



# FORUM ACUSTICUM EURONOISE 2025

## AN APPROACH TO SENSORY HERITAGE POLICY THROUGH SOUNDSCAPE AND SMELLSCAPE

PerMagnus LINDBORG<sup>1\*</sup>

Lok Him LAM<sup>1</sup>

Yui Chung KAM<sup>1</sup>

Jieling XIAO<sup>2</sup>

<sup>1</sup> School of Creative Media, City University of Hong Kong, Hong Kong SAR, China

<sup>2</sup> City University of Birmingham, UK

### ABSTRACT

As Hong Kong develops its competitive advantages as a creative international city, it can draw on a multifaceted heritage. While the built and intangible cultural heritage (ICH) are fairly well protected, the concept of sensory heritage is not currently addressed in official documents. Sensory heritage is constituted by culturally valued practices, rituals, and everyday activities as experienced through all the senses. It includes soundscape, the sum total of multiple sound sources as perceived and understood by individuals or communities, and the parallel concept of smellscape. In Hong Kong, current regulations on sounds and smells place limits on their negative aspects, such as noise from construction sites and malodour from sewage plants. However, there are also sounds and smells that people find valuable, likeable, and culturally relevant, and which give their city an identity. The mechanisms through which sensory heritage is created, maintained, and integrated in various sectors of the economy are little known. The present paper describes the background to a new research project that aims to make policy recommendations and have an impact on higher education and multisensory design in the local art scene and creative communities, as well as on companies that work with branding and virtual tourism.

**Keywords:** *sensory heritage, soundscape, smellscape, policy, Hong Kong*

\*Corresponding author: pm.lindborg@cityu.edu.hk.

**Copyright:** ©2025 Lindborg et al. This is an open-access article distributed under the terms of the Creative Commons Attribution 3.0 Unported License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

### 1. INTRODUCTION

While regulations preserving the built and intangible cultural heritage (ICH) are fairly well covered in Hong Kong, the concept of sensory heritage is not currently being addressed. Sensory heritage is constituted by culturally valued practices, rituals, and everyday activities as they are experienced through *all* the senses. In a new project based in Hong Kong, we develop knowledge, digital tools, and technologies to identify sensory heritage in for tourism as well as for building and maintaining cultural identity [1].

#### 1.1 Sensory heritage

Sensory heritage is crucial for people's connection to their environment, both past and current. It encompasses the sights, sounds, smells, tastes, and textures that define the history and culture of a community. Everyday activities and narratives shape people's identity. Research in this field involves technologies for preservation and promotion, such as recreating sensory experiences through sounds and smells associated with historical artifacts or tourist environments using digital tools, such as 3D modeling, virtual reality, and GIS mapping. Figure 1 gives a schematic overview. Sensory heritage offers added value to the lived experiences of people. While the concept is flexible and need not abide by a strict definition, increased awareness and attention to it will generate wider benefits in the economy.

Sensory heritage can be understood as the intersection between soundscape, smellscape, and everyday practices. Soundscape is constituted by multiple sounds in the acoustic environment as perceived and understood by individuals or groups of people [2, 3]. Soundscape can have positive cultural value as well as negative impact on indi-





# FORUM ACUSTICUM EURONOISE 2025

vidual and community health. Similarly, smellscape is the perceived olfactory environment, resulting from a complex mixing of volatile olfactory compounds. While smell has always been a part of human experience and informal research for hundreds of years, smellscape concept only started to claim terrain as a field of research in the 1980s [4–6]. As pointed out by Bembibre, “the significance of smell in connection with heritage is rarely recognized. This is caused by 1) fragmented knowledge of the sensory worlds of the past and the present, 2) the low awareness of the importance of smells and olfaction in intangible heritage practices, and 3) the lack of adequate methods to identify, record and safeguard smells” [7].

In cities such as Hong Kong, there is a constant struggle between human traditions, forces of technologically driven desires (‘smart cities’), and contextual constraints (such as climate change). The sites that a community values combine physically persistent and ephemeral qualities. Multisensory approaches have increasingly gained importance in urban studies. City spaces that are culturally valued typically present an “intertwined tangible-intangible duality, expressed both as a physical construction and as a set of social, traditional practices” [8].

## 2. REGULATORY FRAMEWORKS

### 2.1 The European Union

**Sensory heritage.** France’s “*Maurice the Rooster*” law [9] aims to safeguard specific sounds and smells in the environment (*patrimoine sensoriel sur les sons et odeurs*; [10]). The law emphasizes the importance of rural traditions and sensory experiences as part of France’s cultural identity. Regional authorities are tasked with defining the sensory heritage to ensure that local traditions are respected and preserved. A first of its kind, the law challenges the entrenched urban-rural divide through both legal and societal means. Updates to the law in 2024 intend notably to limit economic and cultural conflicts between stakeholders, including peasants, tourists, and ‘neorurals’ [11].

**Built and intangible cultural heritage.** Let us briefly review the history of heritage policy. The first recognised kind of heritage emphasised physical structures such as “architecture, their homogeneity or their place in the landscape” [12]. Meanwhile, ICH was defined as “any non-corporeal manifestation of tradition-based creativity [that reflects] the community’s social or cultural identity. It includes... the social, intellectual and

cultural processes that... have made possible the development of a distinct cultural tradition whose preservation and protection is important...” [13] (p. 5). The latter is typically related to rituals, festive events, and crafts within a community, yet it is not so much about the cultural manifestations themselves but rather the wealth of knowledge and skills being transmitted [14]. Moreover, social enactment is an “essential and defining aspect of intangible heritage, in the sense that this heritage exists and is sustained through the acts of people” [15] (p. 2). In 2017 the scope of the convention expanded to also recognise soundscape.

However, the framework enshrined in these conventions is based on a hierarchisation of the senses which dates back many centuries. The tangible/intangible dichotomy has been criticised exactly because it perpetuates an oculo-centric worldview, where the sense of vision dominates other senses. In his 1992 book *Non-Lieux* (Non-Places; [16], Marc Augé made a pivotal contribution to the anthropology of space and supermodernity, introducing a multisensory approach to understanding the cultural significance of urban spaces. Smellscape was advanced as a constituent part of place-making in cultural heritage sites as well as in museum exhibition design [17], and this is paralleled in soundscape studies [18, 19]. Firat [20] argued that sounds are in fact tangible because “any sensory modality which can be preserved with digital methods should be regarded as tangible heritage” (p. 3–5). Given their ephemerality, sounds and smells are generally felt to be “abstract phenomena rather than cultural objects”, and thus associated with the intangible heritage (p. 9). This ambiguity might be a reason why “acoustical heritage remains undervalued as a distinct category worthy of preservation” [21].

**Noise Directive.** In the European Union, the *Environmental Noise Directive* [22] obliges member states to assess and manage environmental noise. The directive emphasizes the importance of protecting quiet areas to mitigate the harmful effects of noise pollution, annoyance, and stress. The core concept of Quiet Areas is applied to cities, agglomerations (villages), and the open country (rural areas). EU member states are obliged to set noise limits, implement noise abatement measures, and designate quiet areas. Currently, about 18% of the EU is considered ‘quiet’, but 33% is affected by excessive noise [23].

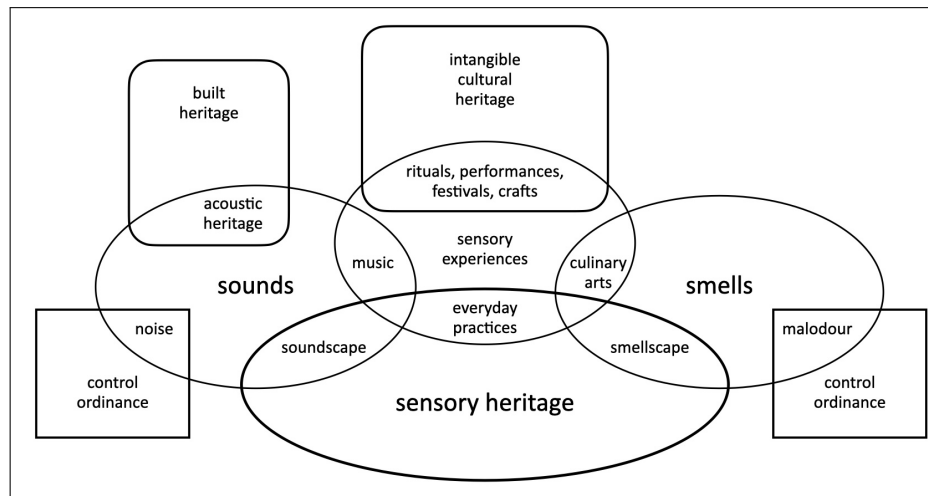
### 2.2 Hong Kong

In Hong Kong, the term ‘sensory heritage’ is not currently found in law texts or regulatory frameworks. We will





# FORUM ACUSTICUM EURONOISE 2025



**Figure 1.** Sensory heritage, soundscape, smellscape, regulatory frameworks, and related concepts

briefly discuss the most important related concepts, i.e. built heritage and intangible cultural heritage, as well as control ordinances for noise (unwanted sound) and malodour (bad smell).

**Built heritage.** The *Antiquities and Monuments Office* is responsible for determining and listing items (<https://www.amo.gov.hk/en/historic-buildings/>). Buildings may be included if they satisfy criteria such as having “historical interest” (evidencing a relationship with important historical incidents, periods or events) or “architectural merit... beauty... authenticity... or rarity”. Some historic buildings may “have significance in terms of exhibiting cultural identity and / or in terms of extending the collective memory of the community”. The concept of tangible cultural heritage is well established in Hong Kong: it is even represented in secondary school teaching materials (see ‘education programs’ on the AMO website).

**Intangible cultural heritage.** In Hong Kong, ICH is classified and determined by the *Intangible Cultural Heritage Office*, which holds an inventory and decides on the items that fulfil the selection criteria. For example, rituals and practices at Chinese temples [24]. To be included, items must: be transmitted from generation to generation within particular groups or areas; reflect Hong Kong’s history and development; facilitate community relations and provide a sense of identity and continuity in the community; be compatible with international human rights instruments (see the ‘representative items listing’ on the website). The public is in-

vited to nominate items for classification and/or protection, and some ICH items may benefit from funding. For example, there are private museums aimed at preserving and promoting food and beverage culture, such as Sam Tung Uk [https://www.icho.hk/tc/web/icho/sam\\_tung\\_uk\\_museum.html](https://www.icho.hk/tc/web/icho/sam_tung_uk_museum.html) and Tao Heung Food Museum <https://www.taoheung.com.hk/tc/museum/introduction/index.html>.

**Nuisance Control Ordinances.** Law texts regulate noise pollution, air pollution, and malodour. For sounds and soundscape, the *Noise Control Ordinance* (NCO) [25] indicates acceptable levels (noise exposure dosage) from construction sites, alarms, and transport. It acknowledges sound nuisance in the ‘general neighbourhood’ such as “any musical or other instrument... game or pastime... air-conditioning” and so forth (NCO II:5) without establishing exposure limits. For smell and smellscape, one may consult the *Air Pollution Ordinance* (APO) [26], while noting that the word “smell” is absent, though “objectionable odours” are controlled. For example, the subsidiary ‘Open Burning’ part of the APO considers nuisance from joss sticks in Chinese temples [24] and food cooking in open spaces [27].

## 2.3 Mainland China

**Intangible cultural heritage.** China joined the UNESCO convention [14] in 2004, only one year after it was adopted. Regulations are enacted at four levels (national, provincial, municipal, and county level). The *Min-*



# FORUM ACUSTICUM EURONOISE 2025

istry of Culture and Tourism has the overall responsibility for ICH in three areas (traditional craftsmanship, arts and medicine) and designation of 'ICH-inheritors'. Municipal and county level offices regulate commercial activities as means to collaborate with different policy initiatives, described as either production- or consumption-based, to attract private investment into safeguarding ICH through tourism bureaus and community-based organizations [28].

**Nuisance control.** The *National Law on Noise Pollution Prevention and Control* [29] is similar to that of Hong Kong in its focus on nighttime construction, loud vehicles, and sets standards for neighbourhood noise [社会生活噪声] from commercial entertainment venues, music, pets and so forth. For smell, the *Air Pollution Prevention and Control Law* [30] includes regulations directed at malodour [恶臭气体].

## 2.4 Case studies

**Oyster farming.** For a traditional, multifaceted activity with clear connections to smell and taste, consider oyster farming. More than 83% of the world's oysters are produced in China. Near Hong Kong, there has been oyster farming in Shajing, Zhujiang, since the Northern Song Dynasty (960-1127). After development of Shenzhen's Bao'an Airport at the end of the 1980s, farming relocated to Taishan. The oyster raising practice of Shajing was listed as an intangible cultural heritage, municipally in 2007 and by the province, in 2022 [31]. A comparison can be made with Hong Kong's Lau Fau Shan, which traces its history 700 years back [32]. Supported by the Chamber of Commerce, local groups now organise a yearly festival.

**Soundscape.** In 2021, a national law was passed to set up a network of environmental quality monitoring stations, safeguarding the quality of air, soundscape, and water [33]. As for the acoustic environment, part of this initiative is the collection of a digital repository of natural sounds, such as birds and insects, in order to control excessive background noises (Bastille 2024). A notable example is Chongqing's ambition to promote quiet areas [34], along the lines of the EU directive [22] previously discussed.

## 2.5 Summary

It is important to note that the examples of legislation from Hong Kong and Mainland China we have seen show that, officially, the main concern is the control over negative aspects of sounds and smells. By contrast, the positive aspects of soundscape and smellscape in shared, public

spaces that might be worthy of protection and promotion are not covered in either Hong Kong or Mainland China. The protection of the sensory heritage is only starting to be recognised in France, and we will closely monitor how it might percolate in the European Union.

Clearly, the concept of sensory heritage is not yet treated with the same attention that has been given the built heritage and intangible cultural heritage for many decades. No protection is offered to culturally valued sounds or smells in Hong Kong, and this means that economic opportunities might be neglected, such as the promotion of certain sounds and smells in tourism as well as in building and maintaining cultural identity. If valuable sounds and smells are not identified, important parts of the sensory heritage might be lost before we fully understand the role they play. As Bembibre says, "we are neglecting opportunities to strengthen the strategic agendas of (inter)national heritage bodies with a sensory dimension, which could enhance their value and accessibility" [35].

While agreement about heritage might be easier to find when it comes to visual or aural perception than what it is for smell, taste, or touch, we believe that time is ripe to reevaluate the notion of what constitutes *heritage*. Taking a multisensory approach, we adopt the Burra Charter's definition of cultural significance as the "sum of aesthetic, historic, scientific, and social values" [36], because here, 'aesthetic value' explicitly includes the "smells and sounds associated with a place and its use" (p. 120).

## 3. CONCLUSION

Multisensory aspects have increasingly gained importance in urban studies. For example, *Odeuropa* is a large EU research project on heritage smells (<https://odeuropa.eu/>), and *Multimodal Hong Kong* is a project on soundscape and smellscape [37]. With the present paper, we place the searchlight on the positive impact of sounds and smells to strengthen identity and develop new avenues for virtual tourism. Going forward, this research will have impact on educational and professional levels, by identifying sensory heritage and by producing policy recommendations to protect and promote culturally valued sounds and smells. To achieve these goals, the project 1) reviews international standards for soundscape and smellscape; 2) compares relevant regulatory frameworks in Hong Kong with mainland China and the European Union, notably France; 3) reviews current research in sensory heritage; 4) develops local and international networks and 5) identifies prospects for the digitalisation of sensory heritage.







# FORUM ACUSTICUM EURONOISE 2025

## 4. ACKNOWLEDGMENTS

The work presented in this paper was partially supported by a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China to the first author (GRF #11605622 – CityU project #9043455).

## 5. REFERENCES

- [1] T. B. Culture, Sports, “Development blueprint for hong kong’s tourism industry 2.0.”
- [2] ISO, “12913-1: 2014 acoustics—soundscape—part 1: Definition and conceptual framework.”
- [3] A. Mitchell, T. Oberman, F. Aletta, M. Erfanian, M. Kachlicka, M. Lionello, and J. Kang, “The soundscape indices (SSID) protocol: A method for urban soundscape surveys—questionnaires with acoustical and contextual information,” vol. 10, no. 7, p. 2397.
- [4] J. D. Porteous, “Smellscape,” vol. 9, no. 3, pp. 356–378.
- [5] V. Henshaw, *Urban smellscape: Understanding and designing city smell environments*. Routledge.
- [6] J. Xiao, “Smell, smellscape, and place-making: A review of approaches to study smellscape,” in *Handbook of research on perception-driven approaches to urban assessment and design*, pp. 240–258, IGI Global.
- [7] Bastille, “China developing natural sound database to better tackle urban noise pollution.”
- [8] S. Lenzi, J. Sádaba, and P. Lindborg, “Soundscape in times of change: Case study of a city neighbourhood during the COVID-19 lockdown,” vol. 12, no. 412.
- [9] AFP, “France passes ‘sensory heritage’ law after plight of maurice the noisy rooster,”
- [10] P. Morel-à-L’Huissier, “[rapport sur] la loi visant à définir et protéger le patrimoine sensoriel des campagnes françaises.”
- [11] R. Maiolo, “Trouble anormal de voisinage - une loi pour limiter les conflits - actualité - UFC-que choisir.”
- [12] UNESCO, “The world heritage convention: CONCERNING THE PROTECTION OF THE WORLD CULTURAL AND NATURAL HERITAGE.”
- [13] UNESCO, “International round table on ‘intangible cultural heritage – final report’.”
- [14] UNESCO, “Convention for the safeguarding of the intangible cultural heritage. paris: Secretariat of the united nations..”
- [15] UNESCO, “International round table on ‘intangible cultural heritage – working definitions’.”
- [16] M. Augé, *Non-places: Introduction to an Anthropology of Supermodernity*. verso.
- [17] C. Bembibre and M. Strlič, “Smell of heritage: a framework for the identification, analysis and archival of historic odours,” vol. 5, no. 1, pp. 1–11.
- [18] P. Jordan, “Valuing the soundscape-integrating heritage concepts in soundscape assessment,” vol. 255, pp. 5694–5702, Institute of Noise Control Engineering.
- [19] P. Jordan and A. Fiebig, “New descriptors for capturing perceptions within historic soundscapes,” vol. 261, pp. 3489–3496, Institute of Noise Control Engineering.
- [20] H. B. Firat, “Acoustics as tangible heritage: Re-embodying the sensory heritage in the boundless reign of sight,” vol. 50, no. 1, pp. 3–14.
- [21] F. Aletta, “Defining acoustical heritage: A qualitative approach based on expert interviews.” *Sensory Dimensions in Heritage and Beyond: Exploring Soundscapes and Smellsapes*.
- [22] “Directive 2002/49/EC of the european parliament and of the council of 25 june 2002 relating to the assessment and management of environmental noise - declaration by the commission in the conciliation committee on the directive relating to the assessment and management of environmental noise.”
- [23] G. Licitra, C. Chiari, E. Ascari, and D. Palazzuoli, “Quiet area definition in the implementation of european directive 2002/49/EC,” vol. 24, no. 2.
- [24] L. H. Lam, R. Yue, Y. Kam, and P. Lindborg, “Perceptions of chinese temples through soundscape and smellscape: A case study at wong tai sin,” in *Proceedings of Forum Acousticum - Euronoise*.
- [25] H. K. Government, “Cap. 400 noise control ordinance of hong kong legislation.”
- [26] H. K. Government, “Cap. 311 air pollution control ordinance.”





# FORUM ACUSTICUM EURONOISE 2025

- [27] R. Yue, P. Lindborg, L. H. Lam, A. Lin, and Y. Kam, “Perceptions of chinese temples through soundscape and smellscape: A case study at wong tai sin,” in *Proceedings of Forum Acousticum - Euronoise*.
- [28] Y. Xu, Y. Tao, and B. Smith, “China’s emerging legislative and policy framework for safeguarding intangible cultural heritage,” vol. 28, no. 5, pp. 566–580.
- [29] P. R. of China, “Law of the people’s republic of china on the prevention and control of noise pollution.”
- [30] P. R. of China, “\_ (air pollution prevention and control law of the people’s republic of china\_ministry of ecology and environment of the people’s republic of china).”
- [31] S. Archives”, “探寻“沙井蚝”的历史 (looking for the history of shajing oysters).”
- [32] B. Potts, “What will save hong kong’s 700-year-old oyster farms?.”
- [33] C. N. E. M. Centre, “Profile; major responsibilities.”
- [34] R. Deng and Y. Tan, “Chongqing pilots quiet communities to reduce noise pollution.”
- [35] C. Bembibre, “Olfactory heritage: opportunities for policymaking.” *Sensory Dimensions in Heritage and Beyond: Exploring Soundscapes and Smellscapes*.
- [36] ICOMOS, “The burra charter: The australia ICOMOS charter for places of cultural significance,”
- [37] P. Lindborg, F. Aletta, J. Xiao, K. Liew, Y. Matsuda, R. Yue, Q. Jiang, L. H. Lam, and L. Wei, “Multimodal hong kong: Documenting soundscape and smellscape at places of intangible cultural heritage,” in *53rd International Congress & Exposition on Noise Control Engineering (INTER-NOISE 2024)*.

