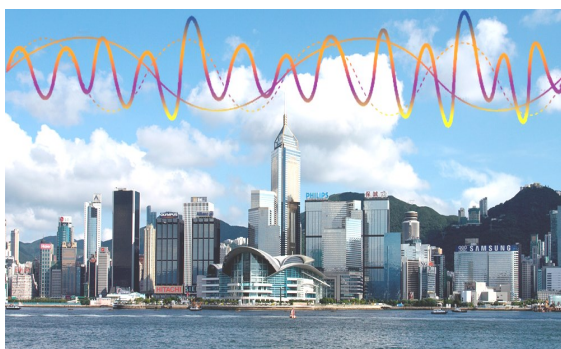


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## The Joint HKIOA – HKPolyU One-Day Symposium

### **Soundscape - Shaping a Better Acoustical Environment for Hong Kong**



#### **INTRODUCTION**

Hong Kong is facing severe and pervasive environmental noise problems. In our dense metropolitan environment, many residential developments are built in close proximity to heavily trafficked expressways and roads; railways; and industrial establishments that many residents are exposed to high level of environmental noise. Hong Kong is in a way very proactive in managing environmental noise, for examples, roadside barriers were built, enclosures erected along new rail lines, airport located far away from city, proactive planning to avoid industrial and residential interface issues etc. However, city size is small but number of residents keeps increasing year and year, which inevitably gives huge burden in keeping environmental noise in bay. The HKIOA is exploring if SOUNDSCAPE could be introduced into Hong Kong planning mechanism so that a more proactive acoustical intervention could be in place to supplement the passive way (like erecting noise barriers etc.) of dealing with our environmental noise problems. The HKIOA has pleasure to invite the world renowned speakers to talk to and discuss with us this important subject.

In this symposium, world-renowned experts from United Kingdom, Germany, Italy and Hong Kong will share their views and experiences in this important issue. The fundamental of soundscape, the way of assessment and key issues for their applications and the related issues would be addressed.

A certificate of attendance will be awarded to participants. This symposium may be considered to meet in part of the Continual Professional Development (CPD) requirements of the Hong Kong Institute of Acoustics.

You are cordially invited to participate and share your views on the topic.

#### **Organizers**



**HKIOA**



**HKPolyU**

#### **General Sponsors**



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SOUNDSCAPE | BIG DATA



#### **SYMPOSIUM VENUE AND DATE**

**Venue:** Regal Ball Room, B1, Regal Hong Kong Hotel,  
88, Yee Wo Street, Causeway Bay, Hong Kong

**Date:** Tuesday, 30 September 2014

**Time:** 8:45 am - 5:00 pm

*An event proudly presented by the HKIOA and  
HKPolyU.*

*An event which you would identify solutions to  
shape the acoustic environment of Hong Kong.  
Acoustic professionals, noise control  
practitioners, architects, town planners,  
researchers, developers etc cannot afford to miss.*

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## Soundscape - Shaping a Better Acoustical Environment for Hong Kong

### HOST ORGANISATIONS

- The Hong Kong Institute of Acoustics
- Department of Mechanical Engineering, The Hong Kong Polytechnic University
- Urban Noise Laboratory, Research Institute for Sustainable Urban Development, The Hong Kong Polytechnic University

### CO-ORGANISERS

- Mechanical, Marine, Naval Architecture and Chemical Division, The Hong Kong Institution of Engineers
- Environmental Division, The Hong Kong Institution of Engineers
- American Society of Mechanical Engineers, The Hong Kong Section
- The Hong Kong Institute of Environmental Impact Assessment
- The BEAM Society
- The Hong Kong Green Building Council

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### SYMPOSIUM ORGANISING COMMITTEE

Mr Maurice Yeung	(HKIOA)	(Chairman)
Ms Grace Kwok	(HKIOA)	(Hon Secretary)
Mr Tom Ho	(HKIOA)	
Prof Li Cheng	(HKPolyU)	
Prof Shui-keung Tang	(HKPolyU)	

### REGISTRATION FEE

The registration fee is

- HK\$1,500 for general participants
- HK\$1,300 for MHKIOA, MHKIEIA or MHKIE
- HK\$700 for full time registered students

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# The Joint HKIOA – HKPolyU One-Day Symposium

## Soundscape - Shaping a Better Acoustical Environment for Hong Kong

### THE SYMPOSIUM PROGRAMME

Time	Program/ Topic/ Activities
08:45 - 09:30	<b>Registration</b>
09:30 - 09:35	<b>Welcome Notes</b> Ms Grace Kwok (Hong Kong Institute of Acoustics)
09:35 - 09:45	<b>Opening Remarks</b> Prof SK Tang (Hong Kong Polytechnic University)
09:45 – 10:30	<b>“A SYSTEMATIC APPROACH TOWARDS PLANNING AND DESIGNING SOUNDSCAPE”</b> Prof Jian Kang (Sheffield University)
10:30 – 10:45	Coffee break
10:45 – 11:30	<b>“THE CONCEPT OF SOUNDSCAPE FACING COLLABORATION AND INTER-DISCIPLINARITY”</b> Prof Brigitte Schulte-Fortkamp (Technical University, Berlin)
11:30 – 12:15	<b>“TECHNIQUES FOR THE DESIGN AND THE EVALUATION OF THE SOUNDSCAPE OF URBAN AND NOT URBAN SPACES”</b> Prof Luigi Maffei (Second University of Naples)
12:15 – 14:15	Lunch Break
14:15 – 15:00	<b>“SOUNDSCAPING AS A TOOL TO ENHANCE THE URBAN ACOUSTIC ENVIRONMENT”</b> Prof Kin-che Lam, JP (Chinese University of Hong Kong)
15:00 – 15:45	<b>“VISUAL AUDIO EFFECT IN SOUNDSCAPE”</b> Dr Chi-kwan Chau and Dr Tracy Choy (Hong Kong Polytechnic University)
15:45 – 16:00	<b>Coffee Break</b>
16:00 – 16:30	<b>Panel Discussion</b> Mr Maurice Yeung (Hong Kong Institute of Acoustics)
16:30 – 16:40	<b>Closing Remarks</b> Prof Li Cheng (Hong Kong Polytechnic University)
16:40 – 17:00	Presentation of souvenirs, photos taking

# The Joint HKIOA – HKPolyU One-Day Symposium

## Soundscape - Shaping a Better Acoustical Environment for Hong Kong

### SPEAKERS



**Professor Jian Kang**, BEngArch MSc (Tsinghua University, Beijing), PhD (University of Cambridge), has been Professor of Acoustics at the University of Sheffield, UK, since 2003. Previously he worked at the University of Cambridge and the Fraunhofer Institute of Building Physics in Germany (Humboldt Fellow). He is distinguished by his work in architectural and environmental acoustics, evidenced by 70+ prestigious engineering-consultancy projects, 70+ funded research projects, and 800+ publications. His work on acoustic theories, design guidance and products has brought major improvements to the noise control in underground stations/tunnels and soundscape design in urban areas. He is a Fellow of the UK Institute of Acoustics, a Fellow of the Acoustical Society of America, a UK Chartered Engineer, and the Editor in Environmental Noise for Acta Acustica united with Acustica (European Journal of Acoustics). He chairs the Technical Committee for Noise of the European Acoustics Association; the WUN (Worldwide Universities Network) Environmental Acoustics Network; and EU COST Action on Soundscape of European Cities and Landscapes. He was awarded John Connell Award 2011, and UK Institute of Acoustics Tyndall Medal 2008.

#### ***"A SYSTEMATIC APPROACH TOWARDS PLANNING AND DESIGNING SOUNDSCAPE"***

*Whilst most previous studies on soundscape in urban open public spaces have considered soundscape as a passive perception factor, it is important to put soundscape into the intentional planning and design process comparable to landscapes, integrating the theories of soundscape. In this talk a framework on key factors in soundscape planning and design in urban open public spaces is proposed, including four components: characteristics of each sound source, acoustic effects of the space, social/demographic aspect of the users, and other aspects of the physical conditions. Moreover, the potentials of planning and designing the four key components, namely sounds, space, people and environment, are explored. Furthermore, two design tools/models for soundscape in urban open public spaces are outlined, including an auralisation software package for design modification and public participation, and a neural network model for predicting acoustic comfort based on various design variables. Some planning and design guidelines are also introduced.*



**Professor Dr Brigitte Schulte-Fortkamp** is a Professor of Psychoacoustics and Noise Effects at the Institute of Fluid Mechanics and Engineering Acoustics, Technical University, Berlin, Germany. She has been a research professor at MIT Boston, Osaka University, and Université Pierre et Marie Curie, Paris. She is a Fellow of the Acoustical Society of America and an Associate Editor of the Journal of the Acoustical Society of America. Her research activities include Psychoacoustics, Acoustic Ecology and Soundscape. Among others, she served as co-chair of the European Committee COST Action TD 082011-201204 "Soundscape of European Cities and Landscapes". She is not only a member of ISO/TC 43/SC 1/WG 54 "perceptual assessment of soundscape quality" but also project leader for the NWIP 12913-2 Acoustics-Soundscape-Part 2: methods and measurements in soundscape studies. She is a Distinguished International Member of INCE USA. In 2011-2012 Professor Schulte-Fortkamp was serving as Vice President of the Acoustical Society of America. In 2012 she received the European Soundscape Award.

#### ***"THE CONCEPT OF SOUNDSCAPE FACING COLLABORATION AND INTER-DISCIPLINARITY"***

*The multidimensional concept of Soundscape puts emphasis on the way the acoustic environment is perceived and understood by the individual and by society (ISO/TC 43/SC 1/WG 54). The implementation of the Soundscape approach accounts for people's concerns and integrates the noise-exposed people as local experts in city planning processes. Moreover it counts for inter-disciplinarity of city planners, architects, acoustic professionals etc. To establish the Soundscape concept and the Soundscape approach there is the need to advise the respective local actors and stakeholders in communities - meaning to use the resources given with respect to also future generations and it's with respect to socio cultural, aesthetic and economic effects. Such activities will provide tools and essential knowledge which are required for the design and planning of sustainable environments which will be supportive to wellbeing and health.*

# The Joint HKIOA – HKPolyU One-Day Symposium

## Soundscape - Shaping a Better Acoustical Environment for Hong Kong



**Professor Luigi Maffei**, PhD, Full Professor of Building Environmental Control and Applied Acoustics at the Second University of Naples, Naples, Italy; Director of the Lab on Built Environment Control at the Department of Architecture and Industrial Design; Director of the Master in Acoustics and Noise Control at the Second University of Naples; Coordinator of international didactic projects cofounded by the Italian University and Research Ministry: Medacoustics Master “Acoustics and Noise Control in Mediterranean Countries” with the Yildiz Technical University of Istanbul, Turkey, Summer School on “Built Environment Control” with the Togliatti State University, Russia; Co-coordinator of the EAA European Acoustics Association Summer/Winter School Program on Acoustics, Ljubljana (Slovenia) September 2010, Meran (Italy) March 2013; General Secretary (2004-2007) and President (2008-2010) of the European Acoustics Association, EAA; Vice President of the I-INCE Institute of Noise Control Engineering (2010-2015); President of the Acoustical Society of Italy (2014-2017); Chairman of the European Conference on Noise Control EuroNoise 2003; Member of advisory committee and organizer and chairman of structured sessions of several international conferences; Chair of the WG5 (Outreaching and Training) of the COST Action EU-TD0804 “Soundscape of European Cities and Landscape”, year 2009-2013; Scientific Coordinator for Second University of Naples for the ITN Marie Curie Project “SONORUS- Urban Sound Planner” FP-7, years 2012-2016; Scientific manager of research contracts on acoustics and noise control topics drawn up with public and private firms.

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### **“TECHNIQUES FOR THE DESIGN AND THE EVALUATION OF THE SOUNDSCAPE OF URBAN AND NOT URBAN SPACES”**

*In the last decade several studies carried out on the Soundscape approach have clearly shown the benefits achievable by this integrated and multidisciplinary topic. In fact the assessment of a sonic environment depends not only on the acoustic features of the sounds, but also on the information content and the context in which they are perceived. If the perceived quality of the sonic environment is properly taken into account, it can provide useful hints towards a more effective and sustainable improvement of environmental quality. Policy makers, under several economic and demographic conditions, have to plan and manage new infrastructures, new transportation technologies, new urban plans. It is then extremely important to develop techniques that permit to predict in a sustainable way the impact of these projects on the perceived quality of the sonic environment and involve in the whole process the local population. Soundwalks and social surveys taking place in real life settings offer significant advantages in order to get reliable and unprecedented insights into individuals' experiences in their environments. However, in general, they can be only a support to assess future scenarios as consequence of urban and not urban transformations. On the other side, the techniques of auralization and visual rendering available today make it possible to create virtual environments which can be, in an immersive way, experienced and evaluated by people in laboratory settings and, therefore, their ratings can be considered at the design stage in order to match their preferences as much as possible. The aim of this presentation is to show several case studies in which the application of these techniques for the design and evaluation of the Soundscape have been a valid support for policy makers' decisions.*

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## Soundscape - Shaping a Better Acoustical Environment for Hong Kong



**Professor Kin-che LAM, JP** is Adjunct Professor of The Chinese University of Hong Kong (CUHK) and the Griffith University, Australia. He received university education at the University of Hong Kong and obtained his PhD from the University of New England, Australia. After serving CUHK for 33 years, he retired in 2012. During that period, he established the Centre of Strategic Environment for China and the Institute of Environment, Energy and Sustainability. He has held visiting professorships at the Chinese Academy of Science, Nankai University, East China Normal University and Fudan University in China. He is currently an environmental consultant (contract) of the World Bank. Prof Lam's research interests include environmental noise, soundscape and environmental assessment. In the area of environmental acoustics, he developed methodologies for urban noise surveys, probed into human annoyance response to multiple noise sources and experimented with the use of noise mapping in compact and dense cities. He has authored over 100 referred academic articles and is now the Associate Editor (Environmental Noise) of *Acta Acustica united with Acustica*, the journal of the European Association of Acoustics. In Hong Kong, Prof. Lam has served on a number of advisory committees of the Hong Kong SAR Government, including the Advisory Council on the Environment (Chair of EIA Sub-committee 1994-2002; Chairman 2003-2009); Council on Sustainable Development and various Appeal Boards on Noise, Air Pollution and Town Planning. In recognition of his contributions, he was appointed a Justice of Peace (JP) in 2002 and bestowed the Silver Bauhinia Star by the Hong Kong SAR Government in 2006. Professor Lam is an Honorary Fellow of The Chartered Institution of Water and Environmental Management, The Hong Kong Institute of Acoustics and The Hong Kong Institute of Environmental Impact Assessment.

### ***"SOUNDSCAPING AS A TOOL TO ENHANCE THE URBAN ACOUSTIC ENVIRONMENT"***

*This presentation examines the need, constraints and opportunities of soundscaping as a tool to enhance the urban acoustic environment. It begins with an exposition of the noise exposure profile of the urban population and evaluates the effectiveness of previous noise control and noise planning measures. The relevance of recent overseas soundscape studies to compact cities such as Hong Kong will be explored. Emphasis will be placed on the potential benefits of soundscaping in enhancing the health and well-being of the urban inhabitants. The presentation will discuss how the concepts of soundscape can be applied to the unique urban forms of Hong Kong.*



**Dr Chau** is currently an Associate Professor in the Department of Building Services Engineering, The Hong Kong Polytechnic University. His major research interests are on revealing the interrelationships between human beings and environment, in particular with regard to noise and air pollution, with an ultimate aim to promote sustainable built development in high rise dense cities. Over the years, he has successfully formulated numerous statistical and econometric models for portraying human exposure and annoyances to noise, and for revealing individual preferences for sustainable development. Besides, he has developed protocols for estimating air and noise exposures as well as economic models for examining the costs and benefits associated with noise and indoor air quality improvement.



**Dr Choy** is currently an Associate Professor in the Department of Mechanical Engineering, The Hong Kong Polytechnic University. Her research interests include aerocoustics, vibroacoustics in duct noise control, silencer design, building acoustics, environmental noise as well as sound quality and psychoacoustic. Recently, she conducted research studies focusing on Urban Soundscape regarding the inter-relationship between physical and psychoacoustic parameters and human perception in urban area in Hong Kong. She is also a member of Institute of Acoustics in UK and is serving as a reviewer for Journal of the Acoustical Society of America.

### ***"VISUAL AUDIO EFFECT IN SOUNDSCAPE"***

*Noise annoyance at homes can be reduced not only by lowering traffic noise level, but also by placing appropriate types of sceneries nearby. This talk will discuss the visual effects of different types of sceneries perceived at homes, which include greenery, sea, river and vegetative barriers, on moderating the annoyances induced by road traffic noise. Also, the interrelationship between the physical acoustical parameters and human perception in recreational areas near homes, and the corresponding noise annoyance will be discussed. The knowledge should provide useful guidance for future house, land and town planning.*

**The Joint HKIOA – HKPolyU One-Day Symposium**  
**Soundscape - Shaping a Better Acoustical**  
**Environment for Hong Kong**

**REGISTRATION**

**30 September 2014 (Tuesday)**

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☐ Member of \* HKIOA / HKIEIA / HKIE (HK \$1,300)  
☐ Full time registered students (HK \$700)

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**Symposium Secretariat**  
c/o Ms Yoyo Shek

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