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Note: The document below is a summary of our Advice Note, **The Sound-Considered City** by Sarah Lappin, Gascia Ouzounian and Rachel O'Grady, published February 2018. If you are interested in receiving a hard copy or pdf version of the document, please contact us at recomposingthecity@gmail.com.

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The Sound-Considered City: A Guide for Decision Makers

The sound-considered city is a more memorable, more vibrant, more sustainable place. In embracing sound as a creative medium, city designers and decision makers can be empowered with a new tool to create the prosperous and healthy cities they aspire to build. Sound can be much more than noise that pollutes. It can positively impact the way spaces are lived in, worked in, and played in for generations to come.

Foreword

This guide has been written by the **Recomposing the City** research group (www.recomposingthecity.org). Based in Belfast and Oxford, our mission is to bring together artists, architects, planners and others in investigating the relationship of sound to urban environments. We support new design and research projects, and we seek to improve the understanding of sound by those who make decisions about cities. Our aim is not merely to reduce unwanted noise in urban areas. Rather, we support creating urban spaces in which sound is considered an essential part of placemaking.

Key to our vision of the sound-considered city is the innovative work carried out by **sound artists**. In some cases sound artists have been tasked specifically with improving urban areas. In other cases their work has had unforeseen positive impacts for cities. Our research shows how artists and designers can effectively 'recompose' the city through sound art.

We have written *The Sound-Considered City* for people who make decisions about cities: planners, architects, politicians, policymakers, developers, community groups and beyond. We hope that *The Sound-Considered City* will inspire you to rethink how sound can play a role in creating your ideal city.

I. Introductory Issues -- How Sound Improves Cities

Economic vibrancy. Sustainability. Healthy environments. Inclusive, democratic societies. These are some of the common goals to which many of us aspire when we envision our ideal cities. For most policymakers and city designers these goals can be met in variety of ways, from better transport networks to sustainable methods of waste reduction, from provision of space for physical exercise to improved access to cultural activities.

What is missing in many planning documents -- what is too often ignored -- is **the way the city sounds**.

Through our research we have found that a **sound-considered city**:

- is a better place to live,
- promotes health and well-being,
- improves educational attainment,
- can generate economic growth,
- is a place where more people feel welcome and comfortable,
- is more inclusive, and
- is a place people remember and with which they can identify.

Introductory Issues -- Sound Beyond Noise

In urban environments sound has principally been considered in its unwanted form: **as noise**, something that pollutes the environment. There is no absolute definition of what constitutes noise. This differs from person to person. Although very loud sounds are likely to cause discomfort, some quiet sounds can be irritating, too. Therefore we cannot determine whether any part of the city sounds pleasant or unpleasant simply through measuring noise levels alone.

In noise policy documents, noise is often categorised as *environmental*, *neighbourhood* or *neighbour* noise. *Environmental noise* refers to noise generated by chronically loud, outdoor sources such as transport and industry. *Neighbourhood noise* is caused by human activities in the community, such as entertainment or construction. *Neighbour noise* is the sound created within a person's home or their neighbour's home.

By contrast, the term **soundscape** denotes a more complete impression of the acoustic environment. The soundscape is made up of everything that can be heard in a particular place at a specific moment in time. The term was popularised by Canadian composer R. Murray Schafer in his book *The Soundscape: Our Sonic Environment and The Tuning of the World* (1977). It is useful to think about an urban area's soundscape in conjunction with its noise levels, in order to imagine the positive as well as the negative potentials of sound in the environment.

Recomposing the City has asked how a consideration of sound, rather than just noise, can help improve urban areas. Indeed, we understand sound as key to a city's vitality. As the soundscape artist and researcher Jacqueline Waldock (2015) has argued, hearing one's neighbor isn't necessarily unpleasant. Rather, being able to hear one's neighbor can make many people feel safe and part of a community. We believe that proposals for urban development should account not only for eliminating or blocking out what is perceived as unwanted noise, but to **promote and enhance positive and distinctive aspects of the local soundscape**.

Introductory Issues -- Policy Context

In the first half of the 20th century it was demonstrated that unwanted noise impacts negatively on health, and policymakers in many countries created guidance to respond to the negative effects of noise. Unfortunately, guidance has been slow to support the creation or integration of pleasant sounds into urban environments, despite overwhelming evidence to show the positive effects such sounds can have (Davies et al., 2013).

The World Health Organisation's *Guidelines for Community Noise* (Berglund et al., 1999) was a key document that provided advice on mitigating the harmful effects of noise in non-industrial areas. The EU's 2002 *Environmental Noise Directive* (END) aimed to achieve the uniform assessment and management of unwanted sound across European cities. Unlike the WHO's *Guidelines for Community Noise*, the END Directive is only concerned with reducing levels of environmental noise (transport and industry sounds). Authorities in EU member states are required to publish **noise maps** and to enact **Noise Action Plans** every five years for towns or cities with more than 100,000 inhabitants, as well as for any major roads, railways and airports. There is also provision for the identification and protection of designated **Quiet Areas**.

Member states have incorporated END into their planning systems in different ways. In the UK, **Noise Policy Statements** provide the policy framework within the wider context of sustainable development. For example, the *Noise Policy Statement for Northern Ireland* (2014) sets out three objectives. These include mitigating the adverse impacts of noise on health and limiting the potential noise burden on local communities. UK local authorities that make planning decisions will take Noise Policy Statements and relevant Noise Action Plans into account.

Noise maps upon which Noise Action Plans are based use noise modelling: estimations that exclude common sources of annoyance such as loud music or alarms. Therefore noise maps can be limited in the impact they can have. If we wish to positively affect well-being through improving the acoustic environment, then we need to consider urban soundscapes in their entirety.

Although planning policy has historically concentrated on the management of noise, recent documents have acknowledged the variety of sounds that make urban spaces unique. *Southern City: the Mayor's Ambient Noise Strategy* (Mayor of London, 2004) recommends that areas identified as having a valuable soundscape be treated individually so as to retain the variety of sounds in the city. Similarly, *Westminster Noise Strategy* (City of Westminster, 2009) stresses the importance of preserving sounds which may have positive associations in shaping the experience of the city. Policy is thus beginning to evolve **from eliminating unwanted noise** towards **celebrating unique sounds** in our environments.

II - Belfast Streets: Analysing Urban Sound

Understanding soundscapes and making recommendations for improving the acoustic environments of cities can seem daunting and beyond many people's technical know-how. However, even the most simple **listening exercises** can tell us a great deal about shared spaces.

In preparing this document we carried out some basic analyses using an inexpensive decibel meter and an affordable audio recorder in a variety of locations in Belfast. While not exhaustive, these methods were enough to clarify aspects of the acoustic environment and highlight areas in need of intervention. **Anyone involved in urban design can use these techniques to inform his or her work.**

We examined the sounds of each location in three ways:

- Using the decibel meter, we took several readings to establish the minimum and maximum noise levels experienced in the location during the exercise.
- We took notes in each location indicating how pleasant it was to have a conversation there.
- We also paid close attention to the quality of sound in each location by making an audio recording for three minutes and taking notes. Listening back to the recording, it was easy to describe the variety of sounds that could be heard in that place and identify the dominant sounds.

When all of this information is put together, we can start to understand both the **unique acoustic character** and the **acoustic problems** of each place. We can pinpoint what sounds should be sustained or preserved and the challenges that need to be addressed through sound-considered design.

Sound Analysis Example

Why is it important to consider sound? Several areas of the city are underused partly because of their poor acoustic quality. Here we show how a simple sound analysis can be carried out with the aim of better understanding an acoustic environment.

The level of background noise on Albertbridge Road in Belfast is extremely high. Traffic noise masks pleasant sounds such as people chatting or leaves rustling. However, there are not many pleasant sounds even beneath the rumble of vehicles – why stop and have a conversation when you can't be heard? The acoustic environment of the Albertbridge Road is caught in a vicious cycle: it will not be more pleasant unless people contribute more positive sounds, but as long as it is an unpleasant place in which to spend time, no new sounds will be created. Reducing traffic noise would quieten this space, but it would not necessarily make it more pleasant. What it really lacks is the **acoustic vibrancy of human activity**. Urban designers could catalyse this through creating **acoustically sheltered places** along the road in which people enjoy spending time.

III - Considering Sound in Nine Core Planning Principles

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In the full document, we address how sound can positively impact urban environments with regard to **nine core planning principles**:

1. Health and Well-Being
2. Connectivity
3. Safety
4. Vibrancy
5. Tourism
6. Economic Growth
7. Shared Space
8. Biodiversity
9. Placemaking

In this abridged document, we will take you through three examples: **1. Health and Well-being, 6. Economic Growth and 7. Shared Space**. We first take you through the streets of Belfast to explore how sound these key issues there. We will show examples of problematic areas as well as positive cases.

We will then guide you through a number of international examples that focus on projects by sound artists who collaborate with architects, planners, researchers and community groups. We chose these examples from a variety of social, political and economic contexts in order to show how widely applicable, and yet locally relevant, the consideration of sound can be.

1. Health and Well-Being

For many cities, improving the health and well-being of citizens is a key consideration in future plans. In particular, many city planners want to promote physical activity through the careful design of streets, parks, residential areas, and workspaces. Simply put, the more active people are, the better their physical and mental health.

Sound can have an enormous impact on whether or not people feel at ease being 'out and about' in their cities. Streets and spaces which sound pleasant can promote physical activity and interaction with neighbours -- both important measures for mental and physical health.

Belfast Example

Belfast's Lower Newtownards Road is a well-used arterial route into the city. However, it struggles to maintain its role as a local high street due to a history of deprivation and political tensions. Belfast City Council has invested millions of pounds on environmental improvements under its *Renewing the Routes* scheme (2004-2016). Although this particular scheme was impactful and well received by local residents and businesses, pedestrian occupation of the street remains low.

While traffic noise masks existing pleasant sounds such as people chatting or birdsong, the variety of sounds beneath the din of traffic is also very limited. There are few places along the pavement where people can move away from the road edge because it is so narrow, making this a particularly unpleasant pedestrian route. With nowhere to sit at a reasonable distance from such high levels of noise, both elderly and very young people could be discouraged from walking along Newtownards Road and will drive into the city instead. The acoustic environment and the walkability of a city are tightly interwoven: points of acoustic respite or acoustic interest along the road could encourage people to walk into the town centre along the Newtownards Road.

International Example

The example of the Newtownards Road in Belfast points to some of the difficulties the acoustic environment can pose in relation to health and well-being. Through the creative consideration of sound, cities might be able to circumvent some of these issues. **Sing City** (2010), a project by Anna M. Kassen in London, is an example of this type of inventiveness.

Kassen's mission in *Sing City* was to 'provide a quick, uplifting break for busy people by reacquainting them with *birdsong* in the streets of London' (Kassen 2010, p. 6). Kassen used widely-available technologies—a website and a mobile phone app—to engage the public in interacting with local birds and birdsong. The website included a **live map** which showed hot spots of activity: if an interesting birdsong was heard on a specific street corner, a user could share this information with others as it was happening.

Sing City aimed to promote physical activity to combat health issues including obesity, heart disease, diabetes, stroke, cancer, osteoporosis, depression and sleep problems. Birdsong was seen as attractive to users because the songs themselves were therapeutic in addition to encouraging physical activity. *Sing City*, developed in conjunction with Lewisham Council, aimed to target **health inequalities** within a context of **very limited budgets**. Key to Kassen's project was evidence that walking outdoors, an inexpensive form of exercise, improved social contact and had a lower dropout rate than the use of gyms.

Kassen's project exemplifies how a creative approach to sound in the city can help combat serious health challenges in an affordable way. As healthcare budgets continue to shrink, one can imagine how sound art projects could improve the well-being of large and varied populations.

6. Economic Growth

When sound is considered by designers, it can add significantly to the economic viability of a city. Oftentimes, this is not an intended aspect of sound installations or soundscapes, but sound can have a profound effect on the economic profile of a city nonetheless.

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Belfast Example

Donegal Street is home to several independent businesses, arts organisations and cultural institutions. It receives less footfall than some of the commercial streets nearby, and so local businesses depend on word-of-mouth to survive. However, our study shows that there are further barriers to economic prosperity caused by the sound quality on the street. Even once you do discover Donegal Street, it is not a place in which you would want to spend time because the presence of cars and buses is so prominent.

The predominant sounds on Donegal Street are all related to traffic. Because the two-way traffic is quite fast-moving and the road is wide, each side of the street feels sonically disconnected from the other. This possibly reduces the number of visitors who walk up and down the street.

However, once a year on Culture Night, the street is filled with the sounds of celebration. On this night the traffic is barred, and the street is filled with stalls, music, and crowds. This is not a quiet sound environment but a cheerful one and also a time when visitors might be drawn to the activity and, in so doing, discover small businesses and organisations like the Belfast Exposed gallery, or the John Hewitt bar.

International Example

Many cities have used cultural activities as a means to boost economic activity. Some, like the Guggenheim in Bilbao, have been enormously successful, while others have been expensive failures. In some cases, art projects that impact on economic activity do so by accident.

As part of the AUS \$9 million George Laneways project in Sydney, a group of artists, designers and sound experts came together to create a sound installation, **Forgotten Songs** (2009-11). Led by artist Michael Hill, this team identified indigenous birds that once inhabited the unloved, forgotten alleyway Angel Place in downtown Sydney. They recorded the songs of these indigenous birds, many of which are now endangered. Hill and his team installed these recordings in 120 birdcages hung across the width and length of the narrow alleyway.

The project is powerful on many levels. It is visually striking, with the birdcages creating ever-changing shadows across what used to be an uninhabited, derelict space. Likewise, *Forgotten Songs* draws attention to the importance of preserving local animal species and the sounds they bring to a city. These sounds are subtle and multi-layered: they have less opportunity to become repetitive and annoying for those who live and work nearby. Perhaps most importantly, they are **local sounds**. These are not noises imported from other environments but instead reflect the history of that specific place.

What the artists did not expect was the significant economic impact of the project. By enlivening this formerly dead alleyway, they created new opportunities for small, independent businesses. After the installation of *Forgotten Songs* business owners decided to open new bars and cafes in Angel Place. The sound art installation brought much-needed footfall, key to the success of small businesses. Thus, *Forgotten Songs* had a significant impact on the area's economic sustainability.

7. Shared Space

Increasingly many designers and policymakers want to ensure that cities have shared spaces for people of different backgrounds, socio-economic groups, ages and abilities. A consideration of shared space must include the physical aspect of how a space is designed and maintained. Sound is critical to creating spaces that will feel welcoming to a variety of groups at the same time.

Belfast Example

Looking at photographs of Hill Street -- narrow, cobbled, and lined with many thriving eateries and businesses -- you might expect it to be filled with events throughout the year. Interestingly, this is not the case. The part of the street we studied is actually very underused, and the businesses and cafes keep their activity inside: it doesn't flow into the external space. Our study found that although the route is not flooded with the din of traffic noise heard in many of Belfast's streets, the car still provides an obstacle to other forms of lively occupation.

Many people are drawn to Hill Street to see the street art. However, this part of Hill Street was not a place where we were able to stop and hold a conversation. Although relatively peaceful most of the time, the intermittent interruption of a car driving past seemed especially loud due to the narrowness of the street. This was more distracting than the constant stream of traffic noise along Botanic Avenue, the loudest street in our study. Although this is an area filled with people sitting outside the numerous bars and pubs, nobody was taking over this particular spot. The small carpark located here adds to the problem. This is a place that could be taken over relatively quickly by the artists, performers and late-night revellers who enliven the nearby Entries. Alternatively, it could become a place shared by those escaping the noise of the bars. However, the space swings uneasily between quiet and very loud, which is unpleasant for either group.

International Example

The **Voice Tunnel** (2013) project by artist Rafael Lozano-Hemmer in New York City exemplifies how cities can collaborate with artists to enable diverse publics to enjoy shared spaces. The installation, sponsored by the Department of Transport's Summer Streets programme, opened the Park Avenue tunnel to pedestrians. The installation featured 300 spotlights activated by people's voices. The artist described this as 'tuning into people's different realities to create... a concert of voices inside the tunnel, all live, all crowdsourced, all what people wanted to say' (Lozano-

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Hemmer 2013). The project allowed users to experience a space normally devoted to vehicular traffic. For one long-time resident, the project 'made me see another part of the city in a wonderful way.'

The artist says that he wanted to 'create an experience that would bring people together, that would create a sense of choir, of people speaking not just to each other but also to their city.' Not only were thousands of people part of the shared experience, but the fact that the voices reflected so many different **accents and languages** also showed how diverse the city is.

The shared aspect of the installation was crucial to attracting thousands of participants. For Lozano-Hemmer, the sound of all the voices coming together gave the 'sense of a party, a lot of people speaking at the same time... a very urban experience'.

Voice Tunnel is an example of how **creative stewardship of sound** can bring people together and enable people to understand their cities and each other in new ways.

IV - Key Points

1. Acoustic environments can significantly improve—or negatively impact upon—living and working conditions. Sounds can attract and repel people, whether tourists, residents, or any member of the public. Planners and decision makers **must take the acoustic environment into account**.
2. A person **does not need to be an expert acoustician** to understand a sound environment. In our study we show how a simple listening exercise that can be done anywhere can reveal a great deal about the acoustic environment.
3. Urban sound is typically characterised in negative terms: **as unwanted noise**. We aim to show how **creative uses of sound** can increase the vibrancy and vitality of urban spaces.
4. **Noise maps**, while useful, do not tell us which parts of the city are acoustically pleasant. **Noise levels** do not necessarily correlate with economic growth. However, **positive sounds** do strongly correspond to vibrant cities. Noise maps should be used in conjunction with other kinds of sound analysis that reveal the positive aspects of a soundscape.
5. A public space is most successful when designers anticipate and encourage human activity, providing **formal and informal** places to meet and interact, and places to sit and listen. In order for public spaces to flourish, sound must be a key consideration in their design.
6. **Simple design solutions** can vastly improve acoustic environments. Our study shows how small interventions such as planting mature trees and widening pavements can have enormous impact on an acoustic environment and thus the public's ability to inhabit and enjoy a public space.
7. The acoustic environment is crucial to the design of **walkable streets**: if there is no respite from loud traffic noise then people might be discouraged from walking along a route. Preferably a walk would sound so good that it would encourage people to walk more.
8. The **distinctiveness of local soundscapes** is something that city planners and decision makers should support and celebrate. Local soundscapes can be studied, preserved, and more carefully designed. Unique elements in the soundscape can substantially add to a city's character.
9. Sound should be a key part of any **urban design analysis**, and it should be included in local development plans at multiple scales.
10. Sound can be much more than noise which pollutes. Sound can make a **considerable positive impact** on how spaces are lived in, worked in and played in for generations to come. Our study has shown that this positive impact can be seen in such varied domains as: biodiversity, economic growth, safety, health and well-being, accessibility and inclusivity. Sound is essential to the creation of **vibrant, vital cities**.

References

Berglund, B., Lindvall, T. and Schwela, D.H. (1999). *Guidelines for Community Noise*. Geneva: World Health Organization.

City of Westminster (2009). *The Westminster Noise Strategy*. London: City of Westminster.

Davies, W.J., Adams, M.D., Bruce, N.S., Cain, R., Carlyle, A., Cusack, P., Hall, D.A., Hume, K.I., Irwin, A., Jennings, P. and Marselle, M. (2013). 'Perception of soundscapes: An interdisciplinary approach.' *Applied acoustics*, 74(2), pp. 224-231.

Department of the Environment, Northern Ireland, (2014). *Noise Policy Statement for Northern Ireland*. Belfast: Department of the Environment.

European Commission (2002). Directive 2002/49/EC of the European parliament and the Council of 25 June 2002 relating to the assessment and management of environmental noise (Environmental Noise Directive), *Official Journal of the European Communities*, 189(12), pp. 0012-0026.

Mayor of London (2004). *Southern City: The Mayor's Ambient Noise Strategy*. London: Greater London Authority.

Kassen, A.M. (2010). *Sing City*. Masters of Design Innovation and Creativity in Industry Service Design Thesis Report. Available at: https://issuu.com/icarr/docs/ak_singcity (Accessed: 24 July 2017).

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Waldock, J. (2015). 'Hearing Urban Change' in L. Black and M. Bull (eds.), *Auditory Culture Reader*, 2nd revised edition, London: Bloomsbury Academic, pp. 151-162.

Schafer, M. (1977). *The soundscape: Our sonic environment and the tuning of the world*. Vancouver: Destiny Books.

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