurements and anthropocentric conceptions of soundscape and sonic experience, the research attempts to engage in the contemporary discourse on sound in planning and design research by arguing for a relational, performative sonic material approach to allow for criticism and a broadening of the space of urban sonic capabilities in planning and design practice.

The literature review that underpinned my ontological positioning of a situated sonic material engagement concentrates respectively on urban conflict as contemporary urban violence, sound as vibrational affect, and socio-spatial-temporal configurations that co-generate affective sound spheres. Given the Brussels context of a transformative railway space becoming a site of asymmetric warfare, I argue that planning and design research and practice concentrating on the greening of railway space cannot simply approach urban sound and vibrations as nuisance. Building on urban studies addressing urban conflict as contemporary urban violence and military urbanism's definition of urban space including its popular culture as a site of warfare motivated a move to the ontological level of affect.

Goodman's (2009) theoretical work on sonic warfare and his notion of 'unsound', informed a non-anthropocentric conception of sonic experience as the material sensed outcome of a vibrational nexus or collective entity determined by its vibrational consistency. Inspired by bass materialist research concepts and practices, for him, transmission of force can be thought as 'a-modal'. Approaching this topology of vibrating surfaces outside of semiotic registers, he considers media themselves as being expressive. I consider Goodman's theoretical work on sonic warfare as a critical, constructive alternative for anthropocentric perspectives that

are dominating debates on sound art, urbanism, and architecture. Goodman moves the focus away from a human-centred philosophy of sound towards a wider ontology of vibrational force. The shift towards this materialist perspective allows him to question modalities in which human and non-human components jointly participate in processes of sonic production by concentrating on the way vibrations define relations by moving in between and within human and non-human bodies. From this perspective, matter is understood as processual and fundamentally relation-bound with bodies interconnected by vibrations, emerging within relations that did not pre-exist. In line with Goodman, I argue that the study of interactions between the military and the city from a perspective on sound, requires a decentering of the experience or perception of human listener and an opening of planning and design research to material-affective analysis.

Goodman's 'ontology of vibrational force' has been situated in a larger body of work discussing what Marie Thompson (2017) describes as the "ontological turn" in sound studies. Annie Goh (2014; 2017), proposes a model for sonic materialism crosscutting the dichotomy of mind-independent or mind-dependent material conceptions. In line with Barad (2007) and Harraway (1997), Goh argues for a 'sounding situated knowledges' structured around the notions of 'embodiedness' and 'situatedness' for addressing sonic matter as actively and inextricably involved in material-discursive relations. Goh's suggestion for a sonic cyberfeminism and a 'sounded situated knowledges' informed the definition of relational, performative sonic material research approach, both via the conception of sonic matter as inextricably linked to material-discursive relations as well as via her argument for an integration of knowing and being plus ethics. Drawing on the work of Barad and Haraway, Goh not only shows how to conceptualize the social and sonic material as ontologically entangled and how to rethink the subject-object relationship in sonic knowledge production, but she also demonstrates how to explore and account for this entanglement and relationship in epistemological practice.

Rethinking the ontological and epistemic conditions for research on the position and role of urban sound in the transformation of railway spaces marked by contemporary urban violence, building on the work of Goodman and Goh, I have argued for the implementation of a relational, performative sonic material research approach that involves a simultaneous exploration of both a relational and performative ontology and epistemological practices. Goodman's theoretical work on sonic warfare and his introduction to the notion of 'unsound' moved the research to the ontological level of vibrant matter. Via Goh's (2017) criticism of sonic materialism and her work in sonic cyberfeminism, I have argued for an ontological positioning that not merely recasts the experience of the sonorous into a non-anthropocentric topology of vibrating surfaces with all matter as reservoirs of mediatic, non-binary modes of contamination but a positioning that is also intertwined with the epistemological and the ethical. In line with Barad's (2007) 'ethico-onto-epistem-ology', Haraway's (1988) work on 'situated knowledges' and Annie Goh's 'sounding situated knowledges', I have argued for a re-negotiation of the subject-object relation in sonic knowledge production. In search for a sonic approach structured around sonic experiences of transformative railway space which operates as the scene of urban conflict, building on Haraway (1988), I have argued not to start planning and design research from a position of oppression. In line with Thompson (2017) and Goh's (2017) criticism of Cox's sonic materialism, I consider it important, as myself being a sonic researcher involved in urban planning and design research, to criticize the idea of listening and sonic experience as an unmediated way of knowing and to reconsider the positioning of the researcher, decisions about technology and the use of recorded sounds as neutral documentation of acoustic events taking place in an urban context and to do so also in terms of an ethical response.

Drawing on the sonic research discussed above and the work of urban researchers deploying relational thinking in their critical analysis of urban space, I defined a

relational, performative sonic material approach that allows for a deviant engagement with urban sound. Attuning to affective sonic materiality in planning and design research motivates an engagement with sonic experience as the sonic material felt outcome of an entanglement of strategical planning and design, the use of surveillance and/or military tactics, and sound design techniques defining performative and collective listening space. To address both the mechanisms explaining the performativity of urban sound space as well as the production of affective sound spheres and their capability to mediate sonic experience and demarcate urban space via their involvement in dynamics of acoustic territoriality, I propose a situated sonic material approach structured around the notions of 'unsound' and 'unplace' and modes of disruptive and infectious listening or 'unhearing.'

4.2.2 Sonic cartography

Through practical engagement in a Brussels case study, I developed a sonic material research approach that allows for the cultivation and preservation of a deviant engagement with urban sound in planning and design research and practice defining transitory urban spaces. I developed a practice of sonic cartography that can be used as analytical tool for addressing the performativity of urban sound space and the production of affective sound spheres and their capability to mediate sonic experience and demarcate urban space via their involvement in dynamics of acoustic territoriality. The sonic cartography has been structured around the notion of unsound and principles of unhearing, abduction, crossbenching, diffraction and rhizomanalytic analysis. From a situated engagement with affective sonic materiality, it became possible to study sonic and vibrational relations, affective flows, capacities and micropolitics of the urban sound spaces of six transformative railway spaces stretched over two zones situated along Brussels L28 railway area.

In becoming a situated sonic material researcher, I have experimented with different modes of listening from within human bodies and from within the non-human realm where the human ear is not necessarily the primary domain of sonic experience. In this context of practice-led research, unhearing has not only been interpreted as an attempt to attune oneself to the unheard which is always imperceptible and virtual, but also as an active effort to make oneself unheard. Learning to be unheard as a sonic material researcher, involves a process alienation of hearing that is 'unhearing'. It connects the researcher with the still alienated parts of their sensorium. Via the introduction of contact microphones and EM inducers, in line with the discussed notions unsound and unhearing, I developed a sonic approach to the urban environment of transformative old industrial sites which does not take the human auditory sensorium as its central focus. This decentering of the human listener, via the use of different technology, allows for the introduction of the non-human ear. The result is a non-anthropocentric research approach that opens planning and design research for the articulation of non-human sonic experience in planning and design.

Attuning to affective sonic materiality in a practice of sonic cartography enabled research on the position and role of sound and vibration in the redevelopment of old industrial railway space which also is the scene of urban conflict and performance in two ways: First, it stimulated diffractive analysis via an exploration of situated sonic material engagement as a researcher. Second, inviting sonic materiality in the study of railway space enabled to account for sonic experience as the sonic material felt outcome of an entanglement of strategical planning and design, the use of surveillance and/or military tactics, and sound design techniques defining performative and collective listening space and how this relates to the accessibility of the studied transformative railway space and the surfacing of unplace.

Inviting affective sonic materiality in a practice for sonic cartography contributed to knowledge production on the position and role of sound and vibration in the redevelopment old industrial railway space along Brussels Western ring railway L28 in three ways: 1) insights into how these spaces became sites of militarization, not only because of their history of terrorism-related activities such as recruiting and preparing for the Paris and Brussels attacks, but also because of an expansion of surveillance infrastructure and police control, the imposition of a curfew supported by acoustic comfort strategies, as well as via the appropriation of these sites by local hip-hop scenes using gun violence in their sound and video art; 2) articulation of urban sound spaces and various sound spheres for the six studied railway spaces and involved human non-human, non-human non-human, and human human relations; 3) understanding of how the contingent and situated enactment of the urban sound space and their sound spheres relates to dynamics of acoustic territorialization in six of the studied railway spaces and in locations such as the Laeken Pocket Park, Weststation wasteland, Beekkant Square also to a surfacing of unplace.

The outcome of this sonic cartography motivated a critical positioning towards traditional acoustic comfort strategies already being implemented in planning and design practice, the violent sound design of performative and collective listening practices, the rationale behind military and police strategies and other political decisions targeting the collective appropriation of transformative railway space. I therefore consider this situated sonic material approach to sonic cartography as critical alternative to traditional sonic planning and design approaches.

Throughout the process, I have searched to move away from supposedly 'neutral' presentations of outputs of urban analysis towards a more critical assessment of the micropolitics of the research project itself. Through experimentation with the formats of the sonic journal, audio walk and audio paper, I developed a diffractive,

rhizomic reporting approach. Inspired by co-supervisor Peter Cusack's practice of sonic journalism, I developed a practice of sonic journal for data mining, the collection of empirical data sources. Combining different perspectives, disciplines and research methods and materials has been a challenge throughout the research process. In practice, the shift to a position of "crossbenching" and "situated material engagement" implied an interdisciplinary triangulation of methods and mobilization of data sources. Knowledge and the production of knowledge enters the research through interdisciplinary editing, sampling, and mixing of data. For this interdisciplinary navigation, I played with Miessen's (2016) model of the crossbencher. I argue that further research is needed on how this sonic mapping can be realized from an interdisciplinary collaboration with a balanced distribution of interest and consideration for different disciplinary positions involved.

4.2.3 Planning and design perspectives

The third track of the PhD research consisted of the exploration of urban sound planning and design as a method of composition, an activity of construction and performance for infrastructuring processes of re-negotiation. It is inspired by an interest in forming, intervening, or interrupting an urban sound environment and mediations of people's sonic experience.

For the practice-based research that was realized through participation in the development and teaching of an educational practice coordinated by Prof Pak, I have focused on the implementation of the sonic cartography in planning and design experimentation. The program and the collaborative approach to both the elective course and design studio were inspired by research in 'critical spatial practice' and the model of the 'crossbencher' (Miessen, 2016). The outcome of these research actions demonstrates how a rethinking of urban sound and

vibrations enables an alternative and critical articulation of material-vibrational relations and proposals, compositions, resolutions, and line of flights.

A shift from anthropocentric to non-anthropocentric design perspectives motivated master students in architecture in their individual endeavors to strategize urban sound design for the transformative space along the railroad, not only to think about the position of the listener, but also to question their own disciplinary positioning. Situated early in the research process, the student projects reflect a multitude of interpretations of urban sound and vibrations. Some students like Alex Auris Gonzales, Eman Afaneh and Daniel Dent Murgui proposed a strategic exploration of urban sound space. Their rather tactical proposals exposed some sonic-spatial capabilities of planning and design research for infrastructure processes of de-territorialization and re-negotiation. The dynamic planning and design proposals, informed by the model of crossbenching and exploring a rhythmic anarchitecture as a method for reaching out to urban sonic spatiality, illustrate how a conception of unsound can contribute to planning and design research's capability to infrastructure processes of re-negotiation.

Drawing from an early introduction of the relational framework and the final design proposals and propositions individually produced by the masterstudents as outcome of the design studio under the coordination of Professor Pak, through this collaboration, I was able to locate the different design approaches and potentials in relation to disciplinary positioning and urban sonic form. From this collaboration and mapping, we conclude on planning and design perspectives as follows:

First, experimenting with an interdisciplinary urban sound design approach following Augoyard and Torgue's suggestion to approach the city as sonic instrumentarium planners and designers explored a possible modulation of vibrational effects through design both from a human and non-human perspective.

Second, approaching the urban sonic environment as a noise landscape opened up to a creative approach to noise in planning and design. A transdisciplinary noise perspective allows for a gradually embracing of noise and an attitude of experiment. This approach supports the integration of noise-oriented features in planning and design. Third, potential direction was the design of transitional architectural projects in which (sonic) vibrations are being used as material for discussion and re-negotiation of transitory public space. Imagining ephemeral installations by means of artistic sonic strategies and techniques facilitates a disclosure of urban experience in a context of urban transformation. The experimental nature of the installation encouraged an exploration of both human and non-human agency in transitional planning. The final perspectives consist of concrete architectural approaches opening to projects that deal with sound as material and plan a design idea from an explicit acoustic perspective. The implementation of nuisance control acoustics in relation to place-making projects was presented as planning and design driven facilitation of (re)negotiation.

I conclude that these planning and design perspectives motivate more research as, for example, on disciplinary positioning when one is dealing with urban sound as urban designer or planner, and on reaching out to the complexity of transitory or future urban sonic space in a context of transitive planning and design processes for old industrial railway space conversion. In the studio, the combination of different disciplines proved to be a challenge. Combining different disciplines increased the complexity of the design assignment. Complexity increased for areas such as theoretical understanding, methods and techniques, development of a perspective and project. The same can be said for reaching out to the superdiversity and the complexity of transitory or future urban sonic space in a context of transitory planning and design processes. At the level of the researchers, the crossbencher model was tested by engaging in a shift from mono-disciplinarity to transdisciplinarity through interdisciplinary conversation and collaboration. Again,

this introduced challenges for both individual PhD researchers and collaboration between researchers from different disciplinary backgrounds. How this combination of different disciplines and practices and time perspectives can be balanced in an interdisciplinary planning and design approach, both in practice and in the context of an educational program, seems an interesting track for future research. It can be interesting to study through practice development how collaboration around this theme can connect research groups active in other disciplines such as sound art and engineering.

4.2.4 Site sounds

The Audio Papers – Manifesto inspired the integration of the sonic cartography, soundwalk and sonic journal in the communication on the process and outcome by use of the audio paper. The audio paper as a format enabled a more relational and performative presentation of the research outcome. As part of this PhD research, the audio document format has been adopted for the presentation of abstracts, the manuscript as well as for on-site presentations and discussions. The combination or integration of a sound walk enabled research communication in the form of a performative statement with a concrete and site-specific aesthetic of location sounds. The sound walk enabled a continuous presence of site or terrain along the research process. I argue that this continuous or recurrent engagement with the sonic materiality of a transformative site plays is supportive to planning and design research's capability to contribute to a re-negotiation of urban transformation. The site itself becomes a locus of both rethinking and re-negotiation. Structuring this engagement via a conception of unsound and practices of unhearing motivates a search that goes beyond representing a physical location or perceptual soundscape and reaches for a more abstract sonic space.

APPENDIX:

APPENDIX 01 – KEY CONCEPTS

In the list below key concepts are ordered according to their position in the text. I consider them as foundational to the performative, relational sonic approach discussed above.

Unsound:

Given the Brussels urban context of old industrial railway conversion to green space that is also the scene of urban conflict, plus a conditioning of the research project, I adopt Goodman's (2009) suggestion to recast the experience of the sonorous into a non-anthropocentric topology of vibrational surfaces. Therefore, I argue to structure the sonic approach to planning and design research around his conception of 'unsound'.

Goodman coined the term 'unsound', for thinking the not yet audible, a dimension of sonic virtuality he locates in a confrontation between the sonic and the transensorial. Ewé, (2021) points out how Goodman reflects upon "sound-as-vibration as well as sound-as-experience" (p. 451) and how he uses the notion of 'unsound' for indicating different types of sonic potentiality (see also section, 2.2.2.2).

Unhearing:

By translating notions of sound-as-vibration as well as sound-as-experience into practical methods and tools for alienated forms of hearing or 'unhearing' in planning and design research, building on Tobias Ewé's (2020) conception, I have searched for an opening up of planning and design research to the manifestation of ground structures and machinations of the unheard. Ewé (2021) defines the

‘sonorous’ or ‘unheard’ as “that which falls short of being ‘aurally perceived’” (p. 449). Following this reasoning, an ‘unheard unsound’ is understood as a virtual sonic event that does not necessarily need to happen. Unhearing he understands as the effort of tuning in the very potential of the unheard to affect it. According to Ewé, the virtuality of the unheard interfaces with the actual via its capacity to induce material alterations there (see also section, 2.2.2.2).

Urban Violence:

Problematizing the lack of a definition of urban violence in urban research, Pavoni and Tulumello (2018) argue for a better definition of the ‘urban’ to arrive at a better understanding of its appearance. Instead of one definition, they propose three conceptual shifts that they see as many necessary steps to theorize and define urban violence: first, they state that urban violence emerges as a specific historical category that results from the process of capitalist urbanization ; second, they argue to search beyond the violence-security dichotomy; and, third, using atmospheric thinking, they problematize the focus on security and the elimination of violence as false assumptions and argue for a better understanding of the embedding of violence in the urban and therefore also for a more complex conception of the urban itself (see also section, 2.2.1.3).

This theoretical study on urban violence inspired a critical questioning of the focus on ‘acoustical comfort’ in Brussels planning and design projects as well as in direct interventions following complaints of nuisance.

New wars and contemporary urban violence:

Sassen and Kaldor (2020) use the term ‘new wars’ to refer to a wide field of violent conflicts that use the city as an instrument and operative site. Acknowledging their preference for the city and urban-based conflict they associate ‘new wars’ with different forms of ‘contemporary urban violence’. They argue one can arrive at a

better understanding of the persistence of 'contemporary urban violence' by concentrating on its key characters: a network of state violence and non-state warriors operating both global and local scale, social basis of new identity politics; the quest for political control of territory via forced eviction, targeting of civilians, installation of surveillance and fear by use of contemporary communication technology; new megacities' fragile economics often marked by high unemployment rates, and the co-occurring informal and criminalized economies that often operate from within global power assemblages and, among other things, provide opportunities for warfare financing. Approaching these 'new wars' as today's 'frontier space' they look at how new wars expose systemic edges from within the city.

Building on Sassen (2010), Kaldor and Sassen (2020) and Lasoen (2019; 2020), I have argued that we can interpret the planning and executing of the Paris and Brussels terrorist attacks as 'contemporary urban violence' (see also section, 2.2.1.1).

Military Urbanism:

Urban researcher Stephen Graham (2009; 2011) defines 'new military urbanism' as a comprehensive and continuous evolving set of "evolving ideas, doctrines, practices, norms, techniques and popular cultural arenas through which the everyday spaces, sites and infrastructures of cities—along with their civilian populations—are now rendered as the main targets and threats within a limitless 'battlespace'" (2009, par. 1). According to Graham, the planning and instalment of high-tech surveillance and tracking systems cannot be understood as only state responses to security threats. Problematizing an all-encompassing discourse of security in urban planning, Graham (2011) points out how the development of green zones in strategic areas can be interpreted as a military technique for protecting these strategic areas, a technique he considers as being adopted from war zones. According to Graham, the militarization of everyday life is perhaps most

evident in those circuits of popular culture that involve electronic and virtual entertainment and the production and consumption of news.

Urban Sound Space:

Following the sonic materialist ideas of Raviv Ganchrow (2009), Goodman (2009), Rodríguez et al. (2009) and Goh (2014; 2017), I argue that sonic-spatiality cannot be understood as something that belongs to the individual listener, nor as absolute sonic-spatiality in need of a definition. This way of thinking motivated a conception of urban sound space as heterogeneous and intermittent contextually constituted materializations of urban sound and vibrations, where each position highlights a slightly different perspective on sonic-spatial characteristics.

Sound Spheres:

For this approach, I propose to consider soundspheres as components of urban sound space. Following Rodríguez, et al. (2009), I understand sound spheres as a psychoacoustic link with urban life, connecting people actively to a specific urban transformation through a 'shaping and being shaped' by soundspheres. In line with them, I suggest approaching the construction of soundspheres as sonorous operations, and in doing so, to expose them both as concrete spatiality as well as collectivity. In a similar way as Goodman (2009) does, Rodríguez, et al. (2009) argue for a political interpretation of these operations and suggest concentrating on the emergence of what they define as 'a new political tonality' and the use of new 'sonorous technologies.'

This brings me to the analysis of Grime Music by De Jong and Schuilenburg (2006). Also building on Sloterdijk's conception of 'spheres', they position the listener at the centre of a 360° sphere composed of pulses, tonalities, melodies, and beats. They identify two important developments in music production they associate with the popularization of audio reproduction technology: firstly, it became easier to

assign spatial qualities to sound. Popular music also plays with the introduction of other spaces. And secondly, acknowledging the bodily response to sound as affect, they point out how these 'sampledic spatialities', assemble individual listeners in what they describe as 'sonic communities.'

De Jong and Schuilenburg point out how Grime Music uses the machinic sound samples from video games, gun shots, but also ringtones of mobile phones to trigger an atmosphere of fear. Comparing Grime Music with Pierre Schaeffer's' *Musique Concrète*, they don't think of Grime as a literal interpretation of its urban environment. According to them, in its representation of urban space, Grime demonstrates that these machinic sounds are part of the urban environment, interacting with its physical, social, cultural, and environmental constellations (see also section 2.2.3.3).

Acoustic territoriality, sonic and hyper-local demarcation:

Interested in 'performative' relations connecting sound with the city, Labelle (2010) considers this type of entanglement as inherent to urban spatiality. In A*coustic Territories,* Labelle outlines a topography of auditory life in the city by mapping different 'soundways' of contemporary urban environments. Using a relational perspective on urban space, Labelle explores how sound manifests itself from within different auditory systems, in particular locations, in everyday life and cultural projects. He suggests a conception of the city as 'a particular sonic geography', exposing sound's disintegrative and reconfigurative force highlighting its spatial and temporal particularities. Labelle aims to expose an auditory tension from which he elaborates further on noise as evidence and occasional catalyst of dynamic cultural change that is working through an urban topography. This brings him to think of acoustic space in relation to processes of 'acoustic territorialization' in which the disintegration and reconfiguration of space involves a political process. In a similar way to the approach of Rodríguez, et al. (2009), Labelle elaborates, a

dynamic conception of acoustic territories conceiving them as the outcome of differing forces, characterized by multiplicity. From an understanding of acoustic territories as both specifically and multiple, linked to urban space and experiences and open to participation and the idea of sound as shared property open to multiple claims, Labelle argues for both an associative, relational, and ethical sonic approach (see also section, 2.2.3.3).

Discussing the use of sonic psychological warfare during the Vietnam War, Goodman, et al. (2019) how in the late 1960's US military experimented with sound to induce fear and anxiety within enemy territories. They describe how these experiments combined strange and eerie auditory textures with obscure sound effects and samples of human voices and animal roars in montages before being dropped by helicopters flying over hostile territory (see also section, 2.2.3.3).

Concentrating on Brussels urban development of the early 21st century, I became interested in the work of researchers problematizing the coexistence of processes of spatial-segregation, demarcation, and audio erasure. Interested in a better understanding of the distribution of power and resources and the local operation of what she defines as racialized narratives of economics, Joy White (2019) proposes 'hyper-local demarcation' as definitive framework for the study of the entanglement of communities, legislation, urban planning and the 'sonic landscape' at street-level affecting the lives of Black inner-city youth. Reflecting upon the East London Grime Scene as a site of emancipatory disruption, White problematizes how urban planners reinforce a spatial segregation along economic and urban lines. She uses ethnography to expose how urban transformations, policy planning led to other sounds, a different sonic backdrop to urban space (see also section, 2.2.3.3).

Given the Brussels context of old industrial railway space conversion to greenspace and transitory sites operating both as scene of conflict and performance, building on the research of Labelle, White, and Goodman and colleagues at AUDINT, I argue

for more consideration of processes of acoustical territoriality, sonic and hyper local demarcation in the planning and design of transitory (green) railway spaces.

Vibrational anarchitecture:

Building on Whitehead, Goodman proposes to recast human sonic experience opening to the vibrational nexus or each actual occasion of experience that populates an extensive discontinuum incorporating different elements into its collective shiver. This brings him to a conception of a non-anthropocentric topology of vibrational surfaces of potentials thereby surpassing semiotic registers. He grounds this non-anthropocentric conception of experience in a bas-materialism he associates with "sonic liquefaction" which according to him promotes experimental anarchitecture. Here he refers not only to experimentation through physical intervening but also to experiments in the modulation of affective tonality. This thinking is inspired by Mark Bain's artistic practice of 'vibrational anarchitecture'. Goodman interprets this practice as an effort in modelling a topological mediatic space cutting through analog and digital sound waves and granular material. From here, he points at the possibility of mapping the 'active mobilization of a population' of a rhythmic anarchitecture by concentrating on both its composition or "rhythmic consistency" and its ability to influence and be influenced by other entities (see also section 2.2.2.2).

Acoustic justice and micro politics of frequency:

In *Acoustic Justice* (2021) Labelle discusses how acoustic norms give form to experiences and capacities of listening and sociality within specific environments. Criticizing dominant acoustic norms, Labelle argues for a 'poetic ecology of resonance'. Exploring acoustics as a performative arena, he argues for a re-orientation of acoustic practices, an expansion that may even exceed the social. Scanning different acoustic practices, he looks for tools that can facilitate (re-)negotiation or deal with questions of (un-) belonging. Researching one's capacity

to control the dominant tonalities of specific situations, Labelle aims to get a better idea of one's 'freedom to listen'. Therefore, he also explores 'listening' as a privileged means for expressing empathy, compassion, and 'social attunement'. Labelle puts forward 'acoustic justice' as a necessary framework for engagement in struggles over 'the right to speak and to be heard', which, following a materialistic and planetary orientation, is to be understood as non-anthropocentric (see also section, 2.2.3.3).

Goodman (2009) also criticizes the dominance of a decibel-oriented sound policy or "micropolitics of amplitude"(p. 193). Considering these politics as too narrow and recasting the experience of the sonorous into a non-anthropocentric topology of vibrational surfaces, Goodman argues for a "micropolitics of frequency" (p. 193). He uses the terms 'micropolitics of frequency' together with the conception of an 'ecology of vibrational affects' for the research on the deployment of power within sonic ecologies. Through transdisciplinary unsound research he aims to address the production, transmission, and mutation of affective tonality. These conceptions move the listening subject away from being separated from sonic events into being enveloped within an affective tonality that can be experienced as mood, atmosphere (see also section, 2.2.2.2).

Unplace:

From an interest in sonic vibrational capabilities to (re-) negotiate urban transformation, inspired by the work of researchers I reviewed above, I argue for an opening up of sonic approaches to planning and design research to the study of urban sound space as 'unplace' that reveals itself through the eerie experience of space triggered by sound and vibrations navigating through real urban spaces. I take this notion of 'unplace' from Mark Fisher (2014) who points to the use of 'unplaced' nostalgia in his analysis of 'hauntology' in contemporary popular music and culture.

I argue that a conception of ‘urban sonic space as unplace’ allows for a reflection on the possibility of eerie sonic experiences in a real urban space which I consider as different from alienated sonic experiences. Where alienated sonic experiences are thought of as related to known, global virtual non spaces, eerie sonic experiences are conceived as a portal to a non-anthropocentric unknown that is not disembodied and immaterial but rather physically situated in the real urban space. I situate a possibility for re-negotiating the transformation of these railway spaces in the exploration of this abstract-real site through planning and design research approaches structured around the notion of ‘unsound’ and practices of ‘unhearing’ (see also section, 2.3).

APPENDIX 02 – INTERVIEWS

Interview 01

Social mediator (1020 Laeken)

25.11.2020

ASBL BRAVVO VZW

VILLE DE BRUXELLES • STAD BRUSSEL

1. Interview

1. Informations générales :

- Où êtes-vous actif en tant que professionnel ? Dans quelle partie de l'espace ferroviaire ?

Actif sur le territoire de Laeken, secteur statistiques Vieux-Laeken ouest et Vieux-Laeken est (cf. monitoring des quartier).

- Comment décririez-vous votre emploi ou votre activité ?

Métier pour favoriser le vivre-ensemble et la création ou recréation de lien social entre les différentes composantes du quartier, par le développement de projet (kiosque mobile, radio). Dans une optique de prévention.

- Avez-vous étudié pour cet emploi ou cette activité ?

Master en anthropologie

- Depuis combien de temps êtes-vous actif ici ?

Six ans.

- Qu'entendez-vous par "espace public urbain en transition" ?

Un enjeu, celui d'une transition qui se fait avec les Bruxellois.e.s (bottom up) plutôt que top-down. Celui d'une transition douce, au contraire du flou et d'une certaine frénésie urbanistique entourant notamment les PAD de la RBC.

- Vous habitez à proximité de la ligne ferroviaire L28 de Bruxelles ?

Dans la zone canal.

2. Espace ouvert (vert) et appropriation :

La zone ferroviaire de la ligne L28 présente une grande variété de types et de types d'espaces ouverts (verts). Une proportion importante de ces zones sont des terrains non pavés qui font partie de la base du développement d'un réseau vert pour cette partie de Bruxelles. Entre Bruxelles-Nord et Bruxelles-Sud, on distingue les parcs urbains tels que le parc L28 et Tour & Taxis, les places, les lieux, les jardins collectifs, les friches, les parcours verts, etc.

- **En tant qu'expert pratique, vous êtes actif dans un ou plusieurs espaces ouverts (verts) de la zone ferroviaire de la ligne L28.**
- **Comment décririez-vous cet (ces) espace(s)?**

Ce sont des espaces qui ont un caractère urbain très fort, de part leur morphologie, leur caractère itinérant à travers la ville, leur potentiel de transition. La nature y a repris ses droits à certains endroits.

- **Pouvez-vous nous en donner un exemple ? Cela a sa place dans vos reportages radio.**

Ici à 1:05. Balade dans le jardin collectif Tour et Taxi avec une voisine. radiopanik.org/emissions/radio-marie-christine/rmc-live-03/

- **Etes-vous confronté à une privatisation accélérée, et comment voyez-vous cela sur le terrain, l'impact du travail**

En effet, cela participe à une plus grande densité de population dans le quartier. Au détriment de services dont les gens ont besoin (écoles, crèches), voire d'espaces de respiration.

Exemple ici : https://www.antonissen.com/fr/projet/laurelle/ Intéressent de voir l'image et les références de Laeken portées par ce projet situé rue Schildnek ou Drootbeek

- **Pourriez-vous nous dire quelque chose sur la façon dont cet espace est utilisé aujourd'hui ? L'espace est-il utilisé pour les loisirs, la marche, la criminalité, l'agriculture urbaine, etc. Qui utilise l'espace ? L'espace est-il principalement utilisé par les résidents locaux, une communauté, un large public, des individus ? Y a-t-il des exclusions et/ou des conflits concernant l'accès à l'espace ? Les animaux s'approprient-ils l'espace ? Pouvez-vous nous informer sur cette forme d'appropriation ?**

Historiquement, il y a toujours eu du sans-abrisme le long des chemins de fer. Un public qui s'approprie les espaces en friches, ce que la ville laisse de côté. Tout un temps, il y a eu un camp rom comptant jusqu'à près de vingt unités

de logement ! Il est regrettable que ces publics ne soient pas pris en compte dans la revitalisation de ces espaces.
Parallèlement, on observe également des traces de consommation de drogue dans ces espaces.
Ces espaces ont également donné lieu à des initiatives vertes pionnières comme Parckfarm, le jardin collectif Tour et Taxi, le jardin L28 ou publiques comme les pocket parks ; avec plus ou moins de pérennité. Un réel enjeu institutionnel est d'accompagner ces démarches sur le long terme et non pas par à coup de subsides ponctuels. Ces jardins donnent parfois lieu à des conflits d'affectation du sol : collectif ou privatif.
Les animaux : chiens ; poules du parckfarm ; oiseaux ; canards (cf. capsule audio RMC live 3 « ballade au jardin ».

- **Les qualités physiques et biologiques de l'espace contribuent-elles au développement d'une identité collective pour l'espace et l'environnement plus large de la zone ferroviaire ? Si oui, à votre avis, est-ce lié à la présence d'une identité culturelle ? Le son, entendu comme la qualité physique de l'environnement, contribue-t-il au développement d'une identité collective ?**

Non : il y a plusieurs identités. Celle des décideurs qui mettent en place une politique pour ces espaces ; celle des riverains, dont certain s'estiment peu informé ou eu écouté par rapport à ces transformation. Le quartier de Laeken a une identité plurielle.
Non : le son de ces espaces est vécu souvent comme une nuisance liée au bruit du train ou du métro.

- **When site lost 'plot'? Que pensez-vous des projets, de la planification et de l'architecture qui veulent introduire une nouvelle narration, inspirée par l'ambition de 'faire de l'espace' (place-making)?**

Très bonne idée de co-construire l'espace, mais aussi un défi énorme car l'espace est souvent disputé entre différentes tendances : avec ou sans voiture ; avec ou sans bancs pour se poser ; avec ou sans lumière pour préserver la nuit des oiseaux ; etc.

3. Espace ouvert (vert) et réaménagement :

- **Avez-vous connaissance de projets locaux ou régionaux en cours ou prévus concernant l'utilisation et l'appropriation de l'espace ouvert (vert) dans lequel vous, votre organisation ou votre employeur est actif ?**

Suivi du Contrat de Quartier Durable Bockstael : paradoxe – dans sa phase de gestation, il y a beaucoup de travailleurs proactifs avec qui l'on est en contact ; dans sa phase de réalisation, l'ensemble des travailleurs a remis son mandat et les chantiers démarrent et se concrétisent.

- **Connaissez-vous des projets qui portent spécifiquement sur l'inclusion et/ou l'exclusion ?**

Beaucoup de nouveaux services le long du boulevard Bockstael, parallèle au L28A : maison de l'adolescent ; salle d'étude du CPAS ; maison de la coordination sociale ; salle de sport ; mission locale. Dynamique urbaine nouvelle et intéressante.

- **Connaissez-vous des mesures qui contrôlent l'accès aux espaces ouverts (verts) ?**

Les grilles. Mais peu efficaces. Pourtant nécessaire au vu des usages (verts ou consuméristes), qui entrent en compétition en raison du manque de contrôle des espaces.

- **Connaissez-vous des projets qui se concentrent spécifiquement sur le développement d'une identité collective autour de cet espace ?**

Habiquart L28 s'envisage comme l'association des habitants de la ligne L28.

- **Quelles sont vos expériences (pratiques) et vos attentes concernant l'aménagement d'espaces (verts) publics à proximité de la ligne ferroviaire L28 ?**

Un réel suivi des pouvoirs publics dans le processus d'ouverture et d'appropriation de l'espace. Ce qui réclame des ressources humaines, des gardiens de parcs et différents scénarios pour rendre l'espace viable et vivable à tous. Par expérience, on peut observer ailleurs différentes logiques de privatisation des espaces ouverts par des groupes (consommation, deal) qui entravent le bon vivre-ensemble.

- **Quelles sont vos expériences (pratiques) et vos attentes concernant le son urbain et le développement d'espaces (verts) publics à proximité de la ligne ferroviaire L28 ?**

L'espace et le son sont étroitement liés. On peut attendre d'espace non urbanisés ou non motorisés des qualités sonores qui donnent à entendre la ville de façon plus intime et reposée.

2. Transcript 25.11.2020 (mp3)

Interview and report by Drs. Caroline Claus

Caroline [00:00:54] la perspective du projet est évolutive, je me concentre sur la position du son et de l'écoute par rapport au développement urbain et au conflit dans l'espace public.

Bravvo [00:01:14] D'accord. Intéressant.

Caroline [00:01:29] L' objectif du projet de recherche, c'est de questionner la position du son dans des projets de réaménagement des espaces publics. Et plus spécifique, comment peut-on comprendre et utiliser le son comme médium pour (re-) négocier l'espace public en transformation. Il y a plusieurs idées et théories : les théories basées sur la conception du 'paysage sonore', la phénoménologie de l'expérience sonore. Ma recherche remet en question la priorité accordée au silence et des zones de confort dans le context des projet/processus de réaménagement des espaces ferroviaires (public/vert). Alors j'ai défini des questions sur l'appropriation de l'espace public et comment vous, comme responsable de Bravvo, êtes impliqué. Je veux savoir comment vous travaillez sur l'inclusivité des espaces chemins de fer en transformation ? Et de quelle manière vous faites attention, dans votre pratique, au son et à l'environnement sonore des espaces publics dans lesquels vous êtes actifs. Pensez-vous que la qualité sonore peut contribuer à l'inclusivité.

Bravvo [00:02:54] On peut voir un petit peu des questions sur la conflictualité. Après, voilà, ce que j'ai observé, c'est plutôt, le son en fait, son usage est très fort, comme une nuisance dans l'espace public. C'est ça aussi. La difficulté, c'est que quand tu parles de conflictualité, en ville le son est souvent vécu comme des nuisances liées au trafic routier et aux travaux liés aux gens qui parlent trop fort dans les espaces publics. C'est un peu ça qui est difficile pour moi de, après, il y a cette part de nuisance et puis cette part de réappropriation des espaces via un enregistrement, il y a on va dire 'médiatisation radiophonique' de ça ou si tu vois, mais il faudra voir si tu pourrais me peut-être préciser ce que tu entends par le son, alors du coup de ces espaces.

Caroline [00:05:24] Pour situer la recherche: le projet est basée sur mon expérience sur le terrain dans plusieurs quartiers populaires dans le Nord du Bruxelles. En parallèle de ce travail j'ai fait des études d'urbanisme avec une projet de thèse sur la conception d'un paysage sonore pour Forest- SR Antoine-Wielemans. En interrogeant les expériences d'écoute des gens, j'ai fait l'expérience des limites de perspective dominantes dans la recherche sonore : je n'arrivais pas à inclure la diversité des appréciations, ni des conflits que je rencontrai sur le terrain, les espaces publics des quartiers populaires. Alors il y a la théorie autour de la conception d'une 'Paysage Sonore', l'idée de percevoir le son, mais cette perspective est peu ouverte à des réalités caractérisées par des expériences de conflit. Il n'y a pas vraiment assez de d'espace pour négocier et discuter le conflit dans cette perspective. Alors là, il y a aussi la phénoménologie de CRESSON, un groupe de recherche situé à Grenoble. Et cette perspective départ de 'l'expérience sonore' qui est un peu différent de la perception. Ce n'est pas la même chose. Alors ça veut dire aussi quand on parle

du son et écouter, ça peut référer à différentes interprétations de la relation entre son et auditeur. Pour donner un exemple, quand tu as un son qui provoque des émotions positifs ou négatifs, alors, et là, cette conception est déjà intéressante comme outil de recherche, mais de nouveau, pour intégrer le conflit dans une réflexion sur la planification et réaménagement des espaces publics, là, je ne trouvais pas vraiment des outils conceptuels. Alors moi, j'aime aussi quand je parlais avec des jeunes, il y a des jeunes qui apprécient beaucoup et parlaient de leur expérience, de leurs appréciations des sons machinic parce que, par exemple, ils sont formés pour écouter les voitures.

Bravvo [00:07:50] Tout à fait!

Caroline [00:07:50] Alors quand tu as cette connaissance de cette appréciation des sons machiniques, est tu es confronté avec une autorité qui est en train de développer un Plan Bruit basée sur une approche quantitatif avec des outils comme les cartes dB, basée sur des modèles utilisant des paramètres quantitatifs. Aussi au niveau des projets, on propose d'installer des zones de silence. Dans la pratique j'ai constaté qu'il y a un manque de réalité. Quand une partie de la population a une autre relation avec l'espace public, mais aussi l'environnement sonore, alors c'est plus complexe.

Bravvo [00:08:28] Qui, en fait, il y a une question de démocratie derrière ça, et de représentativité. Je ne pense pas qu'il y ait une différence fondamentale entre la question du 'son' dans l'espace public ou la question de 'l'espace'. Si on prend par exemple comme exemple la place Bockstael, le public voudrait peut-être qu'elles deviennent plus piétonnes. Parmi les riverains, il y a des gens qui sont contents parce qu'ils se projettent comme 'piétons dans l'espace' dans l'espace. Il y a d'autres riverains qui ne sont pas contents parce qu'ils se projettent comme 'automobilistes dans l'espace' et donc cet espace va être conflictuel en fonction de la perspective de l'habitant. Y a d'autres habitants qui vont encore dire c'est très bien, l'espace que vous libérez, mais il va être occupé par des toxicomanes et des consommateurs. Cet espace, il sera bruyant, il sera sale, donc il y a encore une troisième voie. Une autre, une autre observation dans le même ordre d'idée, c'est la lumière. Par exemple, rue Marie-Christine, la lumière, donc Sibelga a décidé de la descendre à trois mètres du sol. Avant, elle était au-dessus des premières étages. Donc, Sibelga descend à la lumière, les riverains et les habitants sont contents parce qu'ils vivent au premier étage et ils n'ont plus l'éclairage public chez eux. Il n'y a plus cette lumière de la ville qui rentre chez eux, mais les commerçants, ils vont dire non, maintenant, la rue est sombre. Ça ne donne pas envie de consommer ici, de participer à la vie commerçante. La leçon, la lumière ou l'espace? À chaque fois qu'on veut déplacer des 'paramètres de la ville', on se rend compte qu'en fait, c'est très limite, de manière immanente, conflictuelle. S'il n'y a quasiment aucun terrain neutre en fait ?

Caroline [00:11:06] Dans le context d'un processus de planification, aux moments de négociation et décision, quand tu es comme urbaniste, architecte

ou paysagiste, autour de la table avec tous les acteurs, il y a beaucoup de choses, beaucoup d'objectifs et leurs paramètres qui doivent être discutées et décidées. Quand tu es là, aussi avec les administrations, Infrabel, MIVB, etc: il y a un complexité de perspectives et communications, langage autour de la table. Pour revenir vers la question de la position de son, il y a une chose que je m'intéresse beaucoup aussi, c'est que quand tu introduis ces perspectives sur le terrain, dans la rencontre, peut-être vous avez eu la même expérience dans le projet radio, il y a quand même une manière de discuter sur l'espace qui est un peu différente. Je pense que cette question ouvre une 'espace de discussion' alternative. Se concentrer sur le son ou la vibration dans des discussions sur le terrain, supporté par l'usage des outils enregistreur, et de ne pas parler sur des questions d'emplois, les relations avec la police, me permet de parler des relations jeunes - espaces public donc aussi des relations avec d'autre habitants d'une autre perspective partagée entre nous, qui n'exclut pas nécessairement les autres questions. C'est pour ça que je parle de conflit, mais c'est quand même une dimension urbaine qui n'est pas encore bien réfléchi à ce moment. Peut-être il y a un risque quand l'autorité utilise des outils qui ne sont pas représentatifs et même potentiellement exclusive. Je sais bien que aussi, avec la lumière et l'odeur aussi, j'imagine qu'il existe des mêmes risques. D'une perspective sonore multiple sur l'urbanisme je questionne la légitimité des outils planifications introduit dans le Plan Bruit. Il y a des ouvertures vers d'autre approches, mais comme vous voyez aussi l'outil ou suggestion d' introduire des zones de confort qui est présenté comme approche qualitatif on peut questionner. Je suis d'accord avec vous: la question de son urbain touche à la complexité d'un espace public et la complexité de transformer ces espaces. Il y a beaucoup de choses qui doivent être décidées et j'aimerais bien finir avec un doctorat qui offre des outils ou qui présente des outils ou perspectives. Qui peuvent supporter la co-construction des espaces publics.

Bravvo [00:14:35] C'est vrai que c'est une nouvelle thématique aussi pour le pouvoir public. Je pense qu' il y a encore des marges de manœuvre. C'est comme la question de l'obscurité qu'on trouve aujourd'hui dans le débat public. Avant le noir était un ennemi. Il faudra l'éclairer pour sécuriser etc. Aujourd'hui, il y a aussi une réflexion qui s'ouvre par rapport, tiens on peut laisser la ville dormir dans le noir, etc. Je trouve ça intéressant comme terrain urbain.

Caroline [00:15:27] L'idée 'paysage sonore' date des années 1960. Il y a le futurisme des années 1920.

Bravvo [00:15:40] Oui, je sais le futurisme après, et le lien le fachisme. Tout à fait.

Caroline [00:15:45] Mais eux, ils avaient l'idée d'embrasser le 'bruit'.

Bravvo [00:15:50] C'est ça.

Caroline [00:15:50] Le bruit, c'est quelque chose qui ressemblait à la progression. Il y avait des réflexions longtemps. Mais peut pas assez répandu, même pas dans l'éducation. J'ai constaté que la majorité de nos étudiants (Masters in Architecture) apprennent peu comment ils peuvent concevoir avec le son comme qualité.

Bravvo [00:16:37] Sans oublier donc la modernité, le son, et l'odeur ont été fort négligé. Moi, ce qui m'interpelle, par exemple, c'est qu'on construit des métros, des trams, des trains etc. Je ne suis pas convaincu que la qualité sonore soit considérée dans le réaménagement des espaces ferroviaires/verts. Ils auraient pu faire des études, par exemple sur les terrains, pour voir qu'elles sons sont plus agréables que d'autres en fonction du contact entre la roue et le rail. Des choses comme ça. Je crois que ce ne sont pas des terrains qui ont été explorés alors que c'est tout à fait légitime, d'avoir conscience de ça, s'exprimeraient en terme toujours de nuisance, de diminuer on va dire les nuisances seraient pu être observé en termes d'esthétique ou de démocratie, qu'elles sons vous plaisent le plus souvent très inexplorées.

Caroline [00:18:06] En parlant avec des gens, les jeunes ou les adultes, je remarque la présence d'une conscience de l'environnement sonore. Souvent les résidents me répondent avec une description très détaillée sur leur expérience sonore. A ce jour l'existence de cette conscience et peu discuté dans les projets de réaménagement ou architecture.

Bravvo [00:19:05] Oui, ce n'est pas quelque chose qui est abordé, mais en effet, je crois de plus en plus, aussi quand je regarde à notre expérience radiophoniques que les gens sont amenés à enregistrer leur environnement, à faire un peu de 'field recording', donc pas seulement occuper l'espace sonore avec la parole de la rationalité, mais avec les bruits de leur intérieur, les bruits de la ville, donc ça bouge quand même, c'est assez positif.

Caroline [00:19:50] J'aimerais revenir sur votre expertise et expérience dans la médiation sociale en lien avec la complexité des espaces urbains. Je voudrais parler de votre travail de médiation dans une contexte des projets urbains à Laeken, en particulier dans les espaces ferroviaires, les jardins collectifs, ouverts, fermés et votre manière de répondre aux questions d'appropriation. Est-ce que vous pensez que dans l'appropriation et transformation des espaces, dans votre travail de médiation, le son peut jouer un rôle?

Bravvo [00:20:22] Certainement. Le son peut jouer un rôle. En fait, j'ai envie de dire que le son peut renouveler en fait le lien entre les habitants, entre des êtres humains qui sont dans un espace et cette espace, par exemple, le Jardin collectif Touvet Taxi que tu connais certainement. Moi, j'avais été avec une habitante du quartier, une jeune, une jeune Marocaine du quartier qui connaissait un petit peu l'endroit avec un très bon micro, un micro de qualité et aussi les casques. On a écouté les canards, les arbres, etc. Les oiseaux, est là, le son, je crois que je t'ai mis le lien dans le document la capsule sonore qui

pourrait écouter. Là le son a clairement permis à cette personne de percevoir cet espace avec un autre regard, l'écouter avec d'autres oreilles. Mais ça veut dire que le son doit être entendu, conscientisé, évoquent, voilà, le sont en tant que tel c'est de la matière brute. Mais, cette matière brute peut aider ou peut accompagner les gens dans une nouvelle lecture. On va dire du lien à la Ville à l'espace. Et c'est un vrai besoin de renouveler ce lien parce qu'il ce lien est difficile, c'est conflictuel, en raison de différentes visions que j'ai déjà évoquées et en raison du fait que l'espace, il est là, il est lourd. Si quelqu'un décide de jeter ses poubelles dans cette espace, si quelqu'un décide de casser quelque chose, il y a cette trace tout le temps. Alors que le son en quelque sorte est plus léger, il est plus fluide et tous les habitants sont engagés dans cette courageuse réappropriation de l'espace public, qui est difficile. Parce que le dialogue avec l'administration et les institutions est lent, complexe, parce que le dialogue, le son avec ses différentes manières, est très rapides et souvent conflictuel, mais le son peut supporter aussi un moment de respiration, de contemplation, de retrouver sa place dans la ville peut être. J'entends par là que le son peut être un outil pour découvrir la ville en portant conscience à un sens (l'oreille). Ce qui amène à la contemplation, la pause. Très bonne idée de co-construire l'espace, mais aussi un défi énorme car l'espace est souvent disputé entre différentes tendances : avec ou sans voiture ; avec ou sans bancs pour se poser ; avec ou sans lumière pour préserver la nuit des oiseaux ; etc.

Caroline [00:23:10] Hier j'étais avec un ami dans le jardin collectif de Tour & Taxis. Je suis au courant de la tension, un conflit, pas un grand conflit, entre les jeunes qui se rassemblent dans le petit théâtre.

Bravvo [00:23:25] Tout à fait.

Caroline [00:23:25] Il y avait plusieurs jeunes qui jouaient, écoutaient, de la musique avec leurs smartphones. Et je vois que là, ils s'approprient l'environment sonore du jardin. Je connais des jardiniers qui ne sont contre la présence des jeunes dans le jardin, ils essaient de trouver un moyen de vivre ensemble. Mais il y a aussi des jardiniers qui n'aiment pas que les jeunes font de la musique dans le jardin. Pensez-vous que la musique ou le son peuvent être un point de départ pour modifier la relation entre différents habitants dans cette espace collectif?

Bravvo [00:24:13] Le fait est que ce sont des espaces publics,...

Caroline [00:24:17] Le Jardin collectif n'est pas public, je pense?

Bravvo [00:24:20] Considérons-le comme espace public, alors quand les jeunes mettent du son, de la musique etc. En quelque sorte, il y a une privatisation de l'espace. Autrement dit, l'espace public peut être privatisé par certains groupes, notamment en diffusant un son privé (une voiture ou une radio), souvent au détriment d'autres « publics ».

Caroline [00:24:27] Ok

Bravvo [00:24:27] Et donc cette privatisation de l'espace peut être possible, mais moyennant avec la médiation d'une charte, avec la médiation d'un cadre où les gens se sont dit: "OK, vous pouvez occuper l'espace, vous pouvez le privatiser, mais soyez constant qu'à partir de 22 heures, si vous continuez à privatiser l'espace des riverains, eux vont être embêtés dans leur dans leur propre, privatisent, privôtés". Dans leur propre “sphère privée”, vie privée.

Caroline [00:24:59] Oui.

Bravvo [00:24:59] Donc, c'est possible d'écouter de la musique fort. Le problème, c'est l'absence de lien entre cette occupation là et le cadre public. Le caractère public de l'espace. Le problème, c'est la rupture entre cette occupation et la façon dont on veut que cet espace soit public, donc démocratique, discuté, débattu. Et donc, c'est là où, c'est très difficile en fait, par manque de ressources humaines de mon type médiation sociale ou du type éducateur de rue, pour permettre cette démocratie de l'espace, pour permettre le contact avec les jeunes, les éduquer, moi par exemple dans un autre Jardin, qui est le Jardin Station, près de l'Ancienne Gare de Laeken, un Pocket Parc, des jeunes là, faisaient des barbecues, etc.

Caroline [00:25:49] Oui, je vois.

Bravvo [00:25:49] Mais le problème, c'est que. Il y avait ces nuisances sonores et après, il laissait aussi tous les déchets, les poubelles, etc.

Caroline [00:25:58] Oui, j'ai observé ça.

Bravvo [00:25:58] Alors moi, j'étais au contact avec eux. Je les dirai : "écouter. Il y a un cadre, une charte ramassez vos déchets, il y a des poubelles pour ça". Alors ça a eu un impact une fois. Il y a une fois où j'ai vu qu'ils avaient respecté le cadre, mais pas la deuxième fois. Parce que, et là c'est très intéressant, ce n'est pas forcément un groupe de jeunes, c'est pas forcément cinq individus, c'est des 'réseaux de jeunes'.

Caroline [00:26:21] Je vois.

Bravvo [00:26:21] Ce sont des jeunes qui partagent la même réalité, on va dire, socio politique, socio culturelle, et tu vas parler peut être un jour avec cinq jeunes, mais une semaine après, il y aura deux jeunes qui seront là et trois autres jeunes pas encore connus. Et donc, c'est vraiment des flux très difficiles. On va dire, si c'était un groupe de jeunes qui identifient une équipe, un travail. Ce serait vraiment possible de médiation sur cette base-là parce que ce serait un groupe fermé de 5 individus. Mais c'est plus qu'un groupe : ce sont des réseaux avec des jeunes qui sortent, des jeunes qui rentrent, mais rendent le travail, si on veut faire cette démocratie de l'espace, il faut dix fois plus de

ressources humaines, le terrain en permanence. (Ce que je veux dire : c'est que dans l'espace public nous sommes face à des flux plutôt que face à des groupes. D'où la difficulté de travailler avec ces flux, ce n'est pas comme un groupe d'élèves dans une classe. C'est beaucoup plus complexe. L'idée de démocratie de l'espace, c'est que l'ensemble de ses usagers, en ce compris les oiseaux, puissent décider de son affectation.) Les pouvoirs publics devraient impérativement être 10 fois plus de moyens pour créer une vraie démocratie, pour que ces jeunes sont en lien avec la ville. Ce serait vraiment vertueux. Ce serait vertueux pour tout le monde.

Caroline [00:27:27] C'est super intéressant ce que vous dites. En poursuivant ce que vous venez de dire sur les réseaux des jeunes, je voudrais faire le lien avec les plans pour le réseau des espaces verts , incluant des espaces ferroviaires. Vous parlez d'un cadre de créer un cadre pour médier, si j'ai bien compris. En observant la présence des jeunes dans ce petit théâtre, faire de la musique, et via notre conversation, je constate la problématisation de leur présence en fonction de 'l'acoustique urbaine associée à leur présence dans l'espace public. Cela m'amène vers la question de 'l'Ambiance Sonore'. C'est quoi 'l'ambiance sonore'? Est-ce que c'est de la nuisance ? Peut-être pas. C'est une pratique, peut-être une qualité urbaine, sociale, quelque chose positif.

Bravvo [00:28:14] Tout à fait.

Caroline [00:28:14] Est-ce qu'on peut partir de cette observation d'une ambiance dans le jardin qui, peut-être, n'est pas juste appropriée par une groupe en particulier, mais qui' est une ambiance en lien avec l'espace qui en fait créé comme théâtre, une 'espace de performance'. Dans l'autre jardin il y a une cabane aussi, une intervention qui contribue à rendre ce lieu attrayant comme 'espace de rencontre'. Est-ce que c'est une idée de partir des observations, des ambiances sonores dans ces espaces plutôt positifs comme 'élément constitutif' de la cadre de médiation que vous venez de parler? Quand il y a une ambiance définie comme quelque chose positif, que je pense les jeunes le déjà construit, et ça attire des gens ou pas les groupes, mais peut être des jeunes qui sont liés via un réseau qui n'est peut-être pas si fort articulé, mais qui, et là, est-ce que est une idée d'articuler et valoriser ces ambiances comme quelque chose de positif plutôt qu'on le problématise comme une question de nuisance?

Bravvo [00:29:24] Je te rejoins, ça ne me dérange pas. La médiation, c'est quelque chose qui aspire à une certaine neutralité. Donc moi, je ne veux pas me poser. Je ne sais pas bien le feu. je ne vois pas la signification… Oui, là. A titre personnel, je trouve ça positif que les jeunes font du son, musique, etc. Mais je dois prendre en compte la vie d'autres personnes, ce sont par exemple des riverains pour qui le son ou le bruit va être dérangeant. Et c'est à partir de ce moment-là, qu'il y a besoin de 'négocier' les espaces sonores pour que tout le monde soit content, satisfait, que les jeunes puissent mettre le son, la musique, parole jusqu' à 10h, par exemple, que les riverains sachent que le

son, à un moment donné, va s'arrêter. Donc, c'est la négociation. C'est un débat politique. C'est vraiment un chargement dans l'espace public ou l'opposition dit non le son. Personnellement, ça me dérange. Qu'est-ce qu'on fait alors ? On négocie. Maintenant, l'idéal. Comme tu dis. Serait de permettre à ces jeunes d'aller plus loin avec le son, de le créer, d'enregistrer des choses de leur environnement, de traduire ça et c'est ce que moi j'essaie de faire avec la radio.

Caroline [00:30:32] Oui, je vois.

Bravvo [00:30:33] Il y avait des jeunes dans la plaine de jeux *Horizon* qui sont considérés par les riverains comme nuisibles. Ils font du bruit, ils dealent, ils créent des problèmes régulièrement. OK. Moi, ce que j'essaie de faire, c'est que ce groupe avec la proposition de faire un 'plateau radio' sur place. Alors, il y en a deux qui adhèrent au projet. Il y en a quelques-uns qui ne veulent pas parler parce que pour la 'parole', c'est que je la garde pour moi, parce que sinon, qu'est-ce que la police pourrait entendre ou ça peu? Il y a la 'loi du silence'. En tant que groupe de jeunes, c'est le 'silence' : "on ne parle pas", "je donne pas mon nom". Il y en a d'autres qui sont curieux. Donc il va un petit peu parler dans le micro d'un petit rappel et qui ne sont pas très coordonnés, structurés. Donc, c'est tout un énorme travail de dialogue pour que ces jeunes-là puissent créer une ouverture en fait. Que ce soit dans le chef des jeunes, dans le chef des riverains, de tout le monde. Où est ce qu'on va ensemble ? La question, c'est 'l'ensemble' comment on peut travailler ensemble, là où là où il y a, là où il y a une 'fracture' entre le riverain et le jeune. J'essaie de créer un espace sonore aussi, finalement, pour permettre d'aller ailleurs ensemble.

Caroline [00:32:05] En tant que 'urbaniste réfléchissante au cadre légal, Bruxelles-Environnement propose l'usage de l'outil de zone de confort lors de la planification des espaces verts. Via cette recherche orientée vers la pratique, je recherche des approches alternatives, comme ouvertures ou valorisation des autres ambiances, les différents 'atmosphères' qui sont déjà là et voir comment on peut les articuler et définir un peu plus parce qu'ils ne sont pas identifiés en tant que réalités urbaines dans des projets de planification, rénovation des espaces publics. Pour revenir à ce que vous venez de dire : vous faites la médiation, vous créez ces cadres, vous dites, vous négociez le silence, et le respect mutuel des autres habitants. Et vous essayez d'ouvrir la médiation ver une approche constructive : travailler avec le son, pas diminuer ou couper le son. Comment pensez-vous que des jeunes, en dans un dialogue avec des urbanistes, architectes peuvent co-creer des environnements sonores, peut être localiser, situer des évènements sonores dans un espace urbain spécifique, un autre moment ou dans une zone dans la ville. Est-ce que vous pensez Il existe déjà des outils, méthodes, projets qui peuvent supporter cette co-construction ?

Bravvo [00:33:21] Je pense que le projet radio, qui demande, demande aux jeunes de participer, proposer aux jeunes : » Vous faites du son. Vous pouvez

en diffuser à la radio. » nous pourrons en discuter ça. Il faut voir un petit peu avec les associations de jeunes, des assocations qui travaillent avec les publics, des jeunes dans l'espace public.

Caroline [00:33:33] Oui, je sais maintenant à JES ils ont un projet *woordvoerderschap*, concentré sur la parole.

Bravvo [00:33:33] La parole, ça c'est clair, c'est un outil intéressant. Parce que les jeunes, en tout cas, ont est parfois surpris par leur volonté de dialogue, ça les embête pas toujours. En fait, ça dépend aussi du moment, parce que c'est des dynamiques du groupe. C'est du 'peer to peer': Ils ont le même âge, le même sexe, un peu la même trajectoire de vie. Ce sont des groupes avec une identité forte. Et donc, il y a des moments où ces groupes ont une ouverture par rapport à autrui, par rapport à l'autre. Des moments pas. Ça dépend s'ils ont consommé, des choses ou pas du moment, de la journée, du moment. Mais il y a des moments où ces groupes sont ouverts à autrui, le dialogue souvent très enrichissant. Ce que je te propose, ça peut éventuellement, si tu en a besoin, reprogrammer un entretien ? Oui, peut-être. Janvier peut être si tu peux, tu peux consulter le document que j'ai rédigé. S'il y a des questions qui émergent, en tout cas, moi, c'est tout ce qui est conflictualité et espace sonore. Ça m'intéresse. Je suis partant, aussi pour suivre la discussion. Plus tard, on a déjà une bonne base.

Caroline [00:35:49] Oui, je vais regarder votre réponse, vos réponses. Je vais écrire ce qu'on a discuté un peu, organiser le texte et je vous envoie, renvoie, voit peut-être à partir de ça. Si on fixer une date en décembre ou janvier.

Bravvo [00:36:06] Très bien. Le document que je t'ai envoyé, c'est vraiment un brut. OK, c'était plutôt une base pour la discussion. Donc, si tu as des questions, n'hésite pas à le mettre dans le texte. Je précise que le propos quand j'écris de manière assez brute n'ont même pas de problème.

Caroline [00:36:23] Super, c'était vraiment comme ça.

Bravvo [00:36:25] Merci à vous et bonne continuation.

3. Informed Consent

Geïnformeerde toestemming : DEELNAME INTERVIEW PROFESSIONALS

[Dit IC-formulier is bedoeld als voorbeeld en dient aangepast te worden aan de specifieke studie.]

Titel van het onderzoek:
De Vibrationele Nexus van een Brussels Spoorweggebied in Transitie
Naam + contactgegevens promotor en onderzoeker(s):

Promotor:

Dr. Burak Pak
Professor, Altering Practises for Urban Inclusion Research Group, Faculty and Department of Architecture, KU Leuven, Brussels
Email: burak.pak@kuleuven.be

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Doel en methodologie van het onderzoek:

Het doctoraatsonderzoek ontwikkelt een niet-antropocentrisch plannings- en ontwerpperspectief op auditieve en vibrerende interacties van het transformerende L28-spoorgebied, als een stap in de richting van sonische stedenbouw als kritische ruimtelijke praktijk.

Vanuit een bevraging van het gebruik en het beheer van open (groene) ruimte, het menselijk luisteren en de vormgeving van geluidservaring in processen voor stedelijke transformatie bij professionals en kunstenaars ontwikkelen we een voorstel voor een kritische herziening van de positie en de rol van geluid en trillingen in interdisciplinaire processen van stadsontwikkeling.

Het onderzoek steunt op de combinatie van verschillende methoden: theoretische studie en onderzoek in actie door middel van een casestudie gericht op de specifieke stedelijke realiteit van de ontwikkeling van (openbare) spoorwegruimtes langs het Brussels Westelijk ringspoor L28, deelname aan de onderwijspraktijk, veldonderzoek, workshop en semigestructureerde interviews en de organisatie van een focusgroep.

Doel en inhoud van het interview:

Deze vraag naar geïnformeerde toestemming heeft betrekking op

Deelname aan een online semigestructureerd interview - een gesprek waarin de vragen en de volgorde van deze vragen in grote lijnen vaststaan. Er is echter de mogelijkheid om door te vragen op de antwoorden van de deelnemers en beperkt af te wijken van de vastgestelde structuur. Het interview gebeurt online via Skype for Business en zal via geluidsopname worden vastgelegd. Op basis van dit gesprek en de opname zal een schriftelijk verslag worden opgemaakt dat u na afloop ter goedkeuring bezorgd zal worden.

Door in gesprek te gaan met professionals willen we kennis verwerven over de actuele toe-eigening van open (groene) ruimte in het spoorweggebied van de Brusselse

spoorlijn L28 enerzijds, en hoe professionals betrokken zijn bij de ontwikkeling en het beheer van collectieve en openbare (groene) ruimte in het gebied.
Het interview bestaat uit een reeks vooraf vastgelegde topics of gespreksonderwerpen die we in de loop van het interview willen bespreken. De volgorde van de topics en de formulering van de vragen en antwoorden liggen niet vast.

De topiclijst voor dit interview ziet er als volgt uit:

1. Algemene informatie:

- Waar bent u actief als professional? In welk deel van het spoorweggebied?
- Hoe zou u uw job of activiteit omschrijven?
- Heeft u voor deze job of activiteit gestudeerd?
- Hoe lang bent u hier actief?
- Wat begrijpt u onder 'stedelijke openbare ruimte in verandering'?
- Woont u in de omgeving van de Brusselse spoorlijn L28?

2. Open (groene) ruimte en toe-eigening:

Het spoorweggebied van de lijn L28 vertoont een grote verscheidenheid aan soorten en types open (groene) ruimte. Een aanzienlijk deel van deze oppervlakten zijn onverhard terrein die mee aan de basis liggen van de ontwikkeling van een groen netwerk voor dit deel van het Brussel. Tussen Brussel Noord tot de Brussel Zuid, onderscheiden we stedelijke parken zoals Park L28 en Tour & Taxis, pleinen, plaatsen, collectieve tuinen, braakliggende terreinen, groene wandelroutes, enzovoort.

- Bent u als praktijkdeskundige actief in één of meerdere open (groene) ruimten van het spoorweggebied van de lijn L28.
  Hoe zou u die ruimte(n) omschrijven?
- Zou u iets kunnen vertellen over de manier waarop deze ruimte vandaag wordt gebruikt? Wordt de ruimte gebruikt voor recreatie, wandelen, criminaliteit, stadslandbouw, enzovoort? Wie gebruikt de ruimte? Wordt de ruimte hoofdzakelijk gebruikt door omwonenden, een gemeenschap, een breed publiek, individuen? Is er sprake van exclusie en/ of conflict over de toegang tot de ruimte? Wordt de ruimte toegeëigend door dieren? Kan u informeren over deze vorm van toe-eigening?
- Dragen de fysische en biologische kwaliteiten van de ruimte bij tot de ontwikkeling van een collectieve identiteit voor de ruimte en de ruimere omgeving van het spoorweggebied? Zoja, hangt dit volgens u samen met de aanwezigheid van een culturele identiteit? Draagt geluid, begrepen als fysische kwaliteit van de omgeving, bij tot de ontwikkeling van een collectieve identiteit?

3. Open (groene) ruimte en herontwikkeling:

- Heeft u weet van lopende en geplande lokale of regionale projecten rond het gebruik en toe-eigening van de open (groene) ruimte waarin uzelf, uw organisatie of werkgever actief is?
- Heeft u weet van projecten die specifiek inzetten op inclusie en/of exclusie?
- Heeft u weet van maatregelen die de toegang tot een open (groene) ruimte controleren?
- Heeft u weet van projecten die specifiek inzetten op de ontwikkeling van een collectieve identiteit rond die ruimte?

- Welke (praktische) ervaringen en verwachtingen heeft u bij de ontwikkeling van openbare (groene) ruimte in de omgeving van de spoorlijn L28?
- Welke (praktische) ervaringen en verwachtingen heeft u rond stedelijk geluid en de ontwikkeling van openbare (groene) ruimte in de omgeving van de spoorlijn L28?

Verloop van het interview:

Wanneer u beslist hebt om deel te nemen aan dit interview en het formulier voor geïnformeerde toestemming ondertekend heeft, bezorgt de interviewer u een week op voorhand via e-mail een uitnodiging met het tijdstip en de link voor de opstart van de online vergadering, de topiclijst en meer informatie over het onderzoek.

Het interview gebeurt online via de Software Skype Online. We bezorgen u op voorhand de technische informatie die een vlotte opstart van het gesprek mogelijk moet maken.
Een topiclijst zal ervoor zorgen dat u reeds op voorhand kan nadenken over de onderwerpen en vragen die zullen gesteld worden.

Tijdens het interview peilen we naar uw meningen aan de hand van bovenvermelde vastgelegde topics. De volgorde van de onderwerpen, de formulering van de vragen en de formulering van de antwoorden liggen niet vast. De vragen zijn open van aard en het stellen van bijkomende vragen die voortbouwen op het onderwerp of een gegeven antwoord blijft mogelijk. We ronden af met een open discussie en slotwoord.

De onderzoeker die het gesprek zal modereren is Drs. Caroline Claus KU Leuven onderzoeker aan het Departement Architectuur.

Tijdens het interview zullen we een geluidsopname maken. Die opname zullen we gebruiken als basis voor het schriftelijk verslag van het interview dat we u na afloop, ter goedkeuring zullen bezorgen.

Het interview zal hoogstwaarschijnlijk 45 minuten tot 1 uur duren. Indien u wenst dat het interview vroeger stopt, kan dit zonder probleem.

- Ik begrijp wat van mij verwacht wordt tijdens dit onderzoek.

- Ikzelf of anderen kunnen baat bij dit onderzoek hebben op volgende wijze:

  Introductie en reflectie over verschillende vormen van luisteren en vormgeving van stedelijk geluidservaring

- Ik begrijp dat mijn deelname aan deze studie vrijwillig is. Ik heb het recht om mijn deelname op elk moment stop te zetten. Daarvoor hoef ik geen reden te geven en ik weet dat daaruit geen nadeel voor mij kan ontstaan. Persoonlijke gegevens die ingezameld worden zullen gecodeerd worden voor verwerking in het onderzoek. Omdat uw naam hierdoor niet gekoppeld wordt aan uw antwoorden op de interviewvragen, zijn deze gegevens achteraf niet te traceren en dus inherent geanonimiseerd. We zullen uw naam niet vermeld worden in welke vorm van rapportage dan ook.

- Ik begrijp dat ik geen financiële vergoeding voor deelname aan dit onderzoek zal ontvangen.

- Voor de verdere verwerking van de verzamelde gegevens geldt het algemeen belang als rechtsgrond volgens de AVG/GDPR. Stopzetting van deelname aan de studie houdt dus in dat de eerder verzamelde gegevens nog verder rechtsgeldig kunnen worden betrokken in de studie en niet moeten worden verwijderd door KU Leuven.

- De resultaten van dit onderzoek kunnen gebruikt worden voor wetenschappelijke doeleinden en mogen gepubliceerd worden. Mijn naam wordt daarbij niet gepubliceerd, anonimiteit en de vertrouwelijkheid van de gegevens is in elk stadium van het onderzoek gewaarborgd.

- Ik wil graag op de hoogte gehouden worden van de resultaten van dit onderzoek. De onderzoeker mag mij hiervoor contacteren op het volgende e-mailadres:

- Voor vragen evenals voor de uitoefening van mijn rechten (inzage gegevens, correctie ervan,…) weet ik dat ik na mijn deelname terecht kan bij:

  Onderzoeker:
  Caroline Claus
  PhD Student,
  Email: caroline.claus@kuleuven.be
  Tel: +32 9 398 63 53

  Promotor:
  Prof Dr. Burak Pak
  Email: burak.pak@kuleuven.be
  Tel: +32 9 398 63 53 `

- Meer informatie met betrekking tot privacy in onderzoek kan ik terugvinden op www.kuleuven.be/privacy. Verdere vragen over privacyaspecten kan ik richten tot de data protection officer: dpo@kuleuven.be

- De manier waarop dit onderzoek verloopt, is goedgekeurd door de Sociaal-Maatschappelijke Ethische Commissie van KU Leuven.

- Voor eventuele klachten of andere bezorgdheden omtrent ethische aspecten van deze studie kan ik contact opnemen met de Sociaal-Maatschappelijke Ethische Commissie van KU Leuven: smec@kuleuven.be

Ik heb bovenstaande informatie gelezen en begrepen en heb antwoord gekregen op al mijn vragen betreffende deze studie. Ik stem toe om deel te nemen.

Datum: 28/09/2002
Naam en handtekening proefpersoon Naam en handtekening onderzoeker

(Signed Document In KU LEUVEN BOX PROF PAK

Interview 02

Sound Designer – Inhabitant Sint-Jans-Molenbeek (S)

Skype for Business - No Recording

13.11.2020

Interview and report by Drs. Caroline Claus (C)

1. Interview

1. Intro:

C: Intro interview – doel, verloop en inhoud

S: Ik laat me soms inspireren door stadsgeluiden. Zoals bv door de sirenes van brandweerwagens. Dit soort inspiraties zijn niet specifiek aan een plek gebonden. Inspiratie kan ik eender waar opdoen. Wanneer ik op een plaats zit kan ik een bepaalde luisterervaring hebben die me dan inspireert. Zoals die keer dat ik een saxofoonspeler hoorde spelen aan Mont des Arts. Ook bij het doorkruisen van Graaf van Vlaanderen kan ik materiaal verzamelen. Mijn muziek is een mengeling van elektronische muziek, R&B, Trap, muziek die ik via mijn opvoeding meekreeg, luisterervaringen in de stad, Brussels.

1. Algemeen:

C: Hoe bent u betrokken in de creatie van Hip-Hop of (t)rap muziek video's?

S: Ik kijk rond mij – online, bv de website van thaibeats – ik denk niet dat ik een bepaald genre volg. In mijn muziek zitten elementen van R&b:afrikaans/VS elektronische muziek zoals elektro dubstep uit 2013, DnB,..

C: Hoe lang bent u actief als sound designer, muzikant, performer?

S: De eerste ervaring heb ik via mijn moeder. Ik moet 2 – 3 jaar oud geweest zijn. Ik reageerde positief op News Tune / Muziek. Later toen ik 7 – 8 jaar oud was vond ik techno leuk. Met vrienden luisterden we naar jumpsite. Ik had toen ook een mp3-speler. Ik luistere ook naar muziek via CD's en internet.

C: Wie of wat inspireert je bij het maken of performen van muziek?

S: .. ik denk nu opnieuw aan die keer dat het alarm van de brandweer me inspireerde – Wie? Niemand in het bijzonder eigenlijk... stijlen mss wel. Ik wil 'coller' vermijden / ideeën gratuit overnemen. Bij het maken van een beat, kan ik wel insparatie halen uit reggaeton muziek. Ik ga dan elementen combineren – herinterpreteren – hervormen.

C: Genoot je een muzikale opleiding?

S: *Ik wilde wel graag naar ESA St Luc gaan. Maar dat bleek duur te zijn.*
Ik volg nu workshops bij STUDIO JES en muzikansa?

C: Wat is voor jou een 'openbare' ruimte?

S: *bv Graaf van Vlaanderen – er moet geluid zijn – en ook een park niet alleen straat – het is plaats die toegankelijk is voor iedereen.*

C: Wanneer is geluid in de openbare ruimte overlast?

S: *Er is geen lawaai dat er teveel is. Er is gewoon constant lawaai. Bv. Experiment Graaf V Vlaanderen: ogen dicht – gewoon luisteren. Er is sowieso altijd geluid. Lawaai komt altijd met reden – geluid als signaal.*

C: Woon je in de omgeving van de Brusselse spoorlijn L28?

S: *In de buurt van – 10 min van Weststation. Ik kom er wel, voor mijn mama, .. Ik ga liever naar het centrum.*

2. Productie:

C: Wat doe je in de muziek, wat zijn jouw skills en tools?

S: Ik maak muziek via de computer – Ik denk nu ook na over het gebruik van akoestische gitaar? In de studio van JES stond een akoestische gitaar – drumstel.

C: Werkt je alleen of samen met anderen?

S: 1/week zit in de studio – afwisselend met vrienden of alleen // in de studio proberen we nieuwe dingen uit

C: Leunt jouw creatie aan bij een bepaald muziekgenre? Wat zijn de belangrijkste structurerende kenmerken van uw muziek? Bestaat uw muziek uit gesynthetiseerde beats en andere geluiden zoals samples van veldopnames, vocals, autotune en/of percussie?

S: *Om een beat te nemen werk ik nu vooral met geluid op basis van een vocal: vocals waarmee percussie gemaakt wordt – meer reggaeton achtig.*

Ik gebruik geen autotune maar wel reverb + echo effecten.
Ik heb nog gn veldopnames verwerkt. Dat kan gebeuren in de toekomst. Zou dus kunnen gebeuren. Ik denk aan mijn opnames van de sirenes van de brandweer. Ik maak dan een beat op basis van imitatie.

Compositie muziek: Ik werk met een refrein. Geleidelijk opbouwend naar een melodie. Alsof er iets aan komt. Ik zoek naar constant verandering?
Het is een free style waarbij ik zelfde muziek gebruik die tot 2 à 3m kan aanhouden. Het bestaat uit een refrein / couplet / constant zelfde muziek, met iets klein. Zo kom ik tot een refrein.

3. Stedelijke Omgeving:

In haar studie naar de relaties tussen Grime muziek, politiek en de stedelijke omgeving van Londense wijken, wijst White (2020) erop hoe verschillende ruimtelijke kenmerken van binnenstedelijke gebieden weerspiegeld worden in de plaats en de manier waarop muziek geproduceerd wordt, maar ook in de muziek zelf. Denkt u dat er ook zo'n relaties bestaan tussen uw muziek en de open ruimte van het spoorweggebied van de Brusselse lijn L28?

C: Bestaan er volgens jou relaties tussen je bijdrage, de tekst, de video en de stedelijke omgeving waarin de muziekvideo gecreëerd werd?

S: – *waarschijnlijk ontstaat een idee van daaruit*.

C: Beoogt je via jouw werk een bepaalde stedelijke atmosfeer?

S: Ik wil vooral emoties doorgeven via muziek.
Bij het maken van Trap – denk ik aan de creatie van een happy en snelle – mood.

C: Of werk je mee aan de creatie van een bepaalde atmosfeer? Kunnen we sociale (collectiviteit, conflict, exclusie), en ruimtelijke kenmerken (architectuur, design) van Brusselse ruimte in je muziek horen? Emoties, zit er ook iets van samenhorigheid in je muziek.

S: Niet persoonlijk. Ik denk wel aan muziek die Noord afrikaans- klinkt als –en die miss zo mensen bij elkaar kan brengen. Persoonlijk nog niet. Er zijn muzikanten die het hebben over 'onze plek' : Damso – Bruxellesvie als voorbeeld – eigenlijk kunnen zeggen hoe hij
Bxl ziet – je moet het kunnen meemaken om het zelf te appreciëren.
Trap music kan mensen samenbrengen. Zowel Mannen / vrouwen. Zeker in de VS.

C: Werk je in jouw muziek rond een specifieke 'sense of place'?

S: *Ik denk het niet*

4. Mobilisatie:

C: Hoe bereik je een publiek, luisteraars? hoe bereik jij je luisteraars?
S: Op een bep moment dacht ik hier veel over na – dan even gestopt – nu gaat muziek meer om de muziek. Het Nederlandse label Spinnin' Records organiseert
een talent pool die mogelijkheden biedt om in contact te komen met luisteraars. Het doet je nadenken over de artistieke als business kant van muziek maken?

C: Kenmerkt jouw muziek zich door elementen van dreiging en gevaar?
S: Vroeger wel maar nu vind ik het niet zo aangenaam om dat te doen. Nu wil ik vooral happy muziek maken.

C: Beoog je met uw creatie een bepaalde vorm van affect of disruptie?

S: Ik wil Happy muziek maken: en dit bepaalt hoe mijn muziek klinkt – Muziek die je je beter kan voelen – maar er zitten zowel triestige als happy elementen in mijn muziek.

C: Streef je via uw muziek naar een andere stedelijke ontwikkeling?

S: Ik wil zeker de stad beter maken maar niet in het bijzonder via muziek – het zou kunnen gebeuren – maar nu doe ik het niet: ik weet het eigenlijk niet zo goed. Ik denk nu aan de competitie onder rappers in Brussel. Misschien kan het doel, de stad beter maken, de enige manier om alle muzikanten op een lijn te hebben– samenwerken rond een probleem, bv. politiek waar we het niet mee eens zijn. Misschien kunnen muzikanten in het streven naar een betere stad, problemen vinden die gemeenschappelijk zijn waardoor we iets hebben dat kan verbinden. De competitie onder hip hop muzikanten is heviger geworden de laatste jaren. Ik denk dat er twee types muzikanten zijn:
Eerste type: werken + muziek maken + ik wil iets gratis (mind sets)
Tweede types: ik ga werken om te investeren + (mind sets)
Ik wil mijn ding doen – en niet bezig zijn met die competitie.
Sarah van JES heeft me aangemoedigd om mijn kennis door te geven.
Ik denk nu na hoe ik via de studio iets kan bijbrengen:

C: Bedankt!

2. Informed Consent

Geïnformeerde toestemming : DEELNAME INTERVIEW SOUND DESIGNERS & PERFORMERS

[Dit IC-formulier is bedoeld als voorbeeld en dient aangepast te worden aan de specifieke studie.]

Titel van het onderzoek:

De Vibrationele Nexus van een Brussels Spoorweggebied in Transitie

Naam + contactgegevens promotor en onderzoeker(s):

Promotor:
Dr. Burak Pak
Professor, Altering Practises for Urban Inclusion Research Group, Faculty and Department of Architecture, KU Leuven, Brussels
Email: burak.pak@kuleuven.be

Onderzoeker:
Caroline Claus
PhD Student,
Altering Practises for Urban Inclusion Research Group, Department of Architecture, KU Leuven, Brussels
Email: caroline.claus@kuleuven.be

KU Leuven Departement Architectuur,

Adres:
Faculteit Architectuur, Campus Sint Lucas Brussels,
Paleizenstraat 65 -67, 1030 Brussel
Tel: +32 9 398 63 53

Doel en methodologie van het onderzoek:

Het doctoraatsonderzoek ontwikkelt een niet-antropocentrisch plannings- en ontwerpperspectief op auditieve en vibrerende interacties van het transformerende L28-spoorgebied, als een stap in de richting van sonische stedenbouw als kritische ruimtelijke praktijk.

Vanuit een bevraging van het gebruik en het beheer van open (groene) ruimte, het menselijk luisteren en de vormgeving van geluidservaring in processen voor stedelijke transformatie bij professionals en kunstenaars ontwikkelen we een voorstel voor een kritische herziening van de positie en de rol van geluid en trillingen in interdisciplinaire processen van stadsontwikkeling.

Het onderzoek steunt op de combinatie van verschillende methoden: theoretische studie en onderzoek in actie door middel van een casestudie gericht op de specifieke stedelijke realiteit van de ontwikkeling van (openbare) spoorwegruimtes langs het Brussels Westelijk ringspoor L28, deelname aan de onderwijspraktijk, veldonderzoek, workshop en semigestructureerde interviews en de organisatie van een focusgroep.

Deze vraag naar geïnformeerde toestemming heeft betrekking op:

Deelname aan een online semigestructureerd interview - een gesprek waarin de vragen en de volgorde van deze vragen in grote lijnen vaststaan. Er is echter de mogelijkheid om door te vragen op de antwoorden van de deelnemers en beperkt af te wijken van de vastgestelde structuur. Het interview gebeurt online via Skype for Business en wordt niet vastgelegd via geluidsopname. Het schriftelijk verslag van het interview zal u na afloop ter goedkeuring bezorgd worden.

Doel en inhoud van het interview:

In het interview waarvoor we u gecontacteerd hebben, peilen we naar:

- *Kenmerken van ritmische muziek of intonatie, het gebruik van gesynthetiseerde beats en andere geluiden, van één of meerdere tracks waaraan u meegewerkt heeft,*

- *Wisselwerking kenmerken van uw muziek – kenmerken stedelijke omgeving van het spoorweggebied van de lijn L28 (Brussel West – Molenbeek - Laeken),*
- *Hoe u als maker en/of performer een al dan niet gedeelde ervaring van Brussel West – Molenbeek – Laeken nastreeft.*

We willen kennis verwerven over de praktijk en ervaring van sound designers, rappers en musici die via compositie (idee, instrumentatie en bezetting), performance, opname, en/of mix en mastering hebben bijgedragen tot één of meerdere Hip-Hop of (t)rap video's die zich afspelen in een specifieke zone gelegen langs de Brusselse spoorlijn L28. Hierbij vertrekken we van het idee dat sound designers, rappers en musici van Hip-Hop en rap tracks vertrouwd zijn met, en know how hebben over hoe je geluid op een constructieve manier, als materiaal, kan aanwenden bij de vormgeving van stedelijke openbare ruimte.

Het interview bestaat uit een reeks vooraf vastgelegde topics of gespreksonderwerpen die we in de loop van het interview willen bespreken. De volgorde van de onderwerpen en de formulering van de vragen antwoorden liggen niet vast.

De topiclijst voor dit interview ziet er als volgt uit:

1. Algemeen:

- *Hoe bent u betrokken in de creatie van Hip-Hop of (t)rap muziek video's?*

Rond mij kijken – thai beats – geen genre eigenlijk. R&b:afrikaans/VS elektronische(elektro dubstep 2013 Drum n bass /

- *Hoe lang bent u actief als sound designer, muzikant, performer?*

Eerste ervaring: moeder 2 – 3 jaar oud. News Tune / Muziek. 7 – 8 techno // jumpsite mp3 muziek. CD + internet +

- *Wie of wat inspireert je bij het maken of performen van muziek?*

Brandweer alarm – Wie? Niet zo echt . stijl mss. Coller vermijden / Ideeën / Beat maken / Reggaeton : combineren – herinterpreteren – hervormen

- *Genoot u een muzikale opleiding?*

ESA uiteindelijk // workshops STUDIO JES – muzikansa

- *Welke andere invloeden heb je buiten de muziek?*
- *Wat begrijpt u onder 'stedelijke openbare ruimte'? bv Graaf van Vlaanderen –*

Gewoon muziek maken / : er moet geluid zijn – park niet alleen straat – plaats toegankelijk voor iedereen –

Geluid als overlast? Er is geen lawaai dat er teveel is. Er is gewoon constant lawaai. Bv. Experiment Graaf V Vlaanderen: ogen dicht – gewoon luisteren. Er is sowieso altijd geluid. Lawaai komt altijd met reden – geluid als signaal.

- *Woont u in de omgeving van de Brusselse spoorlijn L28?*

In de buurt van – 10 min van

2. Productie:

- *Wat doet u in de muziek, wat zijn uw skills en tools?*

Allemaal via computer – sinds vandaag gitaar idee? Akoestische gitaar – batterij drums -

- *Werkt u alleen of werkt u samen met anderen?*

1/week studio – vrienden soms alleen // nieuws proberen -

- *Leunt uw creatie aan bij een bepaald muziekgenre? -*
- *Wat zijn de belangrijkste structurerende kenmerken van uw muziek?*
- *Bestaat uw muziek uit gesynthetiseerde beats en andere geluiden zoals samples van veldopnames, vocals, autotune en/of percussie?*

Ik heb eigenlijk vooral geluid dat vocal gebruikt om een beat te nemen: vocals waarmee percussie gemaakt w – meer regg acthing.
Gn autotune // reverb + echo
Nog gn veldopnames verwerkt. Kan gebeuren in de toekomst.
Zou kunnen gebeuren.
Brandweeropnames – zoom – beat op basis van imitatie

3. Stedelijke Omgeving:

In haar studie naar de relaties tussen Grime muziek, politiek en de stedelijke omgeving van Londense wijken, wijst White (2020) erop hoe verschillende ruimtelijke kenmerken van binnenstedelijke gebieden weerspiegeld worden in de plaats en de manier waarop muziek geproduceerd wordt, maar ook in de muziek zelf. Denkt u dat er ook zo'n relaties bestaan tussen uw muziek en de open ruimte van het spoorweggebied van de Brusselse lijn L28?

- *Bestaan er volgens u relaties tussen uw bijdrage, de tekst, de video en de stedelijke omgeving waarin de muziekvideo gecreëerd werd?*

.. gebruikt – idee van daaruit

- *Weerspiegelt uw muziek de stedelijke ruimte van het spoorweggebied L28?*
- *Beoogt u via uw werk een bepaalde stedelijke atmosfeer?*

.. mss zelf niet. Emoties doorgeven via muziek.
Trap – happy en snel – mood // kan

Of werkt u mee aan de creatie van een bepaalde atmosfeer?

- *Kunnen we sociale (collectiviteit, conflict, exclusie,), en ruimtelijke kenmerken (architectuur, design) van het Brusselse L28_spoorweggebied in uw muziek horen?*

Emoties, zit er ook iets van samenhorigheid in je muziek.
Niet persoonlijk.

Noord afrikaans- klinkt als – miss kan dat mensen bij hen brengen.
Persoonlijk nog niet.
'onze plek' : Damson – Bruxelles villes als voorbeeld – eigenlijk kunnen zeggen hoe hij
Bxl ziet – je moet het kunnen meemaken om het zelf te apprecieren.
Trap music – mensen kunnen samenbrengen. Zowel Mannen / vrouwen.
Zeker in de VS.

- *Werkt u in uw muziek rond een specifieke 'sense of place'?*
Ben je op een bepaalde plek –
Draagt bij tot dat gevoel?
Ik denk het niet -

4. Mobilisatie:

- *Hoe bereikt u een publiek, luisteraars? hoe bereik jij je luisteraars – bep moment veel – dan even gestopt – nu muziek om de muziek. Spin records – talent pool – label;*
Artistieke / business kant -
- *Kenmerkt uw muziek zich door elementen van dreiging en gevaar?*

Vroeger – vind ik niet zo aangenaam. Vroeger wel. Nu wel happy.

- *Beoogt u met uw creatie een bepaalde vorm van affect of disruptie?*

Happy: hoe muziek klinkt – hoe je je beter kan voelen – triestig en happy in mijn muziek.

- *Streeft u via uw muziek naar een andere stedelijke ontwikkeling?*

Stad beter maken maar niet mee muziek – het zou kunnen gebeuren – niet persoonlijk niet via muziek: ik weet het eigenlijk niet zo goed.
Competitie onder rappers in Brussel?
Enige manier om alle muzikanten op een lijn – een probleem waar we samen bv tg politiek kunnen zijn. Iets wat gemeenschappelijk om te verbinden
Competitie versterkt de laatste jaren.
Twee types:
Eerste type: werken + muziek maken + ik wil iets gratis (mind sets)
Tweede types: ik ga werken om te investeren + (mind sets)

Ik wil mijn ding doen – daar niet bezig zijn:
Studio JES
Hoe kan ik iets bijbrengen:

VS – MIAMI / NYC : ze kijken alles in groot -

Verloop van het interview:

Het interview duurt hoogstwaarschijnlijk 45 minuten tot 1 uur. Indien u wenst dat het interview vroeger stopt, kan dit zonder probleem.

Het interview gebeurt online via de Software Skype Online.

Wanneer u beslist hebt om deel te nemen aan dit interview en het formulier voor geïnformeerde toestemming ondertekend heeft, bezorgt de interviewer u een week op voorhand via e-mail een uitnodiging met het tijdstip en de link voor de opstart van de online vergadering, de topiclijst en meer informatie over het onderzoek en het gebruik van de technologie.

De topiclijst zal ervoor zorgen dat u reeds op voorhand kan nadenken over enkele onderwerpen en vragen die zullen gesteld worden.

Tijdens het interview peilen we naar uw meningen aan de hand van bovenvermelde vastgelegde topics. De volgorde van de onderwerpen, de formulering van de vragen en de formulering van de antwoorden liggen niet vast. De vragen zijn open van aard en het stellen van bijkomende vragen die voortbouwen op het onderwerp of een gegeven antwoord blijft mogelijk. We ronden af met een open discussie en slotwoord.

De onderzoeker die het gesprek zal modereren is Drs. Caroline Claus KU Leuven onderzoeker aan het Departement Architectuur.

Tijdens het interview maken we geen geluidsopnames maar schriftelijke notities. De notities gebruiken we als basis voor het schriftelijk verslag van het interview dat we u na afloop, ter goedkeuring zullen bezorgen.

- Ik begrijp wat van mij verwacht wordt tijdens dit onderzoek.

- Ikzelf of anderen kunnen baat bij dit onderzoek hebben op volgende wijze:

  Introductie en reflectie over verschillende vormen van luisteren en vormgeving van stedelijk geluidservaring

- Ik begrijp dat mijn deelname aan deze studie vrijwillig is. Ik heb het recht om mijn deelname op elk moment stop te zetten. Daarvoor hoef ik geen reden te geven en ik weet dat daaruit geen nadeel voor mij kan ontstaan. Persoonlijke gegevens die ingezameld worden zullen gecodeerd worden voor verwerking in het onderzoek. Omdat uw naam hierdoor niet gekoppeld wordt aan uw antwoorden op de interviewvragen, zijn deze gegevens achteraf niet te traceren en dus

inherent geanonimiseerd. We zullen uw naam niet vermeld worden in welke vorm van rapportage dan ook.

- Ik begrijp dat ik geen financiële vergoeding voor deelname aan dit onderzoek zal ontvangen.

  Voor de verdere verwerking van de verzamelde gegevens geldt het algemeen belang als rechtsgrond volgens de AVG/GDPR. Stopzetting van deelname aan de studie houdt dus in dat de eerder verzamelde gegevens nog verder rechtsgeldig kunnen worden betrokken in de studie en niet moeten worden verwijderd door KU Leuven.

- De resultaten van dit onderzoek kunnen gebruikt worden voor wetenschappelijke doeleinden en mogen gepubliceerd worden. Mijn naam wordt daarbij niet gepubliceerd, anonimiteit en de vertrouwelijkheid van de gegevens is in elk stadium van het onderzoek gewaarborgd.

- Ik wil graag op de hoogte gehouden worden van de resultaten van dit onderzoek. De onderzoeker mag mij hiervoor contacteren op het volgende e-mailadres:

- Voor vragen evenals voor de uitoefening van mijn rechten (inzage gegevens, correctie ervan,..) weet ik dat ik na mijn deelname terecht kan bij:

  Onderzoeker:
  Caroline Claus
  PhD Student,
  Email: caroline.claus@kuleuven.be
  Tel: +32 9 398 63 53

  Promotor:
  Prof Dr. Burak Pak
  Email: burak.pak@kuleuven.be
  Tel: +32 9 398 63 53 `

  Meer informatie met betrekking tot privacy in onderzoek kan ik terugvinden op www.kuleuven.be/privacy. Verdere vragen over privacyaspecten kan ik richten tot de data protection officer: dpo@kuleuven.be

- De manier waarop dit onderzoek verloopt, is goedgekeurd door de Sociaal-Maatschappelijke Ethische Commissie van KU Leuven.

- Voor eventuele klachten of andere bezorgdheden omtrent ethische aspecten van deze studie kan ik contact opnemen met de Sociaal-

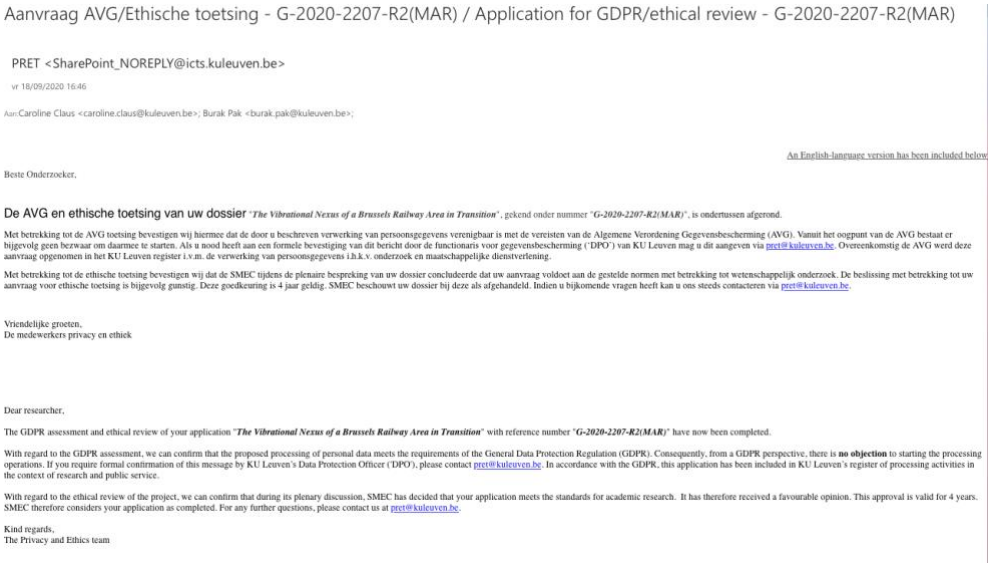
Maatschappelijke Ethische Commissie van KU Leuven:
smec@kuleuven.be

Ik heb bovenstaande informatie gelezen en begrepen en heb antwoord gekregen op al mijn vragen betreffende deze studie. Ik stem toe om deel te nemen.

Datum:
Naam en handtekening proefpersoon Naam en handtekening onderzoeker

(Signed Doc in KU Leuven Box of Prof Pak)

APPENDIX 03 – SMEC APPLICATION APPROVAL



Aanvraag AVG/Ethische toetsing - G-2020-2207-R2(MAR) / Application for GDPR/ethical review - G-2020-2207-R2(MAR)

PRET <SharePoint_NOREPLY@icts.kuleuven.be>

vr 18/09/2020 16:46

Aan: Caroline Claus <caroline.claus@kuleuven.be>; Burak Pak <burak.pak@kuleuven.be>;

An English-language version has been included below

Beste Onderzoeker,

De AVG en ethische toetsing van uw dossier "***The Vibrational Nexus of a Brussels Railway Area in Transition***", gekend onder nummer "***G-2020-2207-R2(MAR)***", is ondertussen afgerond.

Met betrekking tot de AVG toetsing bevestigen wij hiermee dat de door u beschreven verwerking van persoonsgegevens verenigbaar is met de vereisten van de Algemene Verordening Gegevensbescherming (AVG). Vanuit het oogpunt van de AVG bestaat er bijgevolg geen bezwaar om daarmee te starten. Als u nood heeft aan een formele bevestiging van dit bericht door de functionaris voor gegevensbescherming ('DPO') van KU Leuven mag u dit aangeven via pret@kuleuven.be. Overeenkomstig de AVG werd deze aanvraag opgenomen in het KU Leuven register i.v.m. de verwerking van persoonsgegevens i.h.k.v. onderzoek en maatschappelijke dienstverlening.

Met betrekking tot de ethische toetsing bevestigen wij dat de SMEC tijdens de plenaire bespreking van uw dossier concludeerde dat uw aanvraag voldoet aan de gestelde normen met betrekking tot wetenschappelijk onderzoek. De beslissing met betrekking tot uw aanvraag voor ethische toetsing is bijgevolg gunstig. Deze goedkeuring is 4 jaar geldig. SMEC beschouwt uw dossier bij deze als afgehandeld. Indien u bijkomende vragen heeft kan u ons steeds contacteren via pret@kuleuven.be.

Vriendelijke groeten,
De medewerkers privacy en ethiek

Dear researcher,

The GDPR assessment and ethical review of your application "***The Vibrational Nexus of a Brussels Railway Area in Transition***" with reference number "***G-2020-2207-R2(MAR)***" have now been completed.

With regard to the GDPR assessment, we can confirm that the proposed processing of personal data meets the requirements of the General Data Protection Regulation (GDPR). Consequently, from a GDPR perspective, there is **no objection** to starting the processing operations. If you require formal confirmation of this message by KU Leuven's Data Protection Officer ('DPO'), please contact pret@kuleuven.be. In accordance with the GDPR, this application has been included in KU Leuven's register of processing activities in the context of research and public service.

With regard to the ethical review of the project, we can confirm that during its plenary discussion, SMEC has decided that your application meets the standards for academic research. It has therefore received a favourable opinion. This approval is valid for 4 years. SMEC therefore considers your application as completed. For any further questions, please contact us at pret@kuleuven.be.

Kind regards,
The Privacy and Ethics team

(Complete SMEC Dossier in KU Leuven Box Prof Pak)

APPENDIX 04 – PUBLICATIONS, PRESENTATIONS, SEMINARS, CONFERENCES, & TEACHING

PUBLICATIONS

Claus, C., & Pak, B. (2019a). Studio_ L28: From a Socially Engaged Sound Art Practice to an Open Training Ground for Sonic Design Experimentation. *SHS Web of Conferences*, *64*, 02004. https://doi.org/10.1051/shsconf/20196402004

Claus, C., & Pak, B. (2019b). Urban Sonic Design Research as Critical Spatial Practice—Masterstudio_L28 (2018). In S. Adhitya, G. Kafka, & F. Shipwright (Eds.), *Sonic Urbanism*. &beyond. http://theatrum-mundi.org/library/sonic-urbanism/

PRESENTATIONS, SEMINARS, CONFERENCES

Claus, C. (2021). Sound Walk_L28: Part II. In Building Beyond: Summer School on Collective Strategies for Just Cities. Kaaistudio's, Brussels.

Claus, C. (2021). Sound Walk_L28: Part I & II. In La Semaine du Son / De Week van de Klank 2021. Flagey, Brussels.

Claus, C. (2021). Sonic Urbanism. In La Semaine du Son / De Week van de Klank 2021. De Markten, Brussels.

Claus, C. (2021). Jury Field Recording-Lockdown: Introduction and Discussion. In La Semaine du Son / De Week van de Klank 2021. Flagey, Brussels.

Claus, C., Pak, B. (2020). Learning from Sonic Urbanism as Critical Spatial Practice: Experiences from two design studios. Presented at URBAN CULTURES GOING PUBLIC LUNCH SEMINAR Winter 2020_21 hosted by KU Leuven Faculty of Architecture, 10 Dec 2020.

Claus, C. (2019). Sonic Urbanism as Critical Spatial Practice. Presented at VITRIEN #2: Sonic Urbanism. (Exhibition). Hosted by BNA-BBOT, 27 Jun 2019.

PRESENTATIONS AT INTERNATIONAL CONFERENCES

Claus, C., Pak, B., Di Croce, N., Cusack, P., Sterken, S. (2021). Decentering the human listener in urban planning and design research: toward a sonic materialist account of urban public space in transformation. Presented at the RC21, Antwerp, 14 Jul 2021-16 Jul 2021.

Claus, C. (2020). The art of cutting noise contours: exploring practices of unlistening in planning theory and practice. Presented at the Approaching Research Practice in Architecture, Digital Event hosted by TU Munich, TU Delft and KTH Stockholm, 08 Oct 2020-09 Oct 2020.

Claus, C., Pak, B. (2018). Towards Urban Sound Design for Transitional Public Railway Park/Places: Sonic Strategies for Engagement, Critical and Spatial Design. In: *CA2RE: Conference For Artistic and Architectural (Doctoral) Research Proceedings.*, (108-119). Presented at the CA2RE: Conference For Artistic and Architectural (Doctoral) Research, Aarhus School of Architecture, 13 Apr 2018-16 Apr 2018. Aarhus. ISBN: 978-87-90979-78-2. Open Access

Claus, C., Pak, B. (2019). Studio_ L28: From a Socially Engaged Sound Art Practice to an Open Training Ground for Sonic Design Experimentation. In: *SHS Web Conf. 14th European Architecture Envisioning Conference (EAEA14 2019)*: *vol. 64*, (2004-2004). Presented at the 14th European Architecture Envisioning Conference (EAEA14 2019), Nantes, France, 03 Sep 2019-06 Sep 2019. Nantes, France. ISBN: 9782759890682. doi: 10.1051/shsconf/20196402004

Claus, C., Pak, B. (2018). Urban sound design as critical spatial practice: no experiment guarantees a successful outcome. In: *Programme Crafting Urbanism*. Presented at the Crafting a sonic urbanism, MSH Paris Nord, 26 Sep 2018-26 Sep 2018

CONTRIBUTION TO EDUCATION ON MASTER LEVEL

ELB2 (2018 – 2020): Coordination Professor Dr. Burak Pak, KU Leuven International Masters in Architecture, Faculty of Architecture, Campus Sint-Lucas, Brussels.

Masterstudio (2018 – 2020): Coordination by Professor Dr. Burak Pak, KU Leuven International Masters in Architecture, Faculty of Architecture, Campus Sint-Lucas, Brussels.

APPENDIX 05 – ELECTIVE COURSE ON SONIC CARTOGRAPHY (2019 – 2020)

ELB2 Sonic Cartography L28 – Hyper Centre Molenbeek (2019)

By organizing and teaching in 2019 an elective course on Sonic Cartography[3], I have explored the potential of Brandon Labelle's (2011) acoustic paradigm in a mapping project concentrating on a network of public spaces connecting the Canal with the L28 line. In a three months elective course on 'sonic cartography', together with 8 students of the KU Leuven International Masters in Architecture I have studied the potential of different methods and tools for mapping acoustic territories on an axis of structuring public space between the Brussels Canal and the railway line L28.

Urban Context

For this experiment, we have focused on the network of 'structuring public spaces', situated between the Canal and the railway line L28. I wanted to explore how urban sonic research, using Labelle's modelling of public life, supports a critical understanding of inner-city dynamics in the public space of the area between the Canal and the L28 railway line. Urban renewal in this part of Sint-Jans-Molenbeek has a long history. Recent interventions have taken place within the framework of a neighbourhood contract of which some objectives were the increase of traffic-free public areas and local youth infrastructure (Projecten van het Wijkcontract Cinéma Belle Vue, 2012). How can we take account of this transforming public space by listening to it?

[3] In 2019 Dr. Burak Pak invited me to teach an Elective Course as part of the PhD research project.

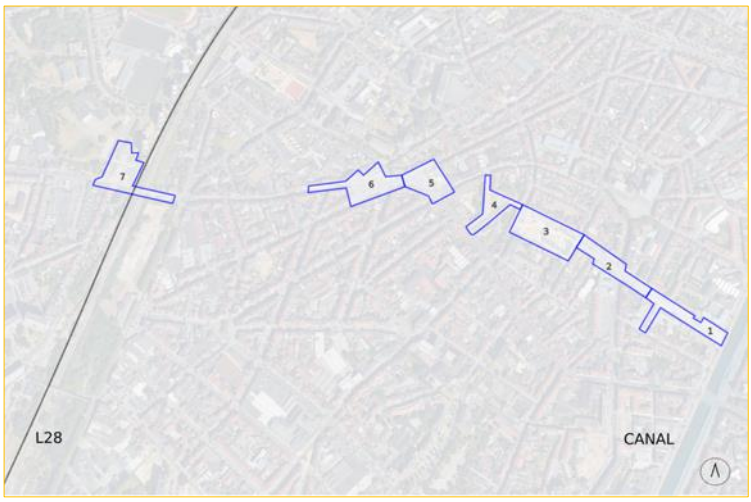


Figure 67.Project Space ELB2 (2019): 'structuring public spaces' between the Canal and the railway line L28

Dirty Ear Forum – Acoustic Territoriality

In February 2019, I was invited to join Elena Biserna, Lia Garcia, Jerome Giller, Brandon LaBelle and Anna Raimondo in the 8th edition of the *Dirty Ear Forum*:

> Through collective research and experimentation, sound and listening we reflected upon the politics of space. This included drawing into play the key terms of "territoriality" and "invisibility." How might the spatial qualities and capacities of sound and listening allow for engaging a spatial politics of local environments? If issues of marginality and belonging are understood spatially, in what way might sonic practises allow for socially engaged intervention? Are there forms of collective agency to be discovered through sound's invisibility? How does recognition emerge through being audible yet unseen?
>
> Dirty Ear Forum (2019)

From an expanded notion of acoustic space and territories, Brandon Labelle (2010) sets out a path that moves us away from a phenomenology of spatial relations to 'the acoustic territories' of social production. Labelle proposes a model of public life constructed around the relational body, the idea of expanded architecture, and the voice that is language but not always language, which is equally an unsettling of knowledge. By collecting qualities in a model of public life, Labelle wants to create a platform for a new type of being together, as well as a new type of sharing; by integrating the intensities of listening into the contemporary scene of public life, Labelle speculates on future conditions for radical empathy that may equally deepen our understanding of what we know as well as what escapes knowing. Labelle's proposal for a model of public life informed the program and approach of the elective course that immediately followed the seminar.

Methodology

To collect information on socio-acoustics in the public space of Molenbeek Sint Jan: a mixed methodology was introduced to a group of 8 master students in architecture. Throughout the course I introduced different methods and tools. Following an introduction to sound studies and Labelle's paradigm, I opened the course for a more performative mapping approach. Relying on network practice we have explored possible methods and tools for public participation.

The elective course started with a curated soundwalk for an explorative observation of the open railway space in relation to the sonic experience of place, and the idea of moving narratives while walking and listening. The 'soundwalk' (Barakat, 2016) was introduced as a method for training a heightened listening awareness of urban context and place, to explore the idea of a non-human experience of (sonic) vibrations, and to learn how to employ that into design research.

I have organised this course in collaboration with Abdel Aziz, Youth Service staff and members of the Youth Council of Molenbeek. The course took place in the office of the Youth Service located on the axis connecting the Canal and the railway line L28. These conditions facilitated a continuous interaction between students, researchers, staff, and members of the youth council. During the opening celebration of the renovated Bonnevie Park, students engaged in a curated dialogue with residents.

For a practical exploration of Labelle's conception of public space, I have suggested the use of geographic approaches highlighting sonic experiences along the axis of structuring public space. For an identification of 'acoustic territories', I have asked students to start with a mapping of the socio-physicality of sonic experiences and then to investigate the role they play in delineating territoriality in a context of urban transformation. The geographical scale of the mapping project is that of the public space containing sonic experiences, in agreement with the idea to focus on public life. The proposed approach was structured around the conception of acoustic territories. Students were encouraged to combine sociological approaches such as a questionnaire for mapping subjective experiences and more objective analysis such as measurements of sound level meters with an experimentation in non-human centred mapping of sonic experiences. Labelle's paradigm for public space, constructed around the relational body, the voice that is language and not always language, and the idea of expanded architecture encouraged the experimentation with a more process-oriented, embodied, and performative approach to cartography (MacDonald, 2017). Introducing possible approaches to 'performative mapping', I aimed to confront students with the difference between the absolute spatiality of cartography and the relational spatiality of movement when searching for a sonic cartography of a public space in transformation.

The use of interactive Geoweb mapping sites was encouraged in addition to the use of recording technology. Students were introduced to different types of collaborative mapping projects such as the Brussels Sound Map[4], Lomap[5], the Sound Map of Tallinn[6], and Waend[7]. Apart from the Talinn map, it concerns all online platforms for subjective and collaborative spatial mapping. Through 'networked practice' I have searched for a broadening of knowledge on local socio-acoustics dynamics and insight into different methods, tools and techniques Brussels actors use. Besides guest lectures by Waend and BNA-BBOT[8], also, Open Lab for Bio Acoustics[9] has informed us about techniques and methods they use for bio acoustic monitoring of urban spaces. An employee of Growfunding vzw[10] informed the group of international students about local networks and practices. Collaborating with the Youth Council of Molenbeek[11], facilitated an in-situ mapping and discussion.

Following a series of 'sound walks', I invited students to pick a public space along the axis for their individual analysis of acoustic territories. By using methods of listening and exploring different tools, students started to work on a better understanding and mapping of the sonic environment in which they found themselves. Different tasks have been assigned to the students: collecting sound recordings; location and identification of types and sources of (sonic) vibrations; localization and description of sonic experiences in relation to the body, (social) appropriation of space by means of text and drawings. I have asked them to experiment with different types of graphically representing socio- acoustics. For a collective mapping exercise, students were divided into two groups of four. I asked

[4] http://www.bna-bbot.be/brusselssoundmap/?lng=nl
[5] http://lomap.be
[6] https://tallinnsoundmap.wordpress.com
[7] http://waend.com
[8] http://www.bna-bbot.be/Public/
[9] https://www.facebook.com/Openlabforbioacoustics/
[10] https://growfunding.be
[11] http://www.molenbeek.irisnet.be/nl/ik-leef/kinderen-jeugd/jeugd-dienst

one group to explore the potential of performative mapping. Another group was asked to test a participatory mapping during the opening weekend of one of the renovated public spaces.

Individual Outcomes

Each student selected a public space on the axis of 'structuring public spaces' for individual research on acoustic territories. Students used different techniques for the registration, analysis, and representation of (sonic) vibrational data. The mapping of the socio-physicality of public (sonic) vibrations, the role they play in delineating territoriality in a context of urban transformation, and especially selecting elements for representation, turned out to be a challenge for the students in architecture. In the first phase of the research project, a lot of students searched for the representation of loudness by means of colour codes. Students made their recordings available for playback by means of the project map of the Brussels Sound Map.[12]

1. François Maindiaux zoomed in on 'zones of transition' between different territories in the public space close to the Canal. He identified territories on the basis of an analysis of frequencies, loudness and the propagation of sound in relation to the morphology and use of the public place and the surrounding housing complex.

2. Leonie Van Bellingen has opted for a vertical reading of the subway station Graaf Van Vlaanderen. She defined the area around the metro station as a 'critical space': a space in constant state of transit with access to the city. Through the exercise in performative mapping, she searched for

[12] For a playback of the recordings see project map L28: http://www.bna-bbot.be/brusselssoundmap/theme-632/

parameters that affect the way sound propagates in space and how this territoriality adds quality to space. Besides parameters coming from acoustic ecology such as the 'acoustic horizon', she Leonie also focused on the 'rhythm' generated by machines that she considered as part of this mobility hub. From this perspective, exploring different tools, she identified five territories that inform us about the social life on this location of the axis.

3. Louis Viérin has explored the sonic environment of the renovated public and semi-public youth infrastructure. His mapping of acoustic territories is based on an analysis and representation of sonic qualities in relation to the new infrastructure and its functions and people's experience. By means of a survey with residents, sound recordings and a morphological analysis of the environment, Louis arrived at a positive presentation of acoustic territories in the renovated youth space. In his analysis and representation, Louis paid particular attention to the control of sound in the new design for the public park. Louis considered every sound experienced in the area, as a public event. For him, sounds can be affected by other sounds. By introducing verticality into his drawing, Louis emphasized how the boundaries of acoustic territories do not always correspond to the anticipated physical boundaries. This also has brought him to the

identification of what Labelle defines as the ‘tension between interference and intimacy’.

Figure 68. Brussels Sound map

http://www.bna-bbot.be/brusselssoundmap/theme-632/

4. Dalia Puodziute decided to work on the centrally located triangular space Place Voltaire. She explored the potential of what she defined as ‘sound behaviorology’ for a mapping of ‘sonic inhabitation’ in an urban scenography. She studied the presence of territories in this space by zooming in on the micro level of particles. From this materialistic perspective, she investigated how the movement of sound, a particle, a mediation, a space between the source and psyche of a human, forms a shared space. Via a methodology of portraying and reflecting the dynamics

of sound by using a ‘dot technique’ she searched for an articulation of sonic bodies within the space of observation. For her, by relating the presence of sounds to the morphology of the space and the embodiment of sound, acoustic territory in Place Voltaire becomes an ‘urban scenography.’ By use of ‘sonic miniatures’ representing different experiences of sound, captured in the recordings of the public space, Dalia developed a proposal for an atlas of ‘sonic artefacts’ to express the sonic diversity of the area. From here she developed further her understanding of ‘acoustic inhabitation.’ Sound she considers as an important generator in the provocation of a feeling, bringing back memory and therefore not to be neglected when, as an architect, one wants to obtain insight into the present and future conditions of urban public space.

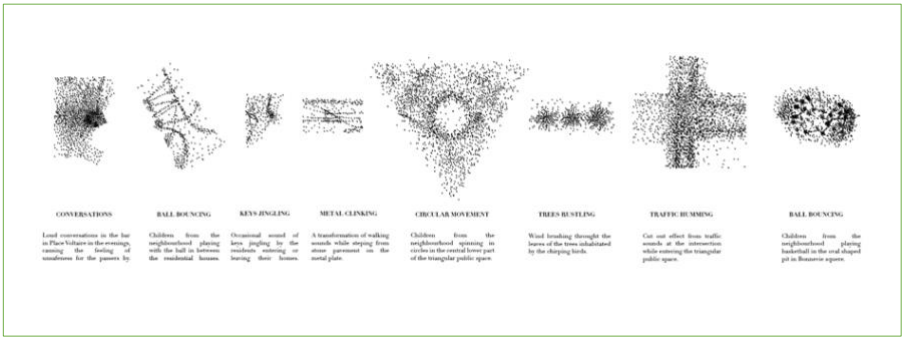


Figure 69. Dalia Puodziute / Sonic Artefacts - Place Voltaire (Structuring Space n°4)

5. From a sonic perspective on the square / parking space at Piersstraat and Berchemstraat, Erica Yanagui identified two acoustic territories in contraposition. For her traffic sounds and vibrations determine one territory. It is characterised by heavy flows of sounds spreading all over the public space. For her, the rhythm, the dynamics of this territory represent life. Sounds from the wind in the trees, birds, people 's conversations determine the other territory Erica identified. Through performative and

graphical mapping of sounds Erica explained the relation between the two territories is hierarchical. She observes how the ‘territory of natural and human sounds’ is affected by the ‘territory of traffic sounds’.

6. For his analysis of the public entrance of the station Zwarte Vijvers, Jacob Durand followed Labelle’s idea that sound creates spaces, through its interactions with the physical worlds. A second reference of Jacob is Daniel Deshays’ (2006) book Pour une écriture du son. From Deshay he learned that the experience of what he calls ‘micro-casque’ (microphone and headphone) creates a distance in our perception and allows our hearing to focus on the surroundings. Jacob decided to race the territory of the clicking sound of the loose metal plates used to materialise the entrance of the metro Etangs Noirs. Jacob described different characteristics of the sound object such as speed, loudness, etc. For him the sound materialises the entrance of the metro space at Etangs Noirs but for him, the constant rhythm of this sound causes it to lose our attention, almost as if it fades away. Jacob identified how the clicking sound expresses information about the public space at Zwarte Vijvers such as the movement on the square. From here Jacob speculates how the ambiance created by the clicking metal plates, could be linked to another place, or how this sound can generate or contribute to an imaginary territory.

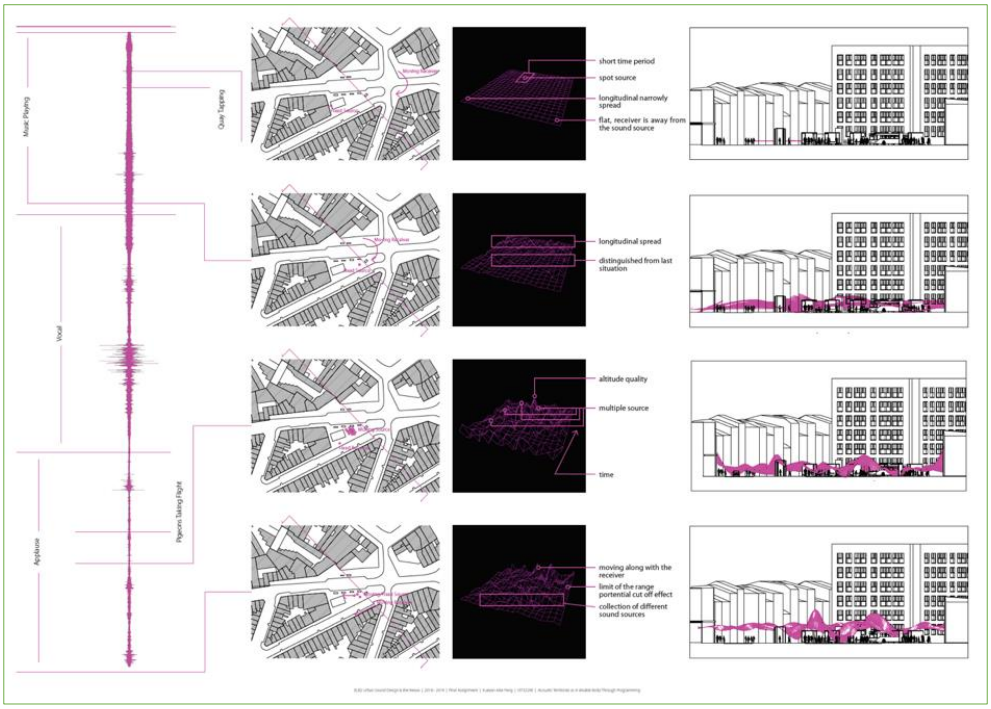


Figure 70. Xueyan Alex Feng | Acoustic Territories as A Visible Body Through Programming (Structuring Space N°6)

7. Xueyan Alex Feng has worked on a creative interpretation of the presented methods and intentions. Following her reading on Labelle's conception of acoustic territories, she explored the use of multiple possible parameters such as a border and a shape for her subjective research and more abstract representation of territories. She started with a mapping of recorded sounds by use of the technique of 'onomatopoetic.' Through her participation in the performative mapping exercise, she experimented with a re-introduction of features into space. To identify territories at 'Zwarte Vijvers', she searched for rhythms belonging to that territory. For the collective exercise in performative mapping, she used different techniques such as clapping, music playing, sentence repeating and metal rings tapping in the urban space she selected. By means of these techniques she wanted

to identify the border that one specific sound can transmit at a particular time. She experimented with an audio waveform graphic representation of a modified recording she made while walking around in the urban space. By putting the graphical representation of a sound recording back into an architectural scale, she wanted to explore the possibility of representing and experiencing a sonic experience that happened in the past. For her, the representation can be considered as a solid object sound art project that focuses more on a performative level - a sound-transformed object consisting of time, space and all other influences. Through perspective drawing she arrived at a representation of a graphic shape in its territory. For her the point of interest of doing so, lies in considering the sound as a visible body which we try to inform and implement computationally. She approached programming as a tool. More specifically she explored the potential of customised commands in computer software using a mathematical subdivision of geometry. Her combination of two different coordinate systems caused confusion and became a point of discussion on how to organise a communication between two different systems in one representation of a sonic experience.

8. By means of survey and analysis of acoustic territories at different locations along the axis, Matheusz Modweliski identified a typology of public spaces. For his typology he uses three parameters: quantity of acoustic territories present, space, and coherence. The first type he identifies is ‘singular acoustic territory’. A second type is ‘plural acoustic territory’, which he divides in two: ‘territory in resonance’ and ‘territory in conflict’. Therefore, he uses the parameters of space and coherence. Matheusz uses the world conflict in a mathematical sense rather than emotional. For him conflict emerges when two different/opposite acoustic territories (singular, or plural) meet each other.

Collective Outcome

A reflection on Labelle's conception of acoustic territoriality accompanied students in mapping acoustic territories in the structuring spaces of an axis of public space connecting the Canal with the Railway Line L28. The idea of sound as expanded space, soundwalking and the request for a participatory or performative mapping, has motivated masters students in architecture to experiment with different methods and tools for planning research on public urban space. We finished the elective course with multiple representations of different acoustic territories observed in seven different public spaces along the axis.

Starting with a more embodied form of map making by means of a soundwalk along the axis of structuring public space and an introduction to field recording practice, students' work evolved gradually into an abstract representation of one or more acoustic territories using an absolute conception of urban space as the basis framework. The collective cartography or the assemblage of all the individual projects, however, demonstrates an exploration of different relational sonic spatial conceptions and mapping.

Thinking urban sound through Brandon Labelle's modelling of public space forced students to reflect upon a more relational spatiality associated with a particular understanding of movement challenging ideas of an absolute conception of space that dominates our knowledge of cartography. Throughout the research process it became clear that performative mapping was more relevant for this research project than participatory mapping. While participatory mapping based on the demand for favourite and unfavourite sounds confirmed dominant notions of sound and public space, a performative approach to the use of new tools and wider results opened to more creative imagining of urban space.

A focus on the movement of sound through space, material and bodies, not only made all the students fix the traces of observed sounds on an absolute space of cartography, it also motivated an understanding and further exploring of cartography as processual and performative. In some of the projects such as Xueyan Alex Feng's, this led to an unsolved confrontation between two reference systems.

Collectively the sonic research based on Labelle's modelling of public life, supported a critical understanding of inner-city dynamics in the public space of the area between the Canal and the L28 railway line in different ways. First, the research project demonstrates the possibility of mapping acoustic territories of a public space in transformation. Students pointed out the presence of different territories scattered around the structuring public space. Erica Yanagui and Matheusz Modweliski pointed to a possible conflict between the different acoustic territories they identified. Especially Leonie Van Bellingen, Louis, Viérin, Erika Yanagui and Alex Feng paid attention to territories that might be affected by change. Finally, based on this relational understanding of the body and expanded notion of space, the research project opened up new design perspectives on public space. By mapping acoustic territories, students highlighted different qualities that can also be included in the design of a place.

Conclusion | Closing remarks Elective Course ELB2 (2019)

Via a collective educational research project, I have explored the potential of Brandon Labelle's acoustic paradigm for a sonic cartography of a structuring public space in transformation. In a three months elective course on 'sonic cartography', 8 students of the KU Leuven International Masters in Architecture have researched in group, and individually, multiple methods and tools for mapping acoustic

territories along an axis of structuring public space between the Brussels Canal and the railway line L28.

One research goal was to explore how Labelle's understanding of a relational body and expanded space allows urban architectural researchers to highlight and understand acoustic territories of an urban space in transformation. One of the first and most striking elements of this mapping project was the unknowing and inexperience of students in architecture in working with sound in urban analysis. The importance of the introduction of a theoretical understanding I consider as crucial to get students involved in the research process. The research on sonic cartography exploited tensions of different understandings of space. A perspective on trajectories of sound moving through space, bodies and matter forced students to reflect upon a relational understanding of space, in which space becomes secondary to the processes that are normally thought of as occurring within it. I conclude that a performative approach to cartography was better suited to this urban sonic research than the standard, participatory survey of the subjective experience of sound among inhabitants. Although all the students finished with an abstract representation of one or more acoustic territories using an absolute conception of space, the project highlighted new forms of map making, opening up to more processual understanding of cartography. This is therefore the path I would like to explore in more depth the following year.

ELB2 Sonic Cartography L28 North Area (2020)

In ELB2 Urban Sound Design & the Nexus (2020) we concentrated on the mapping of possible sound experiences of transforming (green) railway spaces under the recent Covid-19 measures. In a first series of course sessions I focused on a theoretical framing of urban sound), and from this understanding, the selection and articulation of (sonic) vibrational characteristics of urban space. Next, I invited students and network partners such as Bravvo Laeken (asbl), Jardin Collectif de Tour & Taxis, Bral vzw, Open lab for Bio Acoustics Brussels and A place to live vzw for a meeting on collaboration. After an introduction to digital tools for a sonic (counter) mapping, students selected one of the sites in the project area.

With the collapse of public life, public transport and industrial machinery, the level of 'anthropogenic noise' dropped dramatically, especially in the first few weeks of the Coronavirus lockdown in Belgium. Other experiences of the Brussels sound environment suddenly became possible. Striking was the increasing presence of bird song, often birds are not seen or heard so intensely in the region. Coronavirus lockdowns even caused a significant decrease in seismic noise: our earth trembled just a little less (Lecocq et al., 2020). Other seismic events using the same frequency ranges as our anthropogenic noise suddenly became noticeable.

Given the health crisis, for this research action I aimed to respond to the following question: In the audible confrontation with systemic challenges, how can we learn from practises that explore the potential of human non-human sonic experience as a tool for urban planning and design?

Together with 7 students I have explored this question for 7 different sites in the northern part of the railway area of the l28. Because of the 2020 Covid measures we organised a big part of this course online. Also, network practice and site visits

happened online / virtually. In this class students have analysed several sites located in the northern part of the railroad area of line L28.I discuss a few of them.

1. Collective Garden by Mumtaaz Viaene

“The data collection in the collective garden in the Thurn and Taxis Park for my research started on the 13th of March. Coincidentally this was also the day that the Corona measures were announced in Belgium. All schools, cafes and social gatherings were suspended, even made illegal. During the first lockdown I decided to shift my research to the impact of these measures on the communal garden. Both sonically and socially I have explored the implications of events between the 13th of March and the 24th of May, the latter date being the end of the Ramadan. Because there is a large Muslim community living around the garden, the Ramadan had an impact on the way people use the garden. During the mapping process I created a sonic piece to represent the changes and events that were happening between the 13th of March and the 24 of May. Using Sonic Pi, a sound programming software, an audible representation of the garden was created.”

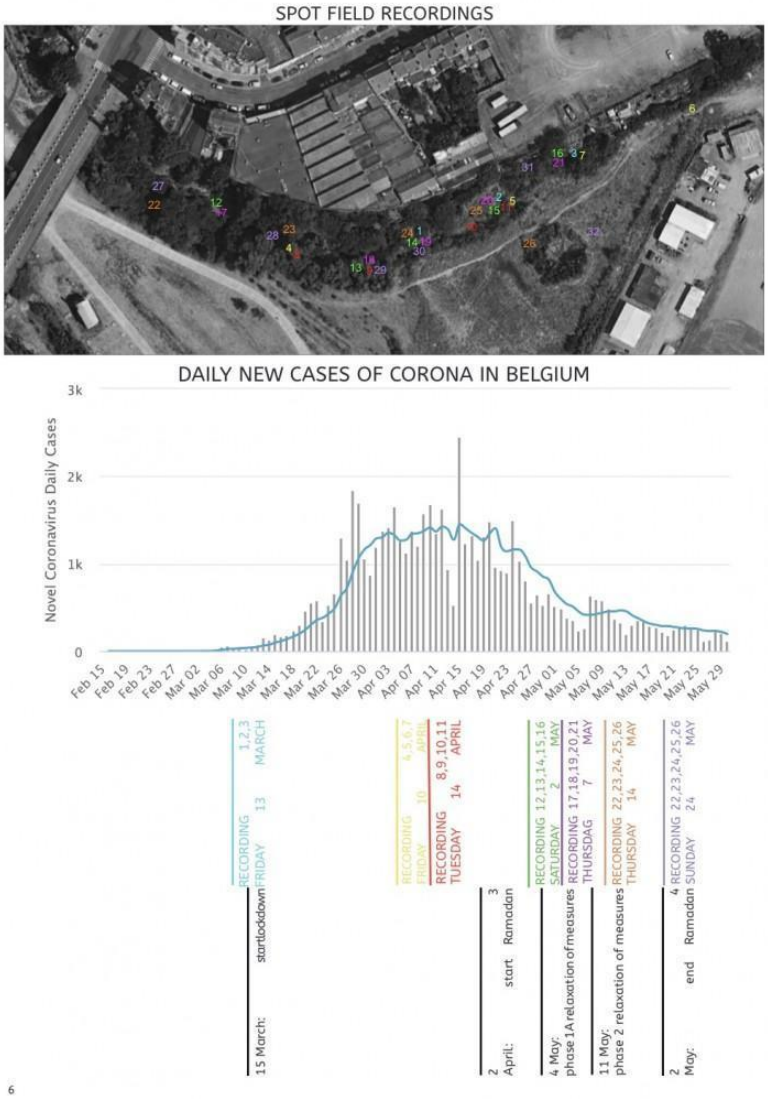


Figure 71. Project by Mumtaaz Viaene (2020)

2. Exploring sonic atmospheres and the potential of un-contextual sounds by Goele Reynders

“This project focuses on sonic atmospheres. The Tour and Taxis site has been transformed from train tracks to a park and a platform. Each of them has a specific atmosphere with their own sounds. What are sounds that are dominating? Do these sounds belong there? Or are they out of context. This, today and in history. Hearing sounds that do not make you think of a certain context can generate a different kind of feeling. Good or bad. And more interestingly, they can have an impact on urban spaces, giving them a more comfortable, safe feeling or otherwise an uncomfortable bad feeling. How do these out of context sounds manifest in the Tour & Taxis train station? The site is unique. A rather unpleasant station next to a welcoming park. Do people profit from it, or is it a hazard for the park?”

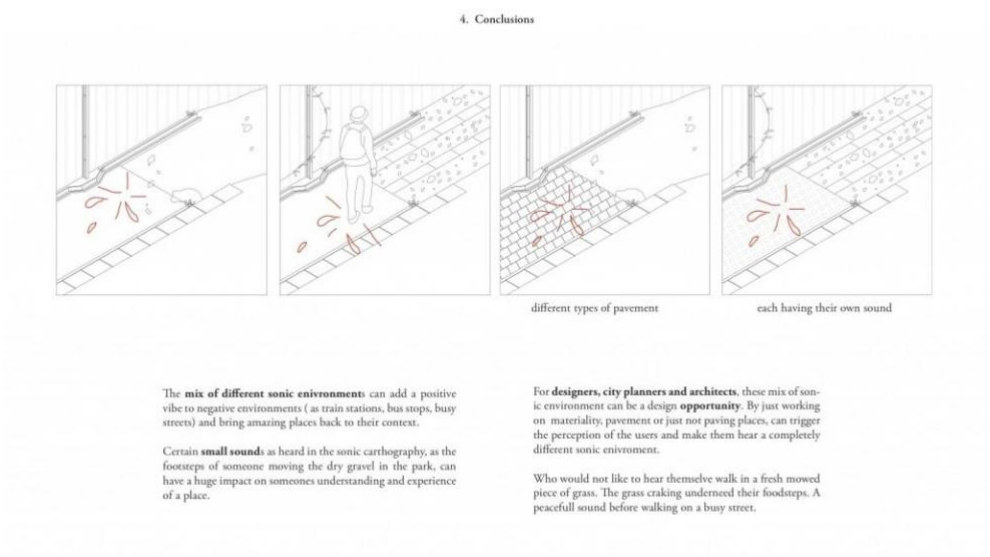


Figure 72. Project Goele Reijnders (2020)

3. The Cranial Urban Realm by Adwait Jadhav

“The Cranial Urban Realm is a speculation on the sounds which exist in urban spaces. The sounds which are less heard, the sounds which we ignore and the sounds which we may only be able to imagine. This study draws from the non-anthropocentric view and puts the listeners in a position to hear themselves. Listening to this point of view can be used as a means to help us understand the effects of the smallest sounds that we make as users of an urban space, in this case a collective garden.”

4. ICI? OÙ? LA? by Alice Ashton

“On 17th March 2020, governmental confinement measures were put in place due to the Covid-19 pandemic which significantly influenced and informed the project. The project area is an area of about 0.1 km squared around Bockstael square. ICI? OÙ? LA? is a participatory project that sought to identify, interrogate and critically represent the following question in three parts: Can a distinctive community be identified in the project area during the confinement period? Can this community be identified through sonic research?

Link to the website: icioulabockstael.com

5. Bockstael Station: How Human Activities Relate to the Train Station by Lin XIANG

“I studied the site of Bockstael Station. I focused on the relationship between human activities and the arrival and departure of trains. I decided to study three places (in the station, on the outdoor platform, in the street after a fence). In each location I recorded the sounds of trains and human reactions. As an observer, I stood in the same place to catch sounds and habitual routes of human activities

when the train was coming. What I observed is that human activities are abundant and closely related to the running tracks of trains. Some human behaviors are interesting and worth exploring. The duration of train stops in Bockstael station is normally 90 seconds: the sounds of the train pulling in and out forms a signal informing the passengers, giving them a clear direction and schedule."

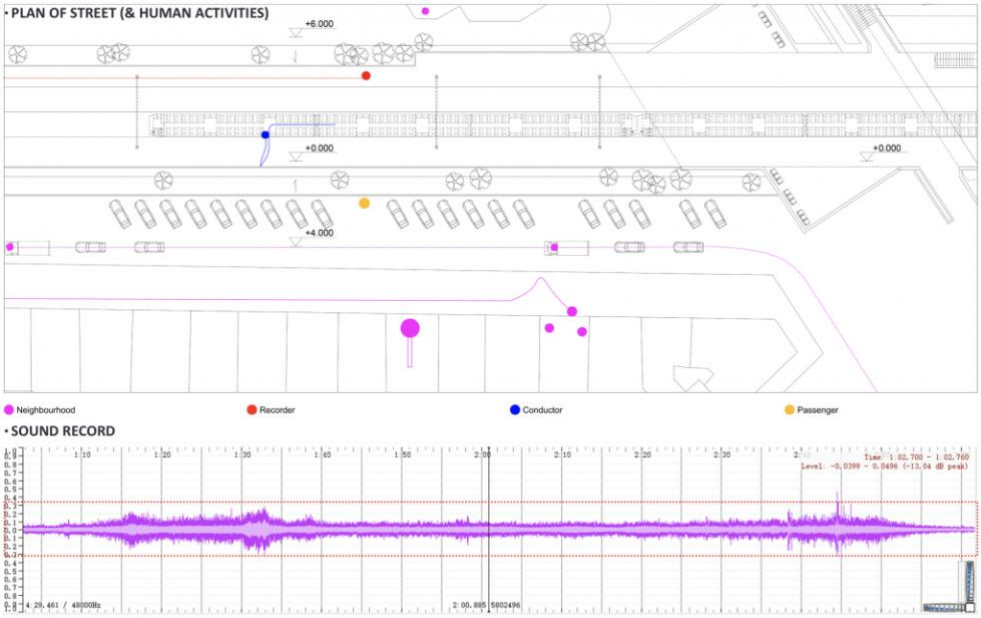


Figure 73. Project by Lin Xiang (2020)

6. A Walk in the City by Saie Manisha Madhav

"A Walk in the City is a speculative, experimental study that shows the contrast in our sonic environment, with the help of augmented sound maps. It shows the dramatic change in the acoustic environment of a place when these man-made sounds are removed or made negligible. It creates a sonic experience of a heterotopic scenario for the listener. A scenario where the city is as 'quiet, calming and peaceful' as countryside or a forest. In a sonic environment the absence of man-made sounds creates the effect of being 'quiet and calm'. The experiment

shows the change in the sonic environment when man-made sounds are taken away from an urban area. Will it be changing the way we perceive the city, or will it stay the same? Will it create a 'quiet and calming' effect?"

7. Sonic Possible Worlds – The Royal Garden of Laeken by Lise Vaeyens

"My project site is the royal domain of Laeken. More specifically the 6 km long wall around it. The park is owned by the royal donation and is completely private, nobody can enter the property. This forms a strong contrast with the dense neighbourhood that surrounds it. The park wall is a hard border with barbed wire and cameras. Through my sound mapping, I want to give people an idea of what a possible experience in the park could be like. That's why I choose sound mapping as storytelling. The character will write you a postcard from 3 different points in the park. Her story can give you an idea of how the park possibly feels or looks like to walk around in it."

Conclusion | Closing remarks ELB2 (2020):

The collective cartography or the assemblage of all the individual projects demonstrates an exploration of different relational sonic spatial conceptions and mapping approaches in relation to the condition of a lockdown. The context of the Pandemic during the course forced both the students and myself, the researcher involved, to rethink research methods and approaches while preparing the field study. In the audible confrontation with systemic challenges, how can we learn from practises that explore the potential of sonic experience as a tool for urban planning and design?

All the students have embraced this extraordinary condition as a learning opportunity. By introducing students in architecture to the discipline of sound studies and texts on sonic materialism in the sound arts, I have encouraged students to take this perspective as a frame for their work on sonic cartography. The introduction of these abstract ideas has encouraged students to think differently about the theoretical framework, the research question, and the use of technology in their projects on sonic cartography of the specific site they decided to work on. Throughout the process it became clear that also the context of covid_19 lockdown had an impact on the research projects.

Students combined field study with an online collection of data inclusive publicly available sound samples. Only one student, Alice Ashton, decided to organise a participatory mapping. Inspired by the sonic materialism and urban context of the project area she focused on sonic experiences in different collective spaces situated around the Bock Stael station. From here she developed an online tool for a continuous conversation on the experiences in line with the transformation of the area.

Because of the lockdown, several students opted for a speculative approach rather than site observation or participatory cartography. This was the case for Adwait Jadhav who decided to explore a non-anthropocentric perspective on the movement of sound through space, material, and bodies. Adwait developed a speculative design approach for mapping possible sonic experiences of different positions in the collective garden at BockStael Station. Starting from a non-anthropocentric experience, his research project opened for an expanded notion of space and non-human sonic experience.

Both Saie Manisha Madhav and Mumtaaz Viaene explored the impact of the lockdown on the sonic environment of the project area. Learning from the lock

down experience, Saie Manisha Madhav defined a heterotopic scenario for the listener. Following the network meeting and soundwalk, Mumtaaz Viaene decided to observe and analyse the sonic environment of the Collective Garden of Tour & Taxis. Through literature study, site observation and analysis before and during the lockdown, Mumtaaz questioned the impact of planning and lockdown on the appropriation of the garden space. Both her visualisation and speculation on future possible sonic experiences are built around the conception of atmosphere. She used Sonic Pi for the sound design of possible sonic experiences.

Also, Lise Vaeyens opted for a speculative approach. Inspired by the work of cartoonist and urban researcher Marie Couteaux, she decided to use narrative as the basis for her mapping of different sonic experiences in closed Royal Parc.

Goele Reynders opted for a sober design approach. She explored the materiality of sound effects for different activities in the tour and taxis railway station area. This was also the case for Lin Xiang who studied the sonic environment of Bockstael railway station by focusing on the sonic experience of an arriving train as a signal or informational sonic effect.

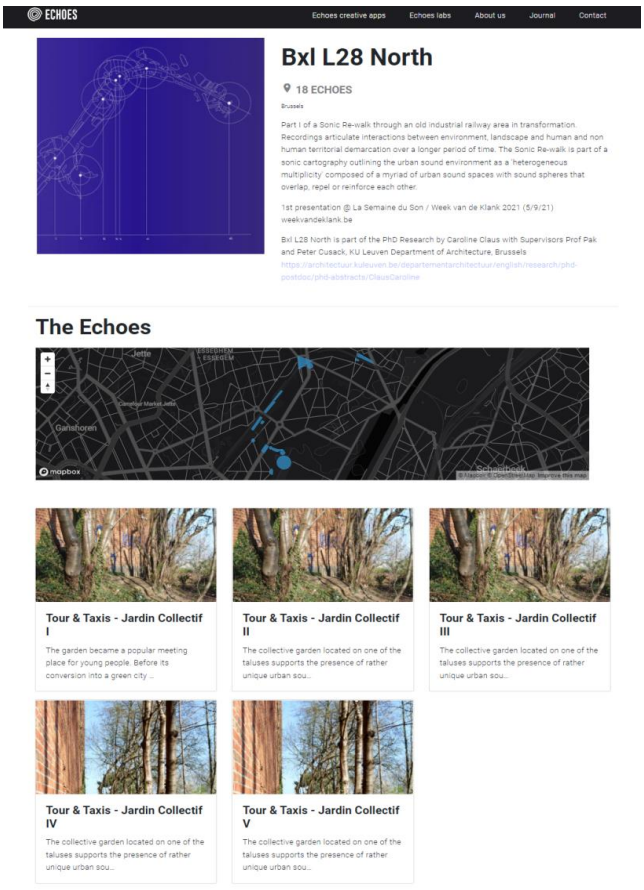
APPENDIX 06 – AUGMENTED SONIC EXPERIENCE

Information on the intended online and augmented sonic experience via

- Listening via Echoes.xyz
- Listening via alternative online platforms

1. Listening via Echoes.xyz

1.1 Online Sonic Cartography via Echoes

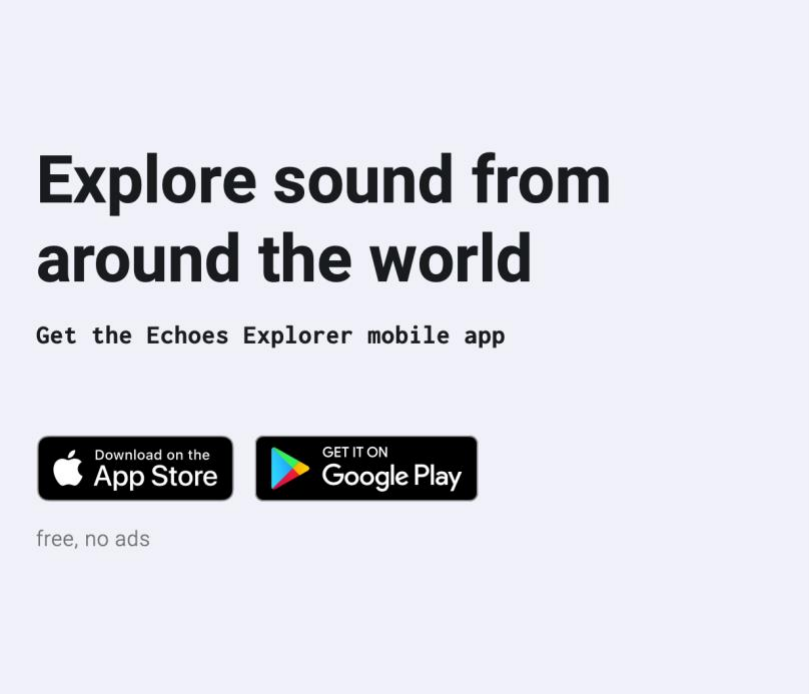


URL to the online audio papers (Echoes Platform):

Bxl L28 North: https://explore.echoes.xyz/collections/hlktnlM2MAThliyy

Bxl L28 West: https://explore.echoes.xyz/collections/3ImAo54T1CIN7rx9

1.2. Installation Echoes App

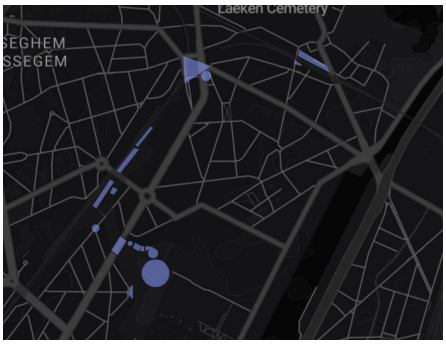


URL to install the application:

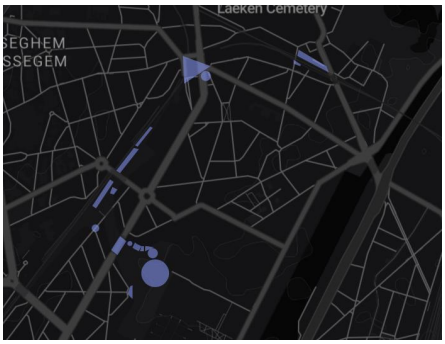
https://echoes.xyz

1.2 Listening to the soundfiles via alternative online platforms

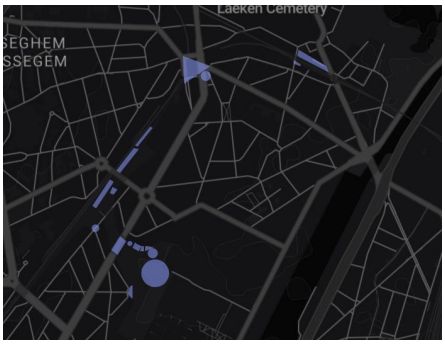
Bxl L28 North - Park North:


Recording (1) Tour & Taxis - Frozen Wetland (2021): *https://aporee.org/maps/?loc=52231&m=satellite*
Recording (2) Tour & Taxis – Pont Jubilé (2014): *https://aporee.org/maps/?loc=42910&m=satellite*
Recording (3) Tour & Taxis - Jardin Collectif I (2014): https://aporee.org/maps/?loc=48352&m=satellite
Recording (4) Tour & Taxis - Laekenveld (2020): *https://kuleuven.box.com/s/jks3nq5hkyi4hj7mtxw62y8a2bicm0s3*
Recording (5) Tour & Taxis – Jardin Collectif (2021): *https://kuleuven.box.com/s/wjutxbbyctrags68g7vxuow859wdq2ol*
Recording (6) Tour & Taxis – Jardin Collectif (2021): *https://kuleuven.box.com/s/qraofrzzs0gl2mw8qh3e07bjlsuuo1z1*
Recording (7) Tour & Taxis – Jardin Collectif (2021): *https://kuleuven.box.com/s/adtyqe22m9dh6ja5bmahqh6vf23tsh71*

Bxl L28 North - Metro North:


Recording (1) Axis Belgica – Pannenhuis Park L28 - Green Connection (2014): *https://aporee.org/maps/?loc=48353&m=satellite*
Recording (2) Axis Belgica – Pannenhuis Park L28 - Blue Zone (2014): *https://aporee.org/maps/?loc=55459&m=satellite*
Recording (3) Axis Belgica – Pannenhuis Park L28 - Arriving Train (2014): https://aporee.org/maps/?loc=48351&m=satellite

Bxl L28 North - Rail North:


Recording (1) Axis Tour & Taxis - (Old) Bockstael: Bockstael Railway Station Vertical (2021): *https://kuleuven.box.com/s/lovesepituuaiqdtp2d9h0013nr37wsp*
Recording (2) Axis Tour & Taxis - (Old) Bockstael: Bockstael Railway Station Vertical (2014): *https://aporee.org/maps/?loc=48364&m=satellite*
Recording (3) Axis Tour & Taxis - (Old) Bockstael: Bockstael Park (2021): https://kuleuven.box.com/s/zzsjjld27lb48c9quoc6hk7dxx99utua
Recording (4) Axis Tour & Taxis - (Old) Bockstael. Old Bockstael Railway Station (2020): https://kuleuven.box.com/s/8e6myy4xqcu2izxjxjb33k7vdx0uslgl

BXL 28 West - Metro West:


Recording (1) West Metro Area: Beekkant Square – Vibrations (2021): https://kuleuven.box.com/s/gn3szysieg46lg8f3vwezc65pdrw7krf
Recording (2) Beekkant Square Video Surveillance (2021): https://kuleuven.box.com/s/erxixpe52fz4i5pt0ko3kixwid1f1hmq
Recording (3) Beekkant Square Youth (2016): https://aporee.org/maps/?loc=33789&m=satellite
Recording (4) Beekkant Future Zone Biodiversity (2016): https://kuleuven.box.com/s/3hl0lf2f5hrw03tppkrt92xff139g4an

28 West – Rail West:

Recording (1) West Railway Area: West Vertical Infrastructure Space (2016):
https://aporee.org/maps/?loc=33747&m=satellite

Recording (2): West Railway Area: West Video Surveillance (2021):
https://kuleuven.box.com/s/im976vb92rjwagm5pr23e9kviwtwuavt

Recording (3): West Railway Area: West Fence (2021):
https://kuleuven.box.com/s/6ki4h2llxzfu0u6kscnljznxm7bgdugn

BXL 28 West - Park West:

Recording 17: West Park Area – Pedestrian Bridge (2016):
https://kuleuven.box.com/s/k7hll3tiwxsycsw16mi78dkqxszh7cz5

Recording 18: West Park Area – Inside the Pedestrian Bridge (2016):
https://aporee.org/maps/?loc=55461&m=satellite

Recording 19: West Park Area – Park West Outro (2016):
https://aporee.org/maps/?loc=55460&m=satellite

APPENDIX 07 – BIOGRAPHIES

PhD Researcher

Caroline Claus is a Brussels-based urban (sound) researcher. Her work concentrates on the position of (sonic) vibrations in a context of urban development. The ontological turn in sound studies, feminist theory and the avantgarde output of independent electronic record labels provide a conceptual and methodological basis for a-disciplinary research on sonic urbanism as speculative practice. Caroline has contributed to the planning and design of transitory urban railway spaces. She has long term experience in supporting organisations in the social sphere in their organisation of outreach-based community involvement in Brussels urban development processes. Her second book, a collaboration with Q-O2, was published in November 2018. Caroline studied Sociology, and Urbanism and Spatial Planning (cum laude) and is currently doing a PhD at the KU Leuven Department of Architecture.

Supervisor

Burak Pak (Ankara, 1977) is Professor of Architectural Collaborative Design, Collective Spaces and Digital Media at KU Leuven Faculty of Architecture.

He holds a PhD from ITU Faculty of Architecture. After working at Carnegie Mellon University School of Architecture and Texas A&M University VIZLab as a Visiting Scholar, he worked as a post-doctoral research fellow (INNOVIRIS) at KU Leuven Faculty of Architecture on “Alternative Urban Projects for the Brussels Capital Region”. He is the co-founder of the Altering Practices (Alt_Shift) Research Group. He is currently teaching design studio courses and running several international and national research projects in Brussels and Ghent Campuses.

Burak's research covers an interdisciplinary area between architecture and urban design, participation and digital spatial media. The two main and complementary focus points are exploring and enabling bottom-up participation {in} and {through} reflexive research and design practices. His research focuses on enabling inclusion in and through design. Co-creation and co-design plays a central role in the research projects he participates in through which he aims to integrate social design practices, education and research. Examples of the research projects he is involved in are: “Networked Practices for Placemaking" (EC Co-create), “Co-creating & Building Solidary Housing for Homeless” (INNOVIRIS Co-create) and “Incubators of Public Spaces” (JPI-Urban Europe). **http://orcid.org/0000-0002-2901-1032**

Co-Supervisor

Peter Cusack, Research Fellow in Sound Arts and CRiSAP (UAL) Member (2005 - 2021 is a field recordist, musician and researcher with a long interest in the sound environment. Projects include community arts, research into sound and our sense of place and documentary recordings in areas of special sonic interest (Lake Baikal, Siberia). His project Sounds From Dangerous Places explores soundscapes at sites of major environmental damage - Chernobyl exclusion zone; Caspian oil fields; UK nuclear sites. This project continues and is currently researching the regeneration of the North Aral Sea, Kazakhstan. He describes the use of sound to investigate documentary issues as sonic journalism.

Peter Cusack initiated the Favourite Sound Project in London 1998. It aims to discover what people find positive about their everyday sound environment and has since been carried out in Beijing, Berlin, Manchester, Southend-on-Sea, Prague, Birmingham and Taranto. He co-produced the environmental sound program Vermilion Sounds for ResonanceFM, London and was a research fellow on the multidisciplinary 'Positive Soundscapes Project' 2006/9.

During 2011/12 he was a DAAD artist in residence in Berlin, where he worked on the collaborative project Berlin Sonic Spaces that explored the relationship between soundscape and city development.

He has had a long-term interest in improvised music, usually on guitar. CDs include Where is the Green Parrot? (ReR PC1); Your Favourite London Sounds (Resonance); A Host of Golden Daffodils (Platelunch) with Nic Collins; Operet (Rere121) with Viv Corringham; Day For Night (Paradigm) with Max Eastley; Baikal Ice (ReR PC2); Favourite Beijing Sounds (KwanYin 022); Sound from Dangerous Places (ReR PC3&4); Favourite Berlin Sounds (ReR PC5).

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