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Hong Kong Institute of Acoustics

Chairman's Report 2022/2023

1 Introduction

It has been my pleasure to start serving as Chairman of HKIOA in the year term 2022/2024 since the last AGM in May 2022.

I would like to take this opportunity to express my appreciation and gratitude to the dedicated support and effort made by the Executive Committee and organizing committee of various activities in past year.

We all know that most of the time in past year term was still under COVID19 pandemic situation. In second half of year 2022, there were still various social distancing measures and mandatory requirement. In spite of this, we have still continued to facilitate professional developments through managing various activities such as by organizing technical webinars and educational training. At the same time, our membership has also grown steadily.

This year marks the re-start of the world after pandemic. With lifting of various measures such as mask-wearing and vaccination requirement in Hong Kong and elsewhere outside, all kinds of social activities have resumed rapidly. HKIOA have also organized a visit to theatre in March 2023. Not mentioned AGM in 2023 and the dinner afterwards.

2 Executive Committee of the Institute

The Executive Committee met around monthly and managed the business of the Institute, organized and promoted various activities to foster professional development of our members and recognition of the acoustic profession. The 2022/2023 Executive Committee comprises a Chairman, 12 elected Committee Members, 3 Co-opted Member. Moreover, the Immediate Past Chairman and the 2 Honorary Advisers had advised the Committee on various matters of the Institute.

2.1 Committee Members (Session 2019 – 2020)

Chairman	Dr Calvin CHIU
Hon Secretary	Mr Aaron LUI
Hon Treasurer	Mr Henry Chan
Co-Chairman, Membership SC	Mr Chris KWOK Mr Aaron LUI Mr Ken WONG
Co-Chairman, Professional Development & Education SC	Dr Randolph LEUNG Mr Ken WONG Dr Mors LEUNG (Co-Opt)
Co-Chairladies, External Affairs SC	Ms Claudine LEE



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	Dr Cindy CHEUNG (Co-Opt)
Co-Chairman, Environmental Noise SC	Mr Alson PANG Mr Franki CHIU
Co-Chairman, Construction Noise SC	Mr Ken WONG Mr Joe LEUNG
Co-Chairman, Noise & Vibration SC	Ir Wilson HO Dr Randolph LEUNG
Chairman, Indoor Acoustic SC	Mr Wai Him TANG Dr Jeffrey TAM (Co-Opt)
Chairman, IT SC	Mr James CHOI Dr Mors LEUNG (Co-Opt)
Chairman, Publication SC	Mr James CHOI Dr Cindy CHEUNG (Co-Opt)
Chairman, Activities SC	Mr Chris KWOK Dr Cindy CHEUNG (Co-Opt)
Chairladies, Women in Acoustics SC	Ms Claudine LEE Dr Cindy CHEUNG (Co-Opt)

2.2 Others:

Immediate Past Chairman	Mr William FUNG
Hon Adviser (Institution Advancement & Discipline)	Prof. K. C. LAM Ir KK IU

3 Finance

The Institute remained in a healthy financial position for the year ended 31 December 2022 despite that we waived the membership subscription fee for year 2022. The accounts of the Institute have been audited by an external independent auditor and details of the financial situation and tax liability would be provided and explained by the Honorary Treasurer, Mr. Henry Chan, in a separate report.

4 Membership

The number of membership applications has gradually increased as compared with last year. The Institute has continued to receive enquires from local practitioners in acoustics expressing their interest in joining the Institute. From last AGM to end-April this year, we have growth of 9 numbers of Corporate Members and 21 numbers of Associate Members. We are hoping that the Institute will continue to grow with more new members coming from various disciplines, which in turn, will enrich the knowledge and the culture of the Institute.

4.1 Membership Profile

The trend of membership and its profile up to 30th April 2023 are given as follows:



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Grade	31/5/12	21/2/13	21/2/14	12/3/15	19/2/16	28/2/17	15/3/18	1/3/19	30/4/20	28/2/21	30/4/22	30/4/23
Hon. Fellow	3	4	4	4	4	4	4	4	4	4	4	4
Associate Members	74	74	80	86	93	76	73	82	86	91	101	122
Fellows	21	21	21	21	21	18	19	21	21	21	21	22
Members	194	205	210	231	242	235	250	260	275	277	281	290
Students	119	119	120	120	120	226	226	371	341	341	280	276
Total	411	423	435	462	480	559	572	738	727	734	687	714

A new class of Membership, namely Sponsor Member, was established since January 2011 and opened to firms, organizations or persons engaged in or having an interest in acoustics. An annual subscription was required. Staffs of a Sponsor Member would gain better vision and wider exposure through participating events and activities organized by the Institute to keep abreast of the acoustics development while enjoying member's privileges and price. Representatives of Sponsor Members will receive flyers, notifications and publications of the Institute from time to time. Full details are available from the HKIOA website.

4.2 Student Branch

One of the key directions of the Institute is to nurture the growth and development of the younger generation, and to better support the growth of the Student Branch.

We have Adelaide Lo and Bobby Lee representing the Morrison Hill IVE Student Branch and the Shatin IVE Student Branch respectively.

The handing-over ceremony of the PolyU Student Branch, the Morrison Hill IVE Student Branch and the Shatin IVE Student Branch would be held after the Chairman's Report in the AGM.

5 Education

5.1 Professional certificate on acoustics, noise and vibration control

HKIOA with support from The Environmental Management Association of Hong Kong (EMAHK), The Hong Kong Institute of Environmental Impact Assessment (HKIEIA), the Hong Kong Institute of Qualified Environmental Professionals (HKIQEP), The Chartered Institution of Water and Environmental Management (CIWEM) and The Hong Kong Institute of Environmental Protection Officers (HKIEPO) have organized a course of professional certificate on acoustics, noise and vibration control and was successfully completed in September to October in 2022.

Indeed, the HKIOA has suspended the course from year 2019 to 2021 for the purpose to



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restructure the programme. After restructure exercise, we have got compulsory and elective modules in our courses. The topic of compulsory modules include basic acoustics principle, architectural acoustics, noise control & ordinance, noise pollution sources and impacts, noise prediction modelling, calculation of road traffic noise methodology, experience and practice solutions on road traffic noise assessment, hands-on experience on road traffic noise measurement and latest developments in instrumentation, practice on onsite road traffic noise measurement, and noise monitoring and measurement. Elective modules are rolling out in 2023 and we have two elective modules including basic soundscape and noise source measurements and mitigations for railway, construction sites and fixed plants in May and June this year. Just in case you are interested in some specific topics that are not adequately covered at present, you are welcomed to provide feedback to HKIOA for our continuous improvement purpose.

It is notable that person which successfully completed two compulsory modules plus elective module with overall not less than 40 hours are considered fulfilling the membership requirements of the HKIOA as have been educated in acoustics or in a discipline relevant to the practice of acoustics.

6 Activities

The Institute organized various activities to keep our members abreast of the latest trends and development in noise and acoustics.

Webinars for vastly different topics were conducted in 2022/23 term. Most of the webinars are organized by our indoor acoustic SC; and noise & vibration SC.

The webinars cover topics including (1) practical application of innovative noise mitigation device for piling work; (2) how to gauge performance of resilient sports flooring system; (3) real-life lift noise problem and vibration control measures; (4) construction noise control practice outside Hong Kong; (5) metamaterial, (6) electro-acoustic system application, etc.

We fostered partnership and synergy with other educational / professional institutions for some of these activities. We also thank Chartered Institute of Plumbing and Heating Engineering to co-organize a webinar with HKIOA, and with representative from both sides to share the knowledge to members of both institutes.

In most of these activities, we also gained support from institutes including EMAHK, HKIEIA, HKIQEP, CIWEM and HKIEPO.

The table below is a brief summary and highlights of some of the events during the 2022/2023:



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Date	Activities
16-6-2022	Webinar on Piling Noise Reduction by Magnetic Tuned Mass Damper (MTMD)
23-6-2022	Webinar on a more precise method in evaluating the acoustical performance of resilient sports flooring system
7-7-2022	Webinar on Lift Noise and Vibration Control Technique
26-7-2022	Webinar on Innovative Construction Noise control in Singapore
29-9-2022	CIPHE-HKIOA Joint Webinar – Acoustic Concerns and Treatment in Hydraulic Installation
15-11-2022	Acoustic Metamaterial Webinar Series – Topologically Protected Wave Propagation in Acoustic Metamaterials
8-12-2022	Indoor Acoustics Webinar Series – Latest Technology in Variable Room Acoustic System
13-3-2023	Indoor Acoustics Technical Seminar at Kwai Tsing Blackbox Theatre – Immersive Sound and Audio Technology
14-3-2023	Indoor Acoustics Webinar Series – Studio Acoustics, New Developments in Predictive Software

6.1 Construction Noise Webinar Series – Piling Noise Reduction by Magnetic Tuned Mass Damper (MTMD)

The technical webinar was held on 16 June 2022, and was presented by Mr. Wylog Wong, Design Manager of Acoustics Innovation Limited, and Mr Allen Wong, Environmental Engineer of Build King Civil Engineering Limited. A total of 187 participants attended the webinar.

The webinar focused on a case study on the implementation of the magnetic tuned mass damper which was tailor-made for the sheet piling noise abatement at a construction site in Tung Chung East. Wylog shared the identification of locations and frequencies of major noise sources from site observations, acoustic imaging by acoustic camera and Finite Element Analysis modelling. Allen shared the project background, and site constraints, videos demonstrating the damper installation and removal process, and his user experience on the damper.

6.2 Indoor Acoustics Webinar Series – A More Precise Method in Evaluating the Acoustical Performance of Resilient Sports Flooring System

The technical webinar was held on 23 June 2022 and was presented by Mr. James Bligh and Mr. Ramy El Kawkgi from Pliteq on the complex challenges of measurement and prediction uncertainties arising from variations in the structural subfloors and an



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alternative technique to evaluate the acoustic performance of resilient sports floors. 62 participants attended the webinar.

Ramy listed and explained the major considerations in deciding mitigations to be applied. James showed a video demonstrating their standard test rig for heavy impact testing, demonstrated a quantitative analysis of a typical floor system and shared their experience on the use of a standard calibrated test sample sheet for collecting in-situ baseline acoustic data under better-controlled testing conditions. He also showed the predicted and measured noise spectra obtained from sites to demonstrate the accuracy of the prediction method, and encouraged consultants to use the prediction method as well as their resources and support.

6.3 Indoor Acoustics Webinar Series – Lift Noise and Vibration Control Technique

The technical webinar was held on 7 July 2022. 78 participants attended the webinar. The topic was presented by Dr. Mors Leung, Technical Director of Architectural Acoustics Limited, and Mr. Denghua Ma, Technical Director of Shenri Elevator's Noise Abatement Center in Shenzhen.

Mors shared a few cases on his project experience on the troubleshooting of lift noise and vibration problems, which includes the identification of whether the main noise propagation path is airborne or structureborne, and the improvement after acoustic treatment. He shared some soundtracks of noise from problematic lifts, and discussed the investigation, findings and solutions, and a laboratory setup investigating noise from guide shoes and guide rails and quantifying the effectiveness of the planned mitigation measure.

Mr. Ma shared some recent lift noise problems from high speed lifts at skyscraper residential buildings due to improper design of vibration isolation. He shared a few case studies, and explained some common errors and misconceptions in lift noise and vibration control design that he observed in the Mainland China.

6.4 Construction Noise Webinar Series – Innovative Construction Noise Control in Singapore

The technical webinar was held on 26 July 2022 and was presented by Dr. Vincent Hii (Director of Affinity Engineering Consultancy Pte. Ltd.) on an overview of construction industry in Singapore, local regulations and requirements, government support on innovative noise control measures, construction noise impact assessment and noise management plan, construction noise troubleshooting and innovative control measures case study. Vincent introduced and explained the common practice of noise impact assessment and noise management plan and showcased a range of examples of



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conventional noise control measures and innovative measures in Singapore. The webinar was well received by 179 attendees.

6.5 CIPHE-HKIOA Joint Webinar – Acoustic Concerns and Treatment in Hydraulic Installation

The Technical Webinar Acoustic Concerns and Treatment in Hydraulic Installation was held on 29 September 2022. This is the first joint webinar with the Chartered Institute of Plumbing and Heating Engineering (CIPHE) and HKIOA. The webinar was presented by Mr. Ben Yuen from CIPHE and Dr. Jeffery Tam from HKIOA.

Mr. Yuen explained the general principles in plant room design planning to reduce potential noise nuisance to noise sensitive receiver. He also shared the detailed design concepts against noise from pump sets, including the cause of noise problems, and the control of pipeline noise. Apart from the equipment, Mr. Yuen also showed different noise sources arising from fitting and accessories along the supply network. His presentation covered a comprehensive review of all possible noise sources in a pumping and drainage system.

Dr. Tam on the other hand presented the fundamental acoustic knowledge to the members covering noise criteria, sound insulation, reverberation noise control and vibration isolation principle. He also shared practical solutions to noise and vibration control for equipment, including some real-life examples of installation defects to the members.

A total of 97 participants attended the webinar. The Webinar received many favorable responses from both CIPHE and HKIOA members.

6.6 Acoustic Metamaterial Webinar Series – Topologically Protected Wave Propagation in Acoustic Metamaterials

The technical webinar was held on 15 November 2022. The topic was presented by Ir Prof. C. W. Lim, Professor from Department of Architecture and Civil Engineering of the City University of Hong Kong. A total of 113 participants joined the webinar.

Ir Prof. Lim began with explaining the physical nature and the uniqueness of metamaterial as generally a periodic design which has a physical property in macroscopic scale different from any existing natural materials. Ir Prof. Lim presented an acoustic metamaterial design utilizing the physical property of a tunable bandgap material module. By combining metamaterials in different tunings as a material array, the acoustic wave can propagate in the designed path within the metamaterial as a waveguide. The design performance is established theoretically and validated numerically.



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6.7 Indoor Acoustics Webinar Series – Latest Technology in Variable Room Acoustic System

The technical webinar was held on 8 December 2022 through ZOOM platform. 83 participants attended the Webinar. Mr. Pellowe from Meyer Sound presented the theory of electronic sound system to generate the reverberation sound effect in room. He explained the application of their systems and how it contributed to the room acoustics quality. John also shared many real project experiences and the outcome of the acoustic improvement in previous projects. The webinar was well received by the participants.

6.8 Indoor Acoustics Technical Seminar at Kwai Tsing Blackbox Theatre – Immersive Sound and Audio Technology

The Immersive Sound and Audio Technology seminar was held physically in Kwai Tsing blackbox theatre on 13 March 2023. 68 participants attended the seminar and experienced the immersive sound setup in blackbox.

Mr. Allen Tin and Kelvin Yuen from d&b audiotechnik Greater China explained the application of immersive sound and the technology through demonstration such as sound tracking and localization. Musician was invited to play live music for the audience to hear the effect of electro-room acoustic system and shared his subjective comment. d&b also demonstrated their latest loudspeaker technology to control the directivity of low frequency sound to minimize noise nuisance to the environment.

6.9 Indoor Acoustics Webinar Series – Studio Acoustics, New Developments in Predictive Software

The technical webinar was held on 14 March 2023. 88 participants attended the webinar. The topic was presented by Mr John Storyk and Dr Peter D'Antonio from REDI Acoustics. John introduced the development of recording facilities, their work. He explained the importance of studio acoustics and showed some studio projects which have been using the NIRO software. Peter explained the working principles of the NIRO software and goals of the multi-objective optimization to find the best solution within the architectural constraints. They also showed examples with comparisons between the predicted and measurement results which demonstrate the success of the software.

7 Publications

7.1 Sounding Board

Most of the activities conducted by the Institute have been reported in our newsletter “Sounding Board”, which is released as an electronic publication to Members and posted on our website. It provides a good medium not only for keeping members informed on our achievements throughout the year, but also for other interested readers to know more about our acoustics community. We



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have to thank those members who have contributed to the informative contents in this publication. We will continue to make full use of the Sounding Board to promote sharing and communication among Members.

7.2 Social Media

We will put more effort to administer and update our Facebook, Instagram and Linked-in page as another major communication channel with our members and the industry.

All the activities information, updates, promotions and photos would be posted on the page regularly. The social media can also be an enquiry platform for the members/public.

8 Information Technology

The HKIOA website has continued to serve as a platform of communications between the Institute and our Members. The Membership account created for each of our Members would enable our Members to update their personal details, renew the membership including to pay their annual membership subscription fees on line by credit cards or PayPal, and to pay for seminars and conferences afterwards.

Our membership application process can now be done all through electronic means and any person who is interested in joining HKIOA can visit our website to learn about the entry requirements, download and submit their appropriate application form via emails.

The information on the institute's membership was updated from time to time and published in the website for verification. More and more information and contacts of acoustics related local suppliers/contractors/consultants (subscriptions are required) have also been posted for the information of the public.

9 External Liaison

HKIOA is used to be actively involved in consultation process of establishment or amendment of noise and acoustic related regulatory requirement, practice notes, etc..

HKIOA promotes and encourages our member to participate international conference by providing subsidies to join INTERNOISE 2023 to be held in Tokyo in August 2023.

HKIOA is also the member society of International Commission for Acoustics (ICA) and is involved to elect the next Board of the ICA.

In addition, HKIOA also participated in various events, such as acting as judge for the "My Green Space" competition, judging panel or the 18th Occupational Health Award, to provide support and advice with respect to a ECF Pilot Scheme for Reducing Environmental Nuisance during Renovation Works in the Community by the GHM Greater Bay Area Institute of Urban Architecture (Hong Kong) Limited.



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We also co-organize events with other institutes and act as supporting organization for events organized by other institutes.

10 The Way Forward

HKIOA was established in 1993. 2023 marks the 30th anniversary of the HKIOA. We will have a series of activities.

As our practice before COVID19 pandemic, we will continue to organize more face-to-face activities; continue to look for opportunities and organize seminar and social activities for members; organize technical visits. We will also continue to collaborate with various professional institutions. In addition, education programme will be organised to nurture acoustics professionals and foster professional development of industry practitioners.

Besides, we have rolled out a major event, Acoustic Award 2023 (AA2023). The AA2023 is our Institute's new signature event. This freshly launched initiative encourages the industry to continue creating excellent and innovative acoustic work, as well as gives recognition to outstanding acoustic projects and products in our professional realm. The competition is open to both members and student members. There are five categories including environmental noise, architectural acoustics, product/material invention, IT application and other excellence. All winners will be selected based on their concept, innovation, excellence, professional knowhow, challenges overcome, and practicality.

HKIOA will continue to strengthen our position as the only learned acoustical society originated in Hong Kong. We intend to establish a further unique status for our members. We have conducted a survey in October 2022 to pave way for establishing a specialist professional status within the institute. According to the survey result, majority of members are associated with room acoustic and environmental noise, and then followed by building services noise, structural, groundborne noise and vibration and electro acoustics. As a first step, we invited members to apply for the certification scheme for room acoustics and environmental noise. We will post the specialization list to the HKIOA website for public information, meaning all accepted applicants will be recognized as specialist of such category. In future, we will promote the certification status and make recommendations to the industry.

We will also continue to actively participate in stakeholder engagement meetings organized by the government and professional bodies to provide professional advice on setting industry standards on acoustics with an aim to contribute to the society's development.

Taking this opportunity, I would like to express my sincere gratitude to all the Executive Committee Members and Organizing Committee Members who have been involved in the aforesaid activities.

In closing, I would like to stress that continuous support from our members is the essence to make our future a success. With your support and the great efforts of our Committee Members, I am sure that the Institute would reach new heights and continue to grow.



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Dr. Calvin Chiu

Chairman