On the Seminar «Acoustic Quality of Urban Spaces»: Outline for a Future Filled with Sounds and Experiences

Report on the FOEN Seminar held from 29 to 30 September 2016 in the Ackermannshof, Basel

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Report commissioned by the Federal Office for the Environment (FOEN), Noise and NIR Division, by Sabine von Fischer, 14 October 2016.

Imprint

Commissioned by: Federal Office for the Environment (FOEN)
Noise and NIR Division
CH-3003, Bern

The FOEN is an agency of the Federal Department of the Environment, Transport, Energy and Communications (DETEC).

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This report was prepared under contract to the Federal Office for the Environment (FOEN). The contractor bears sole responsibility for the content.

1. The Focal Points of the Experts' Seminar

Experts from the fields of acoustics, urban planning and environmental protection from six European countries met on 29 and 30 September 2016 for a seminar on the «Acoustic Quality of Urban Spaces». The exchange of experiences and ideas took place in the Druckerei, a former printmaking facility, in the Ackersmannshof in Basel, providing an architecturally stimulating setting that was conducive to the calibre of the 14 input presentations. The speakers from environmental authorities and private consultancy offices for noise abatement and environmental design addressed invited guests, many of them from management authorities (the Fachverband Schweizer Raumplaner – Federation of Swiss Urbanists / FSU, the Verein für Landesplanung – Regional Planning Association / VLP, the Bundesamt für Raumentwicklung – Federal Office for Spatial Development / ARE), thus comprising a well-informed and discerning public. The event was hosted by the Noise and NIR Division of the Swiss Federal Office for the Environment (Bundesamt für Umwelt, BAFU / FOEN), whose representatives conducted the seminar.

The inquiry was divided into three subject areas: «Acoustic Quality and Planning Tools» (session 1), «Laws, Regulations and other Implementation Options» (Session 2) and «Future Operations and Research». Correspondingly, the exchange of ideas between the experts ranged not only over national boundaries and disciplines, but likewise across the various phases of the planning and management processes – from the quantitative and qualitative tools to the necessary policy scope and to the further needs for research and action.

The seminar was less about trying to find a final consensus and was more an exercise in searching for new horizons. The openings and conclusions of the presentations consisted of urban planning and artistic positions, based primarily not on noise abatement techniques but instead on multidisciplinary strategies and creative processes. A sound walk was undertaken at the end of the seminar that provided the speakers and guests with unexpected auditory experiences, ensuring that not only the contents of the expert presentations and the discussions accompanied them back home, but likewise that a lasting effect of the seminar was an increased awareness of the issues involved.

2. Overview of the Contributions

In his welcome speech, Urs Walker, the head of the Noise and Non-Ionising Radiation Division, recalled that the Federal Office for the Environment (FOEN) had accumulated over 30 years of experience in noise reduction. The search for up-to-date and sustainable ideas had been begun with the issuing of a parliamentary mandate to ready a noise abatement plan for the coming generation. The current seminar was being held with acknowledged experts from at home and abroad so that the discussions in Switzerland could benefit as greatly as possible from the exchange of ideas.

To this end Urs Walker shortly outlined the legal foundations of noise abatement in Switzerland, defined on the one hand by health protection provisions and noise emission safeguards, and on the other by spatial planning stipulations requiring new forms of urban development. In many cases the densification of the built environment contradicts the provision that building permits should not be granted for sites affected by high noise levels. Nevertheless, building permissions are rarely blocked in their entirety, meaning that the conflicting requirements often simply result in poor compromises. For this reason noise abatement in Switzerland needs to find and pursue new avenues.

A key question running through all of the contributions and each of the subsequent discussions – all judiciously chaired by Fredy Fischer, the head of the FOEN's Railway Noise Section – was the role that noise exposure thresholds could potentially play in this discrepancy between noise emission safeguards and densification. Which additional criteria could effectively supplement the existing permitted noise emission limits? Who are the key parties in the legislative and enforcement processes, and what contributions could they make? How much leeway and how much political leverage are required to assist in the promotion and realisation of best solutions?

By way of an introduction, Trond Maag, the FOEN staff member responsible for urban sound environment and spatial planning, presented a number of guiding questions. Following each of the three sessions the participants formulated their personal answers as key messages on a large sheet of paper. Members of FOEN staff then took of all of these answers and arranged them into a wall-spread of seminal ideas, extracts from which are reproduced here (see appendix: Key Messages).

One outcome of the seminar can be already pre-empted at this juncture in the report, namely that the European representatives undoubtedly gained as much from the proceedings as their Swiss counterparts.

Session 1: «Acoustic Quality and Planning Tools»

How do you establish and promote the (acoustic) quality of urban spaces?

How do you apply (acoustic) urban quality in your daily work and research?

Which planning instruments do you use and how do you implement quality targets?

Session 2: «Laws, Regulations and other Implementation Options»

Which legal stipulations and codes do you regard as being particularly expedient and promising in terms of meeting quality targets for public space?

Which stimuli and mechanisms are best suited to realising quality targets?

Session 3: «Future Operations and Research»

Which aspects of the urban sound environment are currently too under-researched?

What is still lacking in order to make acoustic quality targets realisable?

2.1. Session 1: «Acoustic Quality and Planning Tools»

The interdisciplinary thrust of the seminar was underscored by urban planner Philipp Krass in the first of the 14 input presentations. The urban planner substantiated his call to deal with noise issues in conjunction with other aspects by referring to the compound human effects: respite from light and noise emissions often coincide and are interdependent. Therefore quiet should not be viewed as an isolated factor. Moreover, noise cannot be treated as singular because commercial, industrial and private residential parties enjoy equal protection rights. This means that noise problems always have to be negotiated at multiple levels. In any case, noise abatement often correlates with other aims and profits from synergies with climate protection measures against climate change, landscape planning or air quality; and above all such measures are more easily financeable in tandem. Since their large infrastructure project in the Ruhr region, Krass' planning office has chosen to describe this phenomenon using the memorably term «piggy-back planning» – in other words to exploit the acoustic quality opportunities represented within the framework of large-scale planning projects.

Philipp Krass of berchtoldkrass space&options in Karlsruhe is a spatial and urban planner with a wealth of experience in interdisciplinary and complex planning, as well as in implementation strategies for neighbourhoods, towns and cities and regions.

Nevertheless, «good acoustic quality is neutral»– only bad quality gets noticed. «Places of quiet», as defined by Krass, are possibilities to «withdraw from what is protractedly felt to be an annoying noise backdrop». The idea of providing compensation and alleviation appeared repeatedly throughout the seminar. In this initial presentation it was accompanied by the suggestion of a spatial typification distinguishing between larger areas (residential surroundings, recreational areas), contained quiet spaces (public squares or courtyards and stops) and linear quiet zones (route-link corridors, non-motorized transport axes). What was important, stressed Philipp Krass in elucidating examples of the three types, is the permeability of the urban fabric, which, incidentally, was likewise shown by the FOEN-commissioned case study *Hard-Letzi, Zurich* (2015) undertaken by Feddersen & Klostermann.

As far as the term quiet spaces or quiet zones are concerned, it is appropriate to mention the later comment by Jean-Marc Wunderli, who in the concluding discussion proposed jettisoning the terms «quiet» and «quiet spaces» in favour of «recreational space» or «leisure space» as these were better suited to also encompass the masking and compensatory effects. The calls for further interdisciplinary promotional instruments (Margit Bonacker) and for an examina-

tion of the causes of good quality in the showcase examples (Regina Bucher) likewise demonstrated the urgent need for a better inter-linkage between what are often monothematic investigations.

«It's perfectly acceptable that quiet spaces are also occasionally noisy», argued Margit Bonacker in the next presentation. An urban sociologist who studied psychology, she outlined that only 25 per cent of noise complaints are caused by actual sound levels; most cases have a purely psychological explanation. The criteria for public spaces vary greatly, with numerous factors, ranging from cleanliness to the length of time spent in a place, playing a role. Whereas children and adolescents are never complainants, older people are increasingly intolerant of noise. Nowadays numerous local participatory instruments take only particular groups into account, for instance the «noise forums» held within the framework of German noise action planning where most of those who attended were male and middle-aged. As an alternative, the native of Hamburg presented the «Beteiligungsmobil» (participation mobile, BETmobil) that goes to where the people themselves are and so gathers opinions from children, adolescents and women. Further instruments in the participatory processes are on-site area visits and bicycle tours with over one hundred attendees and surprising results – for example in the case of a planned route where children came up with the best suggestions! Participation takes place both online and offline, ideally in combination in order to reach as many people as possible. Information is the first key to a solution, reported the sociologist, based on her own trove of experience: those people who are informed in advance are better able to accommodate noise.

Margit Bonacker heads the research and consulting firm konsalt in Hamburg. Her projects include municipal business and economic promotion or social planning, procedure supervision, municipal marketing and participation processes.

Questions as to who participates, how, when, where and in what (Philipp Krass), and how active participation is best achieved (Georg Thomann and Rikke Munck Petersen), sparked a lively discussion, showing the considerable curiosity but also uncertainties from amongst the audience. Margit Bonacker noted that it was practical to limit the timescale of such procedures to between a quarter and three-quarters of a year. What can such participatory processes achieve (Jean-Marc Wunderli)? The opportunity to take part also produces behavioural changes, was the response, for instance in people switching from the car to a bicycle. And how do we determine what people like to hear, and had there ever been people who yearned for more sounds or noise (Peter Cusack)? The second question was answered with an unequivocal «no» by the urban sociologist. The first question was more difficult: the soundscaping approach, for instance, is based on the sound of water and birds, whereas the case in question undoubtedly meant accommodating various different user groups. The comparison between listening and the sense of taste provides a good illustration of the correlations involved: just as food has less taste when served at high temperature, so tones at lower sound levels are in general perceived with a greater differentiation (Itziar Aspuru).

Jakob Fryd's curiosity had been awoken by the findings of two recent Danish studies that found that motorways are perceived as more of an annoyance than roads in cities with an

identical sound level.[1,2] This talk, the first given in English, presented a socio-acoustic study involving 6000 responses that set out to verify and explain these results and to compare them with the EU dose-response values.[3] The first aim was achieved and the results were confirmed. The second, on the other hand, proved to be problematic, and later also led to an animated discussion during which some of the experts expressed their surprise and many speculations were made as to why a distant roar (devoid of any visible sound source, etc.) should be more annoying than a nearby hum (potentially a person's own neighbour who could anyway be heard, etc.). A number of technically well-versed acousticians came up with various conjectures that one might otherwise have more expected to hear from sociologists. However, these suspicions proved impossible to resolve as none of the studies had recorded whether those affected by the motorway noise (predominantly single-family homes) or the city dwellers affected by the noise of the road (predominantly multiple-family homes) owned or rented the properties, or whether they used a motor vehicle themselves. Fryd agreed that both the attitude and the age of those surveyed could potentially play an equal role, for instance that city dwellers might themselves be road users. Both during daytime and at night, a motorway emits «noise caused by others», whilst the noise of a street roughly corresponds to a daily rhythm. Fryd added, unable to suppress a slight smile, that such cultural factors, which scientific inquiries had failed to fully capture, might well explain the discrepancy between the Danish survey and the EU values.

Jakob Fryd works for the Danish Road Transport Authority in Copenhagen in the Department of Road Planning and the Environment where he is responsible for the formulation and implementation of noise strategy and the realisation of noise reducing measures.

Therefore, although there is no conclusive explanation for the 11 dBA difference (up to 20 per cent) between the heavily affected residents in the vicinity of the motorway and the heavily affected city dwellers close to roads, in terms of typology there is a clear finding: by comparison, residents with access to a quieter side of a house tolerate on average a 14 dBA higher level than those who live in freestanding housing, in other words are subject to all-round sound emissions. Jakob Fryd concluded from this that the acoustics in outdoor spaces have to be controlled in the same manner as indoors, and noted that Swedish implementation practices already operate using differentiated models for front and rear facades.[4]

[1] *Forskel mellem genevirkning af motorvejsstøj og støj fra andre veje*, Danish Environmental Protection Agency, Arbejdsrapport no. 1 (2013). http://www.acoustics.asn.au/conference_proceedings/INTERNOISE2014/papers/p478.pdf.

[2] Hans Bendtsen, Torben Holm Pedersen, Guillaume Le Ray and Jørgen Kragh , «Noise Annoyance for a Motorway Compared to Urban Roads», InterNoise 2014. http://www2.mst.dk/Udgiv/publikationer/2013/02/978-87-92903-95-2.pdf.

[3] Vejdirektoratet / Danish Road Directorate, *Noise Annoyance from Urban Roads and Motorways*, Report 565-2016. http://www.vejdirektoratet.dk/DA/viden_og_data/publikationer/Lists/Publikationer/Attachments/918/Noise_annoyance_from_urban_roads_and_motorways-report565.pdf.

[4] Anne Hallin, Claes Halling, Magnus Lindqvist and Leif Åkerlöf, *Trafikbuller Och Planering V* (2016). http://www.lansstyrelsen.se/Stockholm/SiteCollectionDocuments/Sv/publikationer/2016/trafikbuller-och-planering-5.pdf . The Swedish model also provides a more nuanced points system for noise in indoor and outdoor spaces that takes into account the alignment of the spaces, accessibility to recreational zones, etc.

The presentation by the landscape theorist and planner Rikke Munck Petersen opened with a film: the sound track wanders from the roar of traffic to the sound of the wind, the film track from the metro to a meadow with sheep, whereby cultural landscapes are repeatedly transformed into natural ones by means of montages. The film demonstrates – often using the substitution of bucolic scenes in juxtaposition to infrastructure and built environments – how visual and acoustic perceptions shape each other. The main argument of the presentation was that our perception is multi-sensory. In order to emphasise this audio-visual interplay, Rikke Munck Petersen made use of the term synaesthesia – not in the narrow sense of a psychological disposition, but rather in a more general sense in that each and every one of us has a different auditory impression when facing a row of trees than when facing a wall of a building. The speaker also pointed out the kinaesthetic effect in the interplay of movement and experience, a phenomenon that is better scientifically researched than synaesthesia. In her synthesis of phenomenology, cartography and media and landscape theory, as well as planning practice (in relation to the urban-planning theorist Neil Brenner, the geographer Doreen Massey and the philosopher Gernot Böhme), Rikke Munck Petersen revealed the potential impact of the environment on the emotions and how these interactions act to multiply the complexity of this force far more, in the case of sounds, than can be registered by purely quantitative measurements.

Rikke Munck Petersen is an assistant professor in the field of landscape architecture and landscape planning, her key focus being the multi-sensory analysis of landscape transformations. She is the proprietor of the mupLA landscape studio, which has won numerous awards.

In film footage shot using drones, the landscape theorist demonstrated the potential for future research, whereby landscape and humans could be dynamically examined in motion and in the most varied of scales. As a traditional multi-sensory medium, she sees a great capacity in film to assess the built environment as social space, both in close-ups and from a bird's-eye perspective. The need to clarify the terminology in such trans-disciplinary approaches was particularly evident in the English words «performance» and «performativity». The speaker used them in the sense of the social scope for action by subjects – an unfamiliar usage for most of those present when the majority of engineers would use the term «performance» differently, for example for effectiveness in mechanical processes. Happily the seminar participants were interested in the interchange of ideas, and the questions exclusively concerned how the combination of differing (and disciplinarily shaped) approaches could lead to the formulation of new ideas and instruments.

The last speaker in the first session «Acoustic Quality and Planning Tools» was the seminar organizer himself, Trond Maag. In his presentation he advocated that strolls or walks should be an instrument in urban planning. Not just the contrasts, but likewise the possibilities that lie between our acoustic wishful thinking and everyday realities, reveal themselves only through the act of purposefully going out and listening to real sounds. The urban acoustician and spatial planner described these two poles as the framework for action in noise abatement. Using the sound walk as a tool,

Trond Maag is responsible for urban sound environment and spatial planning for the Swiss Federal Office for the Environment. In addition he is involved in questions of sound quality and quality of living in urban areas.

these contrasts and the potential they embody become perceptible and describable at manifold levels.

The speaker likewise elucidated his propositions with a number of examples, in particular the project for a new football stadium on the Hardturm site in Zurich where he demonstrated the significance of a permeable urban fabric in a situation dominated by heavily used traffic routes but similarly characterised by its proximity to the river Limmat. The planning studies emphasised the lateral connections and corridors between the river and the planned overall structure of the stadium, additionally designed to be flanked by two office towers and two apartment complexes. The example of the controversial and still-pending top-down case study in Zurich was contrasted with the success story of a bottom-up initiative in Rotterdam. The latter case was a crowd funding in which an extensive network of wooden jetties stretching from the main station out to what were previously isolated industrial sites created opportunities for the local inhabitants to simultaneously create their own sound quality, for instance with a planted roof terrace on a previously inaccessible building – in other words a site that despite not being drawn on any noise map nevertheless represents a distinctive quiet zone.

Trond Maag called for a heightened awareness of context that transcends the preoccupation with the sources of noise emissions. His presentation was in a sense the most direct response to the aim formulated by Urs Walker in his seminar opening to find a noise protection strategy to serve the next generation. Trond Maag concurred with the objection that listening was as equally fraught with risks as measurements (Christian Popp), adding that the ultimate objective was to combine the currently existing instruments.

2.2. Session 2: «Laws, Regulations and other Implementation Options»

The start to the afternoon session was given by Christian Popp, who delivered three fundamental observations about (interdisciplinary) cooperation: (1) it has to be premised on good communication and a shared terminology; (2) it has to be based on a recognition that «noise» is strictly speaking a subcategory in traffic, and that the annoyance with traffic is only partially caused by noise; and (3) that it is essential to make the acoustic parameter evident in a numerical definition, otherwise all efforts to reduce noise emissions remain redundant. Christian Popp illustrated the dilemma that a dBA designation is inadequate using picture/tone sequences of various different situations – from an airplane in the sky to the sound of tyres on a motorway, from ship motors and horns to playing children with the sound of a siren in the distance, from the twittering of birds to the squealing of bicycle tyres. The examples made it evident that although regulations are expressed in terms of limits and thresholds of loudness, these very different qualities are in fact very difficult to compare in dBA.

Christian Popp is the director of the firm Lärmkontor in Hamburg, which along with wide-ranging engineering assignments provides leading expertise in the field of noise protection, and is also dedicated to research and development.

As far as the question of a desirable legal basis for acoustic qualities in public spaces are concerned, Christian Popp – who through his own previous experiences is well acquainted with the problem of regulations and their implementation in everyday public-authority life – offered three proposals:

1. noise-sensitive spaces should be oriented away from noise sources;
2. in terms of urban planning, buildings should be arranged (e.g. via self-screening) so as to create the greatest possible portion of quiet facades; and
3. building facades should be designed to have the greatest possible absorption effect.

As was explained, there are numerous existing examples for both of the first two proposals where it has been possible to create inner courtyard situations, including retroactively, for example by means of closing building rows. This immediately prompted the first query in the discussion: was in not the case that closing housing rows simply made streets and therefore public spaces louder (Philipp Krass)? Undeniably, agreed the speaker, the key is to act judiciously to ensure that such interventions do not worsen the situation; nevertheless, practice had shown that an increase of 4 dBA in streets had been offset by a reduction of 20 dBA in the newly created inner courtyards. The third proposal had, admittedly, been sparsely researched in urban contexts to date: absorbing surfaces could potentially reduce exterior reflections by 3 to 4 dBA and could lower a large proportion of the higher frequencies; plantings and constructional folding and profiling could likewise have acoustical advantages. Nevertheless, these measures still required the clarification of a number of factors such as the essentials, additional costs and above all the scope for action in the planning requirements. Ultimately Christian Popp found that there was an ambiguity in counteracting what has become a ubiquitous problem of reverberant surfaces by means of legal codes. The presentation ended with six summary guidelines:

- clarify and explain
- initiate changes in behaviour
- intervene technically at the sources
- amend planning regulations (keyword "quiet areas")
- amend building regulations (keyword "reverberant surfaces")
- amend emission protection controls.

In a brief glance back into the past Christian Popp took the cover of Hans Bernhard Reichow's 1959 book *Die autogerechte Stadt* (The Car-Friendly City), showing that criticisms of the noise-polluted city had already been articulated long ago. His own critique, in finishing, was that the EU's current guidelines nevertheless simply adhere to what is considered feasible, whereby what precisely «feasible» constitutes still remains to be proven!

It was therefore apposite that the next speaker came from the EU. Colin Nugent described the problem of noise as part of a larger complex of environmental issues that are subject to close scrutiny by the European Environment Agency (EEA), which formulates responses, including solution proposals, for urban development. Noise mappings are designed to assist in reducing noises as much as possible where required and to retain sound quality in those

places where it is good. According to the findings of the report *Noise in Europe*, the EEA's most recent comprehensive publication, 125 million people are exposed to a noise level of over 55 dBA based on the standards set out in the L_{den} of day to evening (+5)/night (+10).[5] As far as the methods of noise mapping based on the EU's Environmental Noise Directive are concerned, Christian Popp remarked that he considered it very unfortunate that by definition the methods only incorporated heavily exposed streets, when in fact streets that were far less affected could still generate high noise levels, for instance if tightly built-up or due to paving and tarmacing. The EEA representative concurred that mapping noise sources separately was a problem: the separate method is best suited to non-urban areas, whereas above all in urban areas with a considerable noise mix global mappings make sense. Do EU noise maps also chart auditory experience (Esther Casanova)? The question was meant rhetorically, and although it was answered with a «no» it nevertheless did not go unheard. The focus of the second session was a search for instruments. The widely used noise maps may well give the impression of providing a comprehensive overview, but ultimately they only delineate a fraction of acoustic reality.

Colin Nugent works for the European Environment Agency (EEA), where he is responsible for the delivery of reliable and independent information on environmental issues, including «Noise Reporting and Assessments».

Colin Nugent also described the situation in his own country, commenting that «spaces that were tranquil and calming but were not necessarily in an acoustical sense quiet» were important for Dublin's inner city. For a year Dublin had hosted a project that had received the European Soundscape Award (which incidentally went to seminar organiser Trond Maag in 2013!) that involved the selective acoustic enacting of public space via adjacent businesses such as cinemas, cafés and shops.[6] Colin Nugent's career had taken him, so to say, from the frying pan into the fire, from Dublin's soundscape to model Copenhagen, which was praised during the discussion for being the only European city to have publicly announced their intention to give priority to pedestrians and cyclists, and to have said that cars were no longer welcome. Not even the Netherlands could match this, agreed the participants from Rotterdam and Utrecht, who shortly afterwards addressed the seminar.

Henk Wolfert began his presentation by noting that noise policy required a holistic approach. Current political agendas encompass noise, but nevertheless the implementation of potential measures remains in abeyance. The environmental strategist counselled a combination of quantitative and qualitative methods: sound measurements, residents' surveys, expert analyses and sound walks. Using the project **QU**iet **A**reas **D**efinition and **M**anagement in **A**ction **P**lans (QUADMAP)[7] conducted in Bilbao, Florence and Rotterdam, he showed that such combinations were realisable. What was crucial, emphasised Henk Wolfert, is that Quiet Urban Areas (QUAs) are not only

Henk Wolfert is employed by the Regional Rotterdam Environmental Protection Office (DCMR Rotterdam), responsible for strategic management and European and international environmental policy.

[5] European Environment Agency, European Topic Centre on Air Pollution and Climate Migration and Colin Nugent, *et al.*, *Noise in Europe 2014*, EEA Report no. 10/2014. http://www.eea.europa.eu/publications/noise-in-europe-2014. According to Colin Nugent, the next report (scheduled for 2017) will address the issue of participation in greater detail.

[6] European Soundscape Award 2014. http://www.eea.europa.eu/highlights/reducing-noise-pollution-success-stories.

[7] http://www.quadmap.eu/. The final technical report, LIFE / QUADMAP, *Final Report Covering the Project Activities from 01/09/2011 to 31/03/2015* (June 2015), LIFE 10 ENV/IT/4017, can be downloaded from this webpage.

quiet, but are also used! Questions such as «who comes when and why to the park? » are key to the QUADMAP approach. They operate at diverse scales, as he explained referring to two examples in Rotterdam – the small neighbourhood park Schat von Schoonderloo (Pocket Park), where people can pause, and the large Zuider (South) Park, a leisure and recreational area.

How the European QUADMAP programme is realised is left to the individual countries and cites.[8] The aim is that the implementation becomes incorporated into planning guidelines. Henk Wolfert expressed himself cautiously about controls and prohibitions, choosing instead to stress that promotion played a greater role: what was required was an awareness for the subject and implementational assistance within the already existing regulations.

Two important ancillary considerations were broached during the discussion: first the necessity for quiet link corridors between the QUAs, and second that the sites were subject to long-term public influence (Margit Bonacker). The QUAs should neither generate more motorised transport in order to reach the parks, nor should they act as a stimulus for prestigious new building projects in upgraded neighbourhoods. It was evident to all of the participants that there is a considerable need for action, including from politicians, regarding acoustic quality.

Transnational collaborations such as QUADMAP, but likewise the seminar in Basle, are also diplomatic endeavours to work together rather than in opposition to each other. Chair Fredy Fisher ended the day's proceedings by emphasising the element of togetherness and calling for a spirit of analysis commensurate with the dimensions of the problems, after which he extended the invitation to the joint evening meal.

2.3. Session 3: «Future Operations and Research»

The focus on highly noise-affected areas, according to Jean-Marc Wunderli in the first presentation on the second day, reduces acoustic measures to an exercise in damage control. Only with a focus on public space, such as that adopted in the seminar, was it possible to approach the question of acoustic quality. A public-space horizon opens up new areas of action, for example for acoustic design, even in those cases where limits are not satisfied. What at first glance appeared to be a form of acoustic activism revealed itself on closer examination, and in light of the spatial-planning imperative of densification, to be a pragmatic stance.

Jean-Marc Wunderli is the deputy department head for Acoustics and Noise Control at the Swiss Federal Laboratories for Materials Science and Technology (Empa) in Dübendorf, and is a lecturer at ETH Zurich.

[8] «Current practices about selection, assessment and management of Quiet Areas in EU Countries, though regulated by the EU Directive 49/2002/EC on Environmental Noise (commonly abbreviated END), appear to be extremely fragmented and inhomogeneous. Each country during past years has adopted a set of strategies strictly related to their specific contexts; as a consequence strategy transfer among EU Countries is now a hard task. The main objective of this project is to develop a harmonized methodology for selection, assessment (combining quantitative and qualitative parameters) and management (noise mitigation, increasing of usability of areas and user's satisfaction) of Quiet Urban Areas (QUAs), the aim being to overcome the current impasse. » Ibid., p. 4.

Therefore the second day began again with Urs Walker's opening introduction on the contradiction between noise protection regulations and urban densification. Jean-Marc Wunderli identified two forces for the improvement of acoustic quality in public spaces: on the one hand the market (attractiveness enhancement and location quality), and on the other legislators (reduction in the negative impact of noise). His first hypothesis was that sound design has to be made objectively describable, only then could it become a political feasibility. Many questions still remain unanswered regarding the impact on people, such as the correlation between the perception of loudness, annoyance and disturbance. The second hypothesis concerned social factors, namely that differing target groups have differing demands. The third hypothesis was that acoustic annoyance can be reduced by means of suitable visual design, whereby further research was required into this aspect, as was likewise needed for the fourth point, namely that adverse effects at one location could be compensated for by relief at another. This last point, as Jean-Marc Wunderli cautioned, raises major legal and administrative issues when spaces with mixed purposes and owners are subsumed into a single context.

Such compensatory effects still lack the necessary scientific proof, leaving this presentation to again close with a call for interdisciplinary approaches. The discussion revolved around the Swedish model (Jakob Fryd), Dutch recommendations to make allowances for quieter rear facades (Miriam Weber) and the provocative Swiss proposal that the surplus-value trade-off written into the new spatial-planning act be used for quiet oases (Esther Casanova). The effect that views out over vegetation had was mentioned so often that Fredy Fischer moved on to the next presentation with memorable sentence «better a tree in front of the house than to have sawdust for brains».

The physicist Itziar Aspuru has spent many years engaged in multidisciplinary scientific research, in particular into the quantitative determination of comfort. She cited the fact that the stress-reducing and calming effect of public space has already been referred to in a number of UN Habitat reports, albeit, she added, minus any reference to acoustics. This, in her view, is a research deficit. She has variously contributed to filling this omission, including with a definition of the indicators for acoustic and thermal comfort. The acoustic comfort indicator ESEI was developed by Tecnalia in Bilbao, which taken together with the thermal comfort indicator PET, an index for light quality and the index for the subjective analysis of urban comfort permits scales that are also understandable for laypersons.[9] The four variables in the algorithmic ascertainment of the ESEI are the congruency of sound/landscape, physical characteristics (including colours), acoustic measurement data, and sound sources. The variables are to be expanded in the future to include factors such as proportionality, aesthetic quality and smell.

Itziar Aspuru is responsible for the research focuses energy, acoustics, environment and geography with the interdisciplinary, private and non-commercial research centre Tecnalia research&innovation in Bilbao.

[9] The Environmental Sound Experience Indicator (ESEI) quantifies the acoustic comfort perceived in an acoustic environment. It is calculated by measuring noise levels, detecting acoustic events evaluated as positively or negatively perceived. The physiological equivalent temperature (PET) is a universal index for the bio-meteorological assessment of the thermal environment. PET is defined as the air temperature at which, in a typical indoor setting (without wind and solar radiation), the heat budget of the human body is balanced with the same core and skin temperature as under the complex outdoor conditions to be assessed.

Those involved in the Tecnalia research centre would appear to have no trepidations about interdisciplinary alliances, although the researchers are at the same time thoroughly aware of the problem that any such evaluations are often rejected as subjective and vague. Using measurements and mappings Tecnalia attempts to transpose these parameters into objective scales, as Itziar Aspuru illustrated using the example of Bilbao's La Torre Square where a low wall with water fountains was built in order to reduce the noise level. According to the researcher's report it was these measures that produced an improved acoustic quality: more people visited the square and their presence generated positive acoustic textures, namely the sounds of voices against the splashing sound-backdrop of the fountains on the street. Itziar Aspuru was also part of the QUADMAP project, and encouraged the seminar to «think European, act locally». Research projects undoubtedly gain greater credibility with references and team members from abroad, but they should nevertheless be elaborated and implemented locally.

The speaker was bombarded with questions, the reactions from the spatial planners and representatives from the management offices showing just how new the idea of a comfort indicator is. How can aesthetic qualities be measurable, and how can personal experiences be factored into the planning process (Rikke Munck Petersen)? The juncture at which acoustic readings become relevant for planning was particularly hotly debated, whereby two schools of thought emerged. The one argued that detailed data like this should assume an importance in later phases. The other maintained that the scope was far greater than is commonly assumed, proposing that a design competition based on quantified environmental factors should be held as a test case – the spectrum of solutions that could be expected to emerge from such a process could help in bridging the differences between technical, social, design and policy viewpoints (Philipp Krass).

Miriam Weber described her own everyday life to show what urban quality of life can be – a view of the tree tops from her home, riding to work on her bicycle, on foot around the city. With its extensive recreational zones and an uninterrupted non-motorized traffic network, Utrecht prides itself on being the most pedestrian- and bicycle-friendly city in the Netherlands. The municipal authorities have had years of experience working in multidisciplinary teams. Here, as elsewhere, the recent population growth has been taken as an opportunity to redefine urbanism and to address the health effects of recreation on stress, measurable in terms of sleep, blood pressure and life expectancy in Utrecht's various districts. Miriam Weber cited studies that showed that densified cities have a beneficial effect on health, and personally views this as a promising starting point for further research.

Miriam Weber is an expert in environmental issues and governance innovation, and is in charge of the development and implementation of the Healthy Urban Living programme in the municipality of Utrecht.

Happy and healthy, compact cities are, as far as Miriam Weber is concerned, the future of urban planning. Using model examples from Utrecht – where with green spaces, water elements and route planning the city has been fundamentally transformed within its boundaries – she demonstrated that densification and sound design can be closely planned in tandem

with each other. The ways in which people move about the city, be it walking, jogging or by bicycle, present a key to simultaneously tackling environmental problems at multiple levels. For example, a decline in obesity amongst the population correlated with a reduction in air pollution and traffic noise emissions, meaning that a positive soundscape is perfectly realisable. Urban routes, according to Miriam Weber's proposal, could also be used as the basis for a bonus-malus planning system. For example, a reward points system could be introduced for the reachability of closer and further-away recreational zones (greened outdoor spaces within housing estates, neighbourhood parks within walking distance, leisure facilities within cycling distance) inside the city, which could then be added up with other (measurable) benefits and disadvantages. In concluding, she emphasised the extent to which participation was crucial in winning community acceptance of such planning schemes. By this means the design of public space in Utrecht incorporates the interests of all the parties involved. Just a month beforehand, over four Saturdays, a guideline had been drawn up – not by the authorities, as Miriam Weber was happy to announce, but by hundreds of residents!

It was noticeable that during what was a meeting of acousticians in Basle, Miriam Weber pointedly spoke of health in holistic terms as part of an integral environmental approach, and that she not once referred to noise exposure. This is precisely where she herself sees an opportunity to overcome the debate about control limits: acousticians are not always a part of the planning teams and noise is an element in what is an overall environmental complex.

In conclusion to the twelve presentations, Peter Cusack posed the suggestive question «If music were to have no subjective effect, why would we make it in the first place? » Tones, noises and sounds are something inherently subjective and constitute the core of his work. He made his first tone recordings in 1976 in Utrecht, and since then around the world, all as part of his radical acoustical research into the state of the environment.[10] It is not only his audiotapes that play a role in his work, but equally human perceptions. His approach of researching the soundscape as it emanates from humankind is illustrated in his project *Word Clouds*,[11] which was produced for various British cities on the basis of questionnaires and which he repeated ten years later in London and Manchester. The *Word Clouds* reflected the changes that had taken place, such as the disappearance of the Concorde, new regulations for street musicians and the opening up of the Thames with a riverside promenade.

Peter Cusack is a musician and sound journalist (a term he himself coined) in Berlin. He is a lecturer in sound art and sound design at the London College of Communication.

The conclusion Peter Cusack made from a series of interviews he undertook with the London radio station ResonanceFM is that discovering why a sound is pleasant is more important than the ability to precisely describe it. The explanations given in the interviews encapsulate life stories: because «the sing-song of the train station tannoy has a Nigerian accent», «quietness is so seldom», «the cry of the street vendor reminds me of my father».

[10] www.favouritesounds.org is Peter Cusack's worldwide sound archive with his own recordings and those of his students. The pioneering project in the field is Udo Noll's website soundmap aporee.org, the world's largest sound archive with over 35,000 recordings, catalogued also to serve future research needs.

[11] The website www.wordle.net assigns a size to the frequency of words and displays them as typographical representations.

The first question in the final discussion was whether it is possible to make generalisations based on investigations like these? Peter Cusack's answer was a three-fold «yes»:

1. Almost nobody says the same thing.
2. There is an enormous acoustic diversity.
3. The wish to produce a consensus would be a waste of time.

It is precisely this diversity of what are often very detailed descriptions that offers an opportunity for new forms of action, due to the fact that the sounds within them embody deeply emotional elements of everyday life. In order to achieve a «human-centred soundscape», Peter Cusack outlined four criteria:

1. A variation of sounds (the number and variation of tones).
2. Acoustic levels at which conversations are possible 90 per cent of the time and footsteps are audible.
3. A clarity of soundspace, allowing the position, distance and movement of a sound to be heard so as to be able to localise the space itself and one's own position within it.
4. A correlation between the audible and the visible.

As an epilogue to the seminar, Andres Bosshard made sure that nobody would leave Basle without a new perceptual awareness. Starting in the Druckerei hall, he allowed the participants to experience the wooden and stone floors, the timber beams, and then onwards past the curtains through the reverberant entrance hall, which opened up to the patio as if in a Greek theatre. The sound artist enacted the stage with voices and bodies; at one point both could be heard and seen, at another only the voice or the body. The sound strollers funnelled themselves through the entry portal into the acoustic panorama of the open street, following an echoing wall along the steps down to the Rhine. Hearkening alternately to the surroundings and Andres Bosshard's inspiring and stimulating descriptions, the silence of the promenade came as a surprise, followed by the intensity of an echo from a glass facade on the opposite river bank. The Basle cityscape served up cargo ships and swimmers in the Rhine, the rustle of leaves and the splashing of fountains, heedless lorry drivers and clanging trams, whilst the group prepared themselves for the journey home with a view of the Rhine; but not before one last stop at the lunch buffet with the sorely needed coffee for more animated discussions and a look at the key messages presented on the wall (see appendix). After 24 hours full of tightly packed presentations, serious discussion, informing and inspiring exchanges, and new (auditory) experiences, the 30 participants took leave of each other in the hope that the seminar would be resumed next year.

Andres Bosshard is a musician and sound artist who has undertaken numerous international appearances, known amongst other things for the *Sound Tower* at the Expo.02 in Biel. He is a lecturer at the Zurich University of the Arts.

3. Author's Comments

In the past the target of safeguarding not only health but also quality of life and comfort was met by tightening the critical thresholds. The Basle seminar focused on this quality, based on the framework premise that threshold values are subject to political criticisms and often result in compromises, in other words in targets being watered down. Who precisely the beneficiaries of acoustical comfort levels (over and above those represented in health protection) should be provoked heated debates in the Standards Commissions in the 1960s. Today it is more self-evident that everyone has an entitlement to a certain comfort. Nevertheless, thresholds continue to be a subject in expert discussion rounds – not (only) in terms of their numerical values, but also in the recognition of context, for example the possibility of taking compensatory effects into account.

Sabine von Fischer is an architect and historian of science. She is the proprietor of the Architecture Agency in Zurich and research director for Energy-Culture and Architecture at the Zurich University of Applied Sciences (ZHAW).

On differing scales, the correlation between quiet and recreation would appear to have been the most discussed future strategy at the Basle seminar – in Jean-Marc Wunderli's presentation between noise exposed residential areas and local recreational areas, and again repeatedly in smaller-scale situations with differences between the front and rear facades of residential buildings, as already implemented in Sweden and Denmark (Jakob Fryd) and under discussion in the Netherlands (Miriam Weber).

Relationships to urban climate were discussed in a number of the lectures, for instance in Philipp Krass' studies on warming in cities, or in Colin Nugent's and Christian Popp's proposals for planted facades that would be able to absorb not only noise pollution but also thermal energy and air pollution. In many places the sound environment of public spaces is defined by reflections from flat, closed building fronts and noise barriers. Frequently these conditions can even result in selfish, noise-intensive behaviour because the people behind the walls are scarcely perceived as a part of one's own environment. In those places where the urban fabric is densified, greater numbers of people participate in the sound environment. One possible argument is that the greater the number of people affected, the higher the standards of quality of life and wellbeing (acoustical, thermal, socio-spatial, etc.) should be.

Since the regulatory control of the acoustic environment and the introduction of threshold values, our cities and settlement areas have changed in many ways in terms of noise sources such as daily routines and behavioural patterns. And presumably far more profound transformations are yet to come (see box: «Perhaps, in 2050…»). Going beyond the minimal standards that were formulated in the last century, it would seem appropriate to ask what the instruments might be that take recent physiological findings into account, for example the interaction between acoustic, visual, thermal and spatial sensations. If quality in the urban environment is expressed in terms of the variety of environmental impressions that arise, then new technical approaches are required to define this variety.

A comparison between noise protection and thermal protection suggests itself. Whereas thermal insulation in the 1980s was restricted to k-value specifications for individual building elements, in the 1990s practices shifted to regulating heating demands, and in the meantime

now endeavour to meet even more comprehensive targets in overall energy savings. In an analogous and understandably delayed development (the most decisive trigger events in noise protection were the oil-price shocks of 1973 and 1979), it would appear that noise protection is turning today towards similarly holistic considerations.

Perhaps, in 2050… a young researcher reads a report from the year 2016, retrieved thanks to a reference in an archive box. The report describes a debate about the best instruments with which to assess acoustics in public space. Most of the participants of the seminar described in the paper are still alive. The young researcher contacts one of them. The expert recalls how, at the time in Basle, she had suggested that the twentieth-century noise protection instruments should be coupled with a multisensory assessment system. In around 2024 the SPATIALCOMFORT scale® had been established, and in 2026 the FederalAcouTherm index. Although the trends had already been apparent in 2016, the circumstances had been complicated, and most researchers had been focused on the noise produced by the engines and gear mechanisms of the time. The vehicle lanes then (called «roads») had been wider, and instead of driverless autonomobiles there had only been automobiles, whose drivers had operated the motors so badly that the greatest problem had been that the engines screamed. Courtyards and squares had been segregated from the streets by walls, making them quieter but not always easily accessible.

The 2016 report unfortunately contained no advice about the buzz of the drones that flew day and night through the courtyard in front of the young student's window. It also appeared that the main worries decades earlier had above all been about lower frequencies, whereas the dizziness of the young researcher (who had listened to the historical hummings, roarings and howlings on the recordings archived at aporee.org) was being caused more by the whirring of the electrical motors over the roofs. Re-reading the key messages from 2016, the older expert said, she was actually able to find ideas in it that even then had also anticipated how the shrill sound and the cooling airflow from the drones might be evaluated in an overall environmental assessment. However, what above all had really had its beginnings in 2016 in the Ackermannshof in Basle was the idea of a holistic evaluation in which the compensatory effects were accounted for in time ranges and in various different size scales.

It is interesting to note that sound designers and acousticians – many of whom in the past bristled against the so-called primacy of the visual and ocular-centrism – now invoke the reciprocation between the senses of hearing and sight. The call for collaborations between technicians and artists, cognitive scientists and spatial planners, is echoed in the call to evaluate human perception in the concurrence of the various senses. As the examples drawn from different contexts during the workshop showed, a wide variety of factors contribute to well-

being. The recognition of acoustics as part of broader environmental issues helps to give the subject more weight, the proposed solutions more leverage, and to provide better arguments to secure financing. Adherence to the three axes of ecological, economic and social sustainability requires multidisciplinary cooperation and the marrying of quantitative and qualitative parameters.

4. Conclusions

The conclusion from the event is a multiple one. It consists on the one hand of Fredy Fischer's precise and concise closing comments, and on the other of the over one hundred guiding principles drawn up by the participants on the sheets of A3 paper that were handed out at the beginning of the seminar (see appendix: Key Messages). All of them testify to an informative and inspiring dialogue in light of the major challenge that creating a strategy for noise prevention and for the acoustic design of our cities and urban areas represents.

As society has changed, so requirements have become more varied. The basic design principles have to stay abreast of this diversity and open up room for manoeuvre wherever it is worthwhile. Social aspects, as was often said during the proceedings, have to be integrated into the planning processes, and participation has to be taken seriously. Assessments have to encompass the various different environmental factors, both collectively and in their interrelationships. The new challenges in spatial planning require that top-down approaches are more intensively implemented in multidisciplinary collaborations. The fact that such processes cost time and money in turn necessitates new solutions. In this respect, Esther Casanova's proposal that the surplus-value levy could be directly used towards the quality of public space proved to be a provocative yet pragmatic one. The concepts and guidelines formulated for the European Union, in particular the QUADMAP, serve in certain respects as models and incentives for Switzerland, but at the same time demonstrate the difficulty of transferring global standards to specific situations.

Fredy Fischer summarised the findings of the seminar with the words

«only together are we strong»

and presented this guiding principle in four points:

1. We can all learn from each other.
2. Acoustics is an important part of location quality, above all in housing.
3. Synergies between acoustics and other issues create greater leverages.
4. We have to try to quantify measures in order to finance them. Fundamental to each line of argumentation is to demonstrate the connection between costs and benefits.

Appendix: Key Messages from the Speakers and Guests

ACOUSTIC QUALITY AND PLANNING TOOLS

HOW DO YOU CHARACTERISE ACOUSTIC QUALITY? HOW DO YOU MAKE PUBLIC URBAN SPACES ACOUSTICALLY MORE PLEASANT? WHICH PLANNING TOOLS DO YOU USE?

Types of building structures in order to support new ~~use~~ measurements.
But its ~~metric~~ oriented and what about the green structure and the
interplay with building structures and acoustic effects.
Awareness of visual and auditory quietness! So experience of space is important.
Involving people in some way also means involving in their experience.
How to link spatial structure, metric measurements with experience based measures.

Noise doze ~ interesting if we can go to „silent" areas
on request our system

KEY MESSAGE SESSION 1 | YOUR NAME:

Ritzne

AKUSTISCHE QUALITÄT UND PLANUNGSWERKZEUGE

WIE BESCHREIBEN SIE AKUSTISCHE QUALITÄT? WELCHE INSTRUMENTE VERWENDEN SIE, UM AKUSTISCHE QUALITÄT IM STADTRAUM ZU FÖRDERN UND ENTWICKELN?

Akustik ist Teil einer gesamthaften Aufenthaltsqualität, d.h. auch
visuelle Aspekte, Gerüche, Temperatur, soziales 'Ambiente' etc.
Wichtig/Interessant sind Gegensätze wie lebendig-ruhig, lärmig-still, offen-privat/intim
/Instrumente:
Mitwirkungsverfahren (Partizipation d. Anwohner, Gewerbetreibenden, Vereine, 'Besucher' etc.),
z.B. 'World-Café', Zukunftswerkstatt

SCHLÜSSELBOTSCHAFT SESSION 1 | IHR NAME: Jan Gaudenz

AKUSTISCHE QUALITÄT UND PLANUNGSWERKZEUGE

WIE BESCHREIBEN SIE AKUSTISCHE QUALITÄT? WELCHE INSTRUMENTE VERWENDEN SIE, UM AKUSTISCHE QUALITÄT IM STADTRAUM ZU FÖRDERN UND ENTWICKELN?

Es hat wenig mit Qualität als mit Wahrnehmung zu tun. Die Qualität ist erst "in zweiter Instanz" die subjektive Bewertung des gelieferten – im Positivraume im negativen.

Akustische Qualität ist nur ein Kriterium unter vielen. Je mehr Aspekte im öff. Raum positiv gestaltet bzw. aufgewertet werden können, desto höher ist die Chance, dass die "akustische Qualität" ebenfalls positiv(er) bewertet wird. Interdisziplinarität ist daher nicht nur aus praktischen und ökonomischen Gründen sinnvoll – sie sollte Konzept sein!

SCHLÜSSELBOTSCHAFT SESSION 1 | IHR NAME: MARESA SCHUMACHER

AKUSTISCHE QUALITÄT UND PLANUNGSWERKZEUGE

WIE BESCHREIBEN SIE AKUSTISCHE QUALITÄT? WELCHE INSTRUMENTE VERWENDEN SIE, UM AKUSTISCHE QUALITÄT IM STADTRAUM ZU FÖRDERN UND ENTWICKELN?

Akustische Qualität ist mehr als die Einhaltung von bestimmten Dezibelwerten.

Instrumente hierfür sind offizielle Flächennutzungspläne aber auch die Mitwirkung und Rückmeldungen der Öffentlichkeit.

SCHLÜSSELBOTSCHAFT SESSION 1 | IHR NAME: Matthias Flintzsche

ACOUSTIC QUALITY AND PLANNING TOOLS

HOW DO YOU CHARACTERISE ACOUSTIC QUALITY? HOW DO YOU MAKE PUBLIC URBAN SPACES ACOUSTICALLY MORE PLEASANT? WHICH PLANNING TOOLS DO YOU USE?

My characterisation of acoustic quality is:
1) That a good variety of sound can be heard
2) That one can hear spatiality and distance
3) That conversation at normal levels succeeds 90% of the time
4) There is a reasonable agreement between what is heard and what is seen

KEY MESSAGE SESSION 1 | YOUR NAME:

Peter Cusack

ACOUSTIC QUALITY AND PLANNING TOOLS

HOW DO YOU CHARACTERISE ACOUSTIC QUALITY? HOW DO YOU MAKE PUBLIC URBAN SPACES ACOUSTICALLY MORE PLEASANT? WHICH PLANNING TOOLS DO YOU USE?

How we do know that an acoustic space is pleasant? ✓
We know when it is not.

Subjectivity => PARTICIPATION
↳ Not common in politics. (LAW in Germany, FEAR

Influence of urban structure
of expectation } CONTEXT

Need to integrate with othe aspects.
↳ to act also in the context, not only acoustics
↳ to get more of chances / power / money to act

KEY MESSAGE SESSION 1 | YOUR NAME:

ACOUSTIC QUALITY AND PLANNING TOOLS

HOW DO YOU CHARACTERISE ACOUSTIC QUALITY? HOW DO YOU MAKE PUBLIC URBAN SPACES ACOUSTICALLY MORE PLEASANT? WHICH PLANNING TOOLS DO YOU USE?

„Gute akustische Qualität fällt [Laien] nicht auf, schlechte hingegen schon."

„Stadtplanung kann keinen Nutzen in Lärmkartierung und Lärmaktionsplanung erkennen."

„Autofahren belästigt stärker als Stadtstraßen" ??

KEY MESSAGE SESSION 1 | YOUR NAME: Popp

AKUSTISCHE QUALITÄT UND PLANUNGSWERKZEUGE

WIE BESCHREIBEN SIE AKUSTISCHE QUALITÄT? WELCHE INSTRUMENTE VERWENDEN SIE, UM AKUSTISCHE QUALITÄT IM STADTRAUM ZU FÖRDERN UND ENTWICKELN?

- Wenn ich mich gerne und ungestört im Stadtraum aufhalte
- Wenn ich mich nicht beeinträchtigt fühle bei dem was ich mache/machen will
- Interaktionen sind möglich
- Wenn ich mich sicher fühle
- Instrument: Sich im Raum aufhalten

SCHLÜSSELBOTSCHAFT SESSION 1 | IHR NAME:

ACOUSTIC QUALITY AND PLANNING TOOLS

HOW DO YOU CHARACTERISE ACOUSTIC QUALITY? HOW DO YOU MAKE PUBLIC URBAN SPACES ACOUSTICALLY MORE PLEASANT? WHICH PLANNING TOOLS DO YOU USE?

Akustische Qualität als Teil der Qualität des öffentlichen Raums
→ Wissen (über akustische Zusammenhänge) fehlt häufig noch
zumindest bei Planern
→ Übersicht herstellen! Kartierung
Kund inn über die Relevanz der
Fragestellung klären
→ Interdisziplinäre Vorgehensweise des Themas

KEY MESSAGE SESSION 1 | YOUR NAME: PHILIPP KRASS

ACOUSTIC QUALITY AND PLANNING TOOLS

HOW DO YOU CHARACTERISE ACOUSTIC QUALITY? HOW DO YOU MAKE PUBLIC URBAN SPACES ACOUSTICALLY MORE PLEASANT? WHICH PLANNING TOOLS DO YOU USE?

key issue here is that our 'traditional' planning approach focuses (regulates) noise sources and noise exposure and is not (yet) used to or - even - aware of soundscape perspective. Adding / planning for (acoustic, visual, sustainable, healthy) quality is taking account of individuals, population (subgroups), perception. As well as sound sources that today are not 'regulated' such as scooters, mopeds (adverse health effects) and water, nature, birds etc. (stress relief).

Structure of city comprises of:

- = infrastructure
- = buildings

] (traditional) spatial planning tools for 'Lärmschutz'

- = public space
- shared space

| spatial, healthy sound urban planning

tomorrows combined approaches

KEY MESSAGE SESSION 1 | YOUR NAME: Miriam Weber

AKUSTISCHE QUALITÄT UND PLANUNGSWERKZEUGE

WIE BESCHREIBEN SIE AKUSTISCHE QUALITÄT? WELCHE INSTRUMENTE VERWENDEN SIE, UM AKUSTISCHE QUALITÄT IM STADTRAUM ZU FÖRDERN UND ENTWICKELN?

> Bürgerbeteiligung kreiert Ideen + braucht Spielregeln
> gute Akustik bemerkt man nicht
> Räume mit Kontrast — müssen zugänglich sein
> ? Wie viel gesünder werden wir mit "ruhigen" Räumen?
> Akustische Qualität (+) Quellenmassnahmen

SCHLÜSSELBOTSCHAFT SESSION 1 | IHR NAME: wy

ACOUSTIC QUALITY AND PLANNING TOOLS

HOW DO YOU CHARACTERISE ACOUSTIC QUALITY? HOW DO YOU MAKE PUBLIC URBAN SPACES ACOUSTICALLY MORE PLEASANT? WHICH PLANNING TOOLS DO YOU USE?

NOT ALWAYS ABOUT dB level. CHARACTERISTIC OF SOUNDS IS IMORTANT.
.... HOWEVER PLANNING TOOLS TO PROTECT SPACES WILL NEED LIMIT VALUES TO REDUCE THE IMPACT OF LESS DESIREABLE, E.G. ROAD TRAFFIC.

ADDING ARTIFICIAL SOUND CAN HELP WITH MASKING EFFECT, E.G. A WATER FEATURE.

KEY MESSAGE SESSION 1 | YOUR NAME:

LAWS, CODES, AND OTHER OPTIONS OF IMPLEMENTATION

WHICH INITIATIVES, INCENTIVES AND/OR QUALITATIVE AND QUANTITATIVE REQUIREMENTS DO YOU THINK ARE PARTICULARLY SUITABLE TO REACH ACOUSTIC QUALITY OBJECTIVES IN PUBLIC URBAN SPACES?

Link it to existing strategies !
e.g. greening strategy or health strategy

Leitbilder / Visionen einfordern von den Städten / Gemeinden

KEY MESSAGE SESSION 2 | YOUR NAME: Trond

GESETZE, VERORDNUNGEN UND ANDERE UMSETZUNGSOPTIONEN

WELCHE INITIATIVEN, ANREIZE UND/ODER QUALITATIVE UND QUANTITATIVE ANFORDERUNGEN ERACHTEN SIE ALS ZWECKMÄSSIG, UM IM ÖFFENTLICHEN RAUM AKUSTISCHE QUALITÄTSZIELE ZU ERREICHEN?

- Gesetzesänderung nicht prioritär
- Gestaltungsplanung. für Innenverdichtung ist oft Anpassung der Nutzungsplanung notwendig. In diesem Rahmen diesbezüglich situative gestaltungsanordnungen erlassen.
- keine allgemeingültigen gesetzesvorschriften, sondern konkret.

- nutzungsplanerische Sicherung der Grünflächen / Parks ebenso der Verbindungen (Korridore) bezüglich Nutzung und / oder Funktion
- Abgeltung privater Grundeigentümer infolge materielle Enteignung (Grünzone statt Bauzone)

SCHLÜSSELBOTSCHAFT SESSION 2 | IHR NAME: C. Casanova

LAWS, CODES, AND OTHER OPTIONS OF IMPLEMENTATION

WHICH INITIATIVES, INCENTIVES AND/OR QUALITATIVE AND QUANTITATIVE REQUIREMENTS DO YOU THINK ARE PARTICULARLY SUITABLE TO REACH ACOUSTIC QUALITY OBJECTIVES IN PUBLIC URBAN SPACES?

We have to change building attitude → sound absorbing facades – vegetation on facades. We need to educate citizen and politicians to understand the effect and consequences of sound/acoustic actions

Implement sound actions in the approach and action of design of cities. (Design deals with spatial layout and its effect for human basis needs)
Interconnectivity of spaces on a large scale is important

People first – "they are the sensors in the city" ~ their experience
– (all human experience (which often differ from the noise map) is central for being grounded.

KEY MESSAGE SESSION 2 | YOUR NAME:

Rinke

GESETZE, VERORDNUNGEN UND ANDERE UMSETZUNGSOPTIONEN

WELCHE INITIATIVEN, ANREIZE UND/ODER QUALITATIVE UND QUANTITATIVE ANFORDERUNGEN ERACHTEN SIE ALS ZWECKMÄSSIG, UM IM ÖFFENTLICHEN RAUM AKUSTISCHE QUALITÄTSZIELE ZU ERREICHEN?

- ZUGÄNGLICHKEIT ZU ÖFFENTLICHEN "STADTOASEN" VERBESSERN
- IN GESTALTUNGSPLÄNEN + WETTBEWERBEN ERFAHRUNGEN BEZÜGLICH FASSADENMATERIALIEN, GEBÄUDETYPOLOGIEN, AUSSENRAUMSTRUKTUR, ETC. UNBEDINGT EINFLIESSEN LASSEN.
- ~~BEWUSSTSEIN FÜR BAULICHEN~~ BEWUSSTSEIN FÜR GESTALTERISCHE EINFLUSSGRÖSSEN BEI AKUSTISCHER QUALITÄT STÄRKEN (LEHRE, STADTENTWICKLUNG, ABER VOR ALLEM AUCH BEI BEVÖLKERUNG)
- ~~BEDING~~ PROBLEM NICHT LÖSEN, SONDERN VORAUSSETZUNGEN DAFÜR SCHAFFEN, DASS UN~~DER~~ IM GEBRAUCH VON STADT BEWOHNERINNEN LOCKER MITWIRKEN KÖNNEN
- SICHERSTELLEN, DASS AKUSTISCHE AUFWERTUNG NICHT ZU GENTRIFIZIERUNG FÜHRT (RUHE DARF NICHT PRIVILEG WENIGER SEIN!)

SCHLÜSSELBOTSCHAFT SESSION 2 | IHR NAME:

RICHARD ZEMP, HSLU

LAWS, CODES, AND OTHER OPTIONS OF IMPLEMENTATION

WHICH INITIATIVES, INCENTIVES AND/OR QUALITATIVE AND QUANTITATIVE REQUIREMENTS DO YOU THINK ARE PARTICULARLY SUITABLE TO REACH ACOUSTIC QUALITY OBJECTIVES IN PUBLIC URBAN SPACES?

EU INDICATORS, L_{DEN} & L_N, NOT ALWAYS SUITABLE FOR PUBLIC SPACES.

LAW IS NOT DESIRED BY CITY AUTHORITIES, BUT STATEMENT IN PLANNING POLICY CAN HELP TO PROTECT SPACES.

QUALITATIVE: MAPPING VIA SOUNDWALKS AND/OR SURVEYS OF CITIZENS CAN IDENTIFY AREAS NOT IMMEDIATELY OBVIOUS ON A QUANTITATIVE NOISE CONTOUR MAP USING L_{DEN}.

KEY MESSAGE SESSION 2 | YOUR NAME: COLIN NUGENT.

LAWS, CODES, AND OTHER OPTIONS OF IMPLEMENTATION

WHICH INITIATIVES, INCENTIVES AND/OR QUALITATIVE AND QUANTITATIVE REQUIREMENTS DO YOU THINK ARE PARTICULARLY SUITABLE TO REACH ACOUSTIC QUALITY OBJECTIVES IN PUBLIC URBAN SPACES?

In the Netherlands new (noise) legislation is developed, to be implemented in 2019. Similar to todays legislation (the Noise Abatement Act, in force since 1960s) the new act will set (preferred and maximum) immission limits for (new and existing) infrastructure and for (new and existing) dwellings.
In addition, and that is new, cities can define (noise, or environmental) quality, overall limits. The challenge though is how to safeguard these areas and limits, in fragmented and recurring decision making for (smaller) developments and spatial plans ?!?
Thus, setting / defining quality ambitions / objectives in regulation might be the 'wrong route' ....

KEY MESSAGE SESSION 2 | YOUR NAME: Miriam Weber

LAWS, CODE S, AND OTHER OPTIONS OF IMPLEMENTATION

WHICH INITIATIVES, INCENTIVES AND/OR QUALITATIVE AND QUANTITATIVE REQUIREMENTS DO YOU THINK ARE PARTICULARLY SUITABLE TO REACH ACOUSTIC QUALITY OBJECTIVES IN PUBLIC URBAN SPACES?

- regulation and also agreements with citizens and groups of citizens
See also Mirko Weber's text.

KEY MESSAGE SESSION 2 | YOUR NAME: Hank Wolfat.

GESETZE, VERORDNUNGEN UND ANDERE UMSETZUNGSOPTIONEN

WELCHE INITIATIVEN, ANREIZE UND/ODER QUALITATIVE UND QUANTITATIVE ANFORDERUNGEN ERACHTEN SIE ALS ZWECKMÄSSIG, UM IM ÖFFENTLICHEN RAUM AKUSTISCHE QUALITÄTSZIELE ZU ERREICHEN?

→ Zusammenschalten von akustischen Kartierungen mit städtebaulichen, sozialen, kontexten

SCHLÜSSELBOTSCHAFT SESSION 2 | IHR NAME: P. KRASS

LAWS, CODES, AND OTHER OPTIONS OF IMPLEMENTATION

WHICH INITIATIVES, INCENTIVES AND/OR QUALITATIVE AND QUANTITATIVE REQUIREMENTS DO YOU THINK ARE PARTICULARLY SUITABLE TO REACH ACOUSTIC QUALITY OBJECTIVES IN PUBLIC URBAN SPACES?

1) As for acoustic quality of dwellings its excential to ensure a silent side of the dwelling. Also outdoor space related to to dwelling should have low noise levels eg. ≤ 45 dB (Lden)
2) If 1) is ensured it is possible to plan dwellings with rather high noise levels on the most exposed facade

KEY MESSAGE SESSION 2 | YOUR NAME:

GESETZE, VERORDNUNGEN UND ANDERE UMSETZUNGSOPTIONEN

WELCHE INITIATIVEN, ANREIZE UND/ODER QUALITATIVE UND QUANTITATIVE ANFORDERUNGEN ERACHTEN SIE ALS ZWECKMÄSSIG, UM IM ÖFFENTLICHEN RAUM AKUSTISCHE QUALITÄTSZIELE ZU ERREICHEN?

Die Definition von Mindestanforderungen und -regelungen auf der Basis verbindlicher gesetzlicher Regeln.

Schaffung von Anreizen, bspw. über finanzielle Förderprogramme, um höhere Qualitäten in urbanen Planungen dauerhaft zu verankern. Gute Beispiele ermutigen zur Nachahmung.

SCHLÜSSELBOTSCHAFT SESSION 2 | IHR NAME: Matthias Hintzsche

ZUKÜNFTIGE ARBEITEN UND FORSCHUNGEN

WELCHE ASPEKTE BZGL. STADTAKUSTIK SIND GEGENWÄRTIG NOCH UNGENÜGEND ERFORSCHT? WAS FEHLT, DAMIT DIE REALISIERUNG VON AKUSTISCHEN QUALITÄTSZIELEN MÖGLICH WIRD?

Für die positive Planung von Akustik besteht meines Erachtens keine Sensitivität, speziell bei Planungen auf kommunaler Ebene. Es geht primär darum sich vor schädlichen / lästigen Lärm zu schützen.
Eine Chance könnte darin bestehen, Themen / Fragen / Bedürfnisse der akustischen Qualität an etablierte Planungen / Disziplinen anzuhängen, gemeinsam zu denken, wie z.B. mit der Freiraumplanung / Landschaftsarchitektur.
Dabei können auch finanzielle Synergien entstehen (Stichwort: Mehrwertabgabe RPG)
Mögliche Gefässe für gemeinsame Studien, um das Thema gemeinsam, interdisziplinär voran zu treiben könnte sein: ARE Modellvorhaben?
KTI Forschungsprojekte?

SCHLÜSSELBOTSCHAFT SESSION 3 | IHR NAME: Jürgen Hugsberger

ZUKÜNFTIGE ARBEITEN UND FORSCHUNGEN

WELCHE ASPEKTE BZGL. STADTAKUSTIK SIND GEGENWÄRTIG NOCH UNGENÜGEND ERFORSCHT? WAS FEHLT, DAMIT DIE REALISIERUNG VON AKUSTISCHEN QUALITÄTSZIELEN MÖGLICH WIRD?

→ Systematisierung von Parks und Freiräumen in Bezug auf Freiraumbedürfnisse, Erholungsfunktion etc. (Kartierung, Quantifizierung)
(vgl. Grundlagen zum Freiraumkonzept Bern)

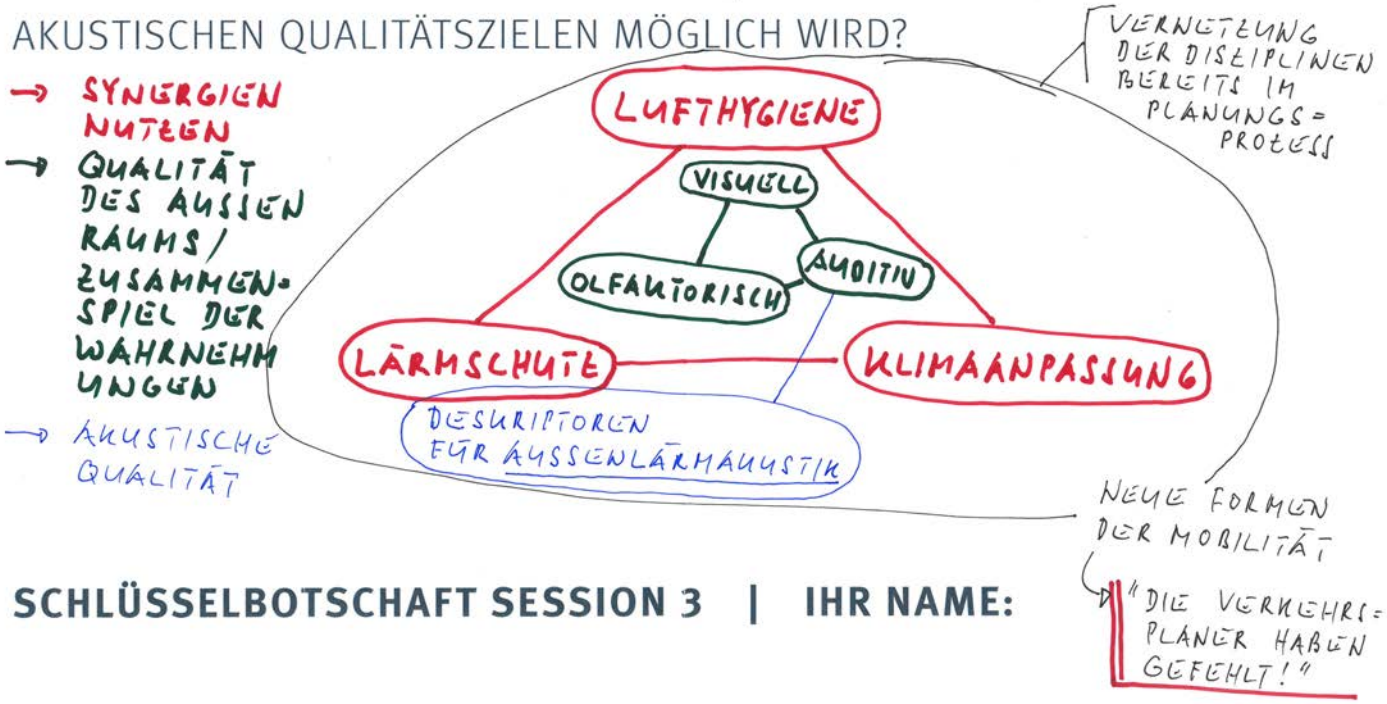
→ Zusammenbringen von "technischer" Forschung, Messung, Partizipation und Designern, Entwurfsspezialisten.

Vorschlag: Forschungsprojekt / Test-Case mit realem Projekt und Beispielgemeinde in dem (Landschafts-)Architekten, Planer aufgrundlage von zuvor abgeglichten Messungen und Forschungsergebnissen (evtl. in Korrelanz) gestalterische Umsetzungen dieser Ergebnisse ausarbeiten. inkl. Evaluation

SCHLÜSSELBOTSCHAFT SESSION 3 | IHR NAME: PHILIPP KRASS

ZUKÜNFTIGE ARBEITEN UND FORSCHUNGEN

WELCHE ASPEKTE BZGL. STADTAKUSTIK SIND GEGENWÄRTIG NOCH UNGENÜGEND ERFORSCHT? WAS FEHLT, DAMIT DIE REALISIERUNG VON AKUSTISCHEN QUALITÄTSZIELEN MÖGLICH WIRD?



SCHLÜSSELBOTSCHAFT SESSION 3 | IHR NAME:

ZUKÜNFTIGE ARBEITEN UND FORSCHUNGEN

WELCHE ASPEKTE BZGL. STADTAKUSTIK SIND GEGENWÄRTIG NOCH UNGENÜGEND ERFORSCHT? WAS FEHLT, DAMIT DIE REALISIERUNG VON AKUSTISCHEN QUALITÄTSZIELEN MÖGLICH WIRD?

Quantitative Betrachtungen von Lärm können nicht ausreichen, um die Verbesserg. darzustellen. Werden an einem Ort die Grenzwerte überschritten, kann an einem anderen, zugängl. nahen Ort ein ausgleichsbereich als Ruheraum geschaffen werden.

Klanggrammgestaltung ist nur umsetzbar, wenn es objektiviert und quantifiziert werden kann. Der A-Bewertete-Pegel ist eine Krücke, mit der man das menschliche Empfinden nicht hinreichend abbilden kann. Es sind Messmethoden und Parameter zu identifizieren, mit denen die akustische Qualität / Aufenthalts-/Erholungsqualität eines Ortes abgebildet werden kann.

Nicht Lärm bekämpfen, sondern ruhige Umgebungen fördern!

SCHLÜSSELBOTSCHAFT SESSION 3 | IHR NAME: Regina Bachel

FURTHER WORK AND RESEARCH TO BE DONE

WHICH ASPECTS OF URBAN SOUND DO YOU THINK HAVE NOT BEEN RESEARCHED SUFFICIENTLY YET? WHAT IS LACKING TO REALISE ACOUSTIC QUALITY IN PUBLIC URBAN SPACES?

RESEARCH : 1. INTEGRATED URBAN QUALITY - AIR QUALITY, HEALTH INDICATORS + SOUND.

2. OVERALL PERCEPTION : VISUAL, SCALE, ODOUR .... AS WELL AS SOUND.

LACKING : JOINED UP THINKING - IT'S IN THE WORKSHOP, BUT LET'S IMPLEMENT ~~PEEEE~~ THIS IN THE REAL WORLD. → URBANISTS + ARCHITECTS + PLANNERS + SOUND EXPERTS + TRANSPORT EXPERTS.

KEY MESSAGE SESSION 3 | YOUR NAME: COLIN NUGENT.

FURTHER WORK AND RESEARCH TO BE DONE

WHICH ASPECTS OF URBAN SOUND DO YOU THINK HAVE NOT BEEN RESEARCHED SUFFICIENTLY YET? WHAT IS LACKING TO REALISE ACOUSTIC QUALITY IN PUBLIC URBAN SPACES?

wir können die verschiedenen
disziplinären Perspektiven
zusammengedacht werden:
→ eine Sprache, oder zumindest
Übersetzung + Zusammenführung
der verschiedenen Arbeitsweisen, Methoden, Haltung &
→ das Produkt wird etwas Neues, Größeres, Unbekanntes sein

KEY MESSAGE SESSION 3 | YOUR NAME: U.J.

ZUKÜNFTIGE ARBEITEN UND FORSCHUNGEN

WELCHE ASPEKTE BZGL. STADTAKUSTIK SIND GEGENWÄRTIG NOCH UNGENÜGEND ERFORSCHT? WAS FEHLT, DAMIT DIE REALISIERUNG VON AKUSTISCHEN QUALITÄTSZIELEN MÖGLICH WIRD?

Mehrwertausgleich, der bei Einzonungen und Aufzonungen durch die Gemeinde einverlangt werden muss (Innenverdichtung, RPG 1), verwenden, um Erholungsräume zu schaffen (Ruheoasen in nächster Nähe)

SCHLÜSSELBOTSCHAFT SESSION 3 | IHR NAME:

ZUKÜNFTIGE ARBEITEN UND FORSCHUNGEN

WELCHE ASPEKTE BZGL. STADTAKUSTIK SIND GEGENWÄRTIG NOCH UNGENÜGEND ERFORSCHT? WAS FEHLT, DAMIT DIE REALISIERUNG VON AKUSTISCHEN QUALITÄTSZIELEN MÖGLICH WIRD?

Subjektivität (Individuum bzw. soziale Gruppen) und deren Möglichkeit zur Objektivierung / Verallgemeinerung.

Welcher Stellenwert hat Hörerlebnis im Gesamtkontext des Erlebens eines Ortes?

SCHLÜSSELBOTSCHAFT SESSION 3 | IHR NAME:

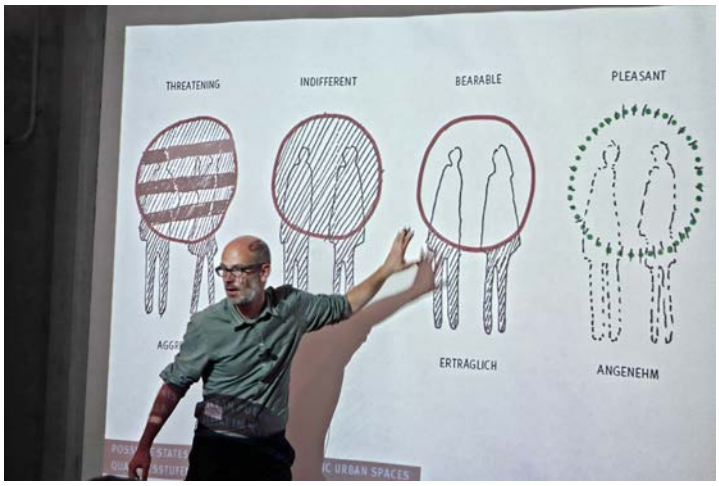
Appendix: Photographic Impressions

Photos by Sara Claveria


Gute akustische Qualität fällt nicht auf.
Besitzt ein öffentlicher Raum eine gute Akustische Qualität, fällt das meist nicht explizit auf. Man nimmt es als selbstverständlich hin.


Öffentliche Räume
...sind Ausdruck der Vielfalt der Stadtgesellschaft.
...bieten Chancen für Begegnungen, Miteinander und Distanz.
... haben unterschiedliche Funktionen und Bedeutungen


Introduction
Background
Purpose

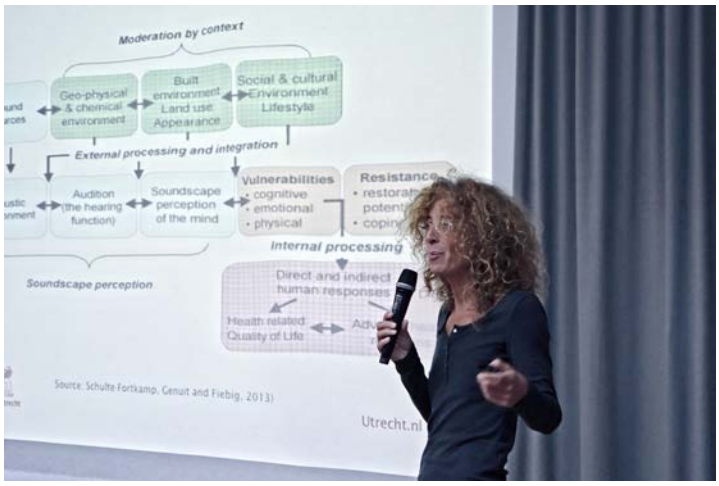

THREATENING
INDIFFERENT
BEARABLE
PLEASANT
ERTRAGLICH
ANGENEHM


Possible legislative instrume
European level (do we want a definition?)
Legislation national level
Local legislation
Policy document
Code or regulation
Positive list
Negative list
Zoning (embedded zones)
Spatial plan with limitations


Zusammenfassung / Schlussfolgerung
In der akustischen und visuellen Gestaltung des öffentlichen Raumes liegt ein grosses Potenzial
zur Erhöhung der Leben
zur Reduktion negativer
des Lärms auf die Gesundheit.
Dieses Poten
und vor allem auch quantifiziert w
Synergien mit
Stadtklima…
nutzen.
Interdiszip
Raumpla
Nur auf
kann der


HOW DO YOU CHARACTERISE ACOUSTIC QUALITY IN
PUBLIC URBAN SPACES ACOUSTICALLY MORE PLEASANT? WHICH
PLANNING TOOLS DO YOU USE?
CHE QUALITÄT UND PLANUNGSWERKZEUGE
REIBEN SIE AKUSTISCHE QUALITÄT? WELCHE INSTRUMENTE
SIE, UM AKUSTISCHE QUALITÄT IM STADTRAUM ZU
WICKI


Confederazium svizra
on 3
search to be done»
spuru


Moderation by context
Geo-physical & chemical environment
Built environment Land use Appearance
Social & cultural Environment Lifestyle
External processing and integration
Audition (the hearing function)
Soundscape perception of the mind
Vulnerabilities
• cognitive
• emotional
• physical
Resistance
Internal processing
Soundscape perception
Direct and indirect human responses
Health related Quality of Life
Source: Schulte-Fortkamp, Genuit and Fiebig, 2013)
Utrecht.nl


Funfair
waves
football
arcade
rides
seafront
wine-pouring
of
Birds
gulls
night
Sport
St-Clement's
Dr-Feelgood
boat-masts-clinking
Wind
arriving
bicycles
stacking
Trains
Music
Food
relaxing
Bells
home
Sea
calming
shore
Roller-coaster
foghorns


wob