



香港聲學學會

Hong Kong Institute of Acoustics



ANNIVERSARY

香港聲學學會

Hong Kong Institute of Acoustics

三十周年紀念特刊

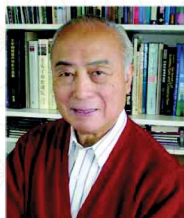
慶賀香港聲學學會成立三十周年

三十而立 再創新高

香港聲學學會榮譽資深會員
王季卿教授 敬賀



2023 年 11 月



王季卿教授，1929 年 12 月出生於上海。王教授是中國上海同濟大學建築與城市規劃學院教授、中國聲學學會資深會員、美國聲學學會資深會員、美國聲學學會東亞和東南亞地區分會主席以及香港聲學學會榮譽資深會員。

王教授自 1953 年以來一直致力於建築聲學研究，是中國建築聲學學科開拓者之一。

作為同濟大學聲學研究所的創始人，王教授自 1984 年建築聲學研究小組成立以來一直擔任小組的負責人。他廣泛的研究和實踐，為實驗室和研究所做出了貢獻。

王教授同時還活躍於國際聲學界，多次出席國際聲學學術會議，並多次擔任分組會主席，為加強國際聲學學術交流做了大量有益工作。1992 年起他被列入歷年馬奎斯世界科技名人錄。

Professor Wang Ji-qing, born in Shanghai in December 1929. Prof Wang is Professor in School of Architecture and Urban planning of Tongji University in Shanghai, China, a Fellow of Acoustical Society of China, a Fellow of Acoustical Society of America, Chair of ASA East and South-East Asia Regional Chapter and an **Honorary Fellow of Hong Kong Institute of Acoustics**.

As a pioneer leader of the architectural technology in China, he has been working on architectural acoustics since 1953.

As a founder of the Institute of Acoustics, Tongji University, Professor Wang served as the leader of the architectural acoustics research group since it was established in 1984. His extensive research and practice has fundamentally contributed to the laboratory and the institute as well.

As an active member in the international acoustics community, Professor Wang delivered professional lectures world widely, and served as the chairman of group meetings, and the plenary, keynote speaker, most contributive to the academic exchanges between China and the world. Since 1992, he has been included in the Marquis Who's Who in Science and Technology.



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Introduction

Founded in 1993, the Hong Kong Institute of Acoustics (HKIOA) is a unique setup in Hong Kong gathering intelligence from institution and industry specialized in noise and acoustics.

The Institute aims to promote the knowledge and practice in the field of noise and acoustics studies and also maintain and present the integrity and status of the profession to the public and the government.

At present, the Institute has about 460 members from various profession: academics and research, acousticians, architects, consultancy, education and engineering. Quite a number of the members are also Chartered Engineers or members of other local and overseas professional institutions.

Most of the practicing acousticians and engineers in Hong Kong have joined the Hong Kong Branch of the UK's institute of Acoustics before the establishment of the HKIOA. Later, considering the need to better promote the growth and advancement of knowledge and practice of noise and acoustics locally, particularly in congested environment in Hong Kong which would result in more serious noise problem such as road traffic noise, aircraft noise, industrial noise, and even noise from air-conditioning, TV, playing of "Mahjong", etc., there is a genuine need to set up a local institution to advance the field of noise and acoustics; and help to prepare their members to address the various noise issues. The HKIOA is set up with the mission to bring together relevant professionals to particulate in research and application of technology to advance the knowledge in the field of noise and acoustics.

In 1993, the HKIOA was registered and operated under the Societies (Amendment) Ordinance. With the increase in the number of members and assets,

the activities were increasingly diversified later on. Finally, in 2004, the HKIOA was established as a corporate body under the Companies Ordinance, which greatly protected the rights and interests of members. The financial management system was properly audited. The day-to-day management is up-scaled.

The Institute is a member society of International Institute of Noise Control Engineering (I-INCE), West Pacific Regional Acoustic Conference (WESTPRAC) Commission and International Commission for Acoustics (ICA) and a cooperative Society of International Institute of Acoustics and Vibration (IIAV).

Since its establishment in 1993, the HKIOA has regularly held different types of certificate courses, seminars, conference/symposium and technical visits in enhancing technical knowledge and to update members with the latest cutting-edge technology. HKIOA has held visits to mainland China and overseas countries for the purpose to understand advances of acoustical technology in order to enhance knowledge for application in Hong Kong. Through these visits and participation in various conference/symposium, it promotes the exchange of knowledge sharing of experience, and networking with overseas experts. In the past few years, HKIOA and its members have visited various cities in Mainland China such as Beijing, Shanghai, Qingdao, Guangzhou, Hainan, etc., and other countries such as Australia, European Countries, Japan, South Korea, Singapore, Taiwan, USA, etc.

簡介

香港聲學學會成立於1993年，是雲集香港噪音和聲學專業智慧的一個獨特專業團體。

學會成立旨在促進噪音和聲學研究的知識推廣和實踐，並維護及向公眾和政府展示該專業的完整性和地位。

目前香港聲學學會擁有約460名正式會員及準會員，成員來自不同的專業界別，包括建築師、工程師、環保顧問、教育政府部門、研究學者等。大多數成員同時亦是特許工程師或其他本地和海外專業團體的成員。

早在香港聲學學會成立之前，本港許多業內人士已參加了英國聲學學會香港分會。後來有感覺需要鼓勵聲學專業的發展及香港地少人多，噪音問題頗為嚴重，如交通噪音、機場噪音、工業噪音，以至冷氣機、電視機聲浪，甚至市民「打麻將」的聲音等，覺得有需要成立一個本地化的聲學學會，希望凝聚一群熟識香港特殊環境的專業人士，為香港的聲學研究及應用技術盡力，遂於1993年成立香港聲學學會。當時，學會的成立是按《社團（修訂）條例》註冊及運作的。後來隨著會員人數及資產增多，舉辦的活動日漸多元化，終於在2004年根據《公司條例》成立為法人團體，令會員的權益受到較大的保障，理財制度得到適當的監管，學會的日常管理亦更具規模。

香港聲學學會現在已經成為多個國際級聲學組織的成員，例如International Institute of Noise Control Engineering (I-INCE)、West Pacific Regional Acoustic Conference (WESTPRAC)、Commission and International Commission for Acoustics (ICA) 及International Institute of Acoustics and Vibration (IIAV)。在多項噪音議題上，例如噪音政策的探討及《噪音管制條例》的修訂建議，特區政府也不時向學會徵詢意見。

香港聲學學會自1993年成立以來，除定期舉辦不同類型的培訓課程、研討會、講座和學術交流活動外，也經常遠赴中國內地及海外國家和地區實地考察，參觀當地的聲學技術，以加強會員對最新聲學技術的應用知識，如訪問海外研究機構及參加海外會議等，促進知識和經驗交流。過去幾年，學會及其會員曾先後訪問中國內地多個省市如北京、上海、青島、廣州、海南等，又前赴日本、韓國、新加坡、台灣、澳洲和歐美等地進行學術交流。此外，學會也定期舉辦證書課程和聲學論文比賽等，以提升專業學術水平。

Dr. Calvin Chiu 趙家輝博士

Chairman (2022 - 2024)



It is my great honour to serve as Chairman of the Hong Kong Institute of Acoustics (HKIOA) in 2022-2024 term. Year 2023 is an important year to the world and marks the recovery from COVID since 2019. In 2023, after social distancing requirement is waived, we have organised various activities such as face-to-face seminar, delegation visit, annual dinner, etc. to create more opportunities for our members to gather and share knowledge. Moreover, 2023 is also a remarkable year of the HKIOA as this is our 30th anniversary. A series of activities including our first hosted Acoustic Awards competition, specialization certification scheme, and celebrating gala dinner have been organised this year.

The HKIOA was established in 1993 by a number of our senior acousticians which some of them are also active in the industry up to now. At the very beginning, the HKIOA was registered under the Societies Ordinance. In 2004, the HKIOA is registered as a legal entity under the Companies Ordinance so that the rights and interests of members are greatly protected and the financial management is properly audited. In fact, the HKIOA has healthy

financial situation as reported in audited statements of past years.

The HKIOA grows with the industry and have now more than 340 fellow and corporate members. We also have established student branches for the purpose to more well connect to the institutions and attract more young and energetic students to join the acoustics industry.

The HKIOA has the following objectives:

- (1) To maintain the integrity and status of the profession and to represent it both to the public and to the HKSAR Government;
- (2) To promote the general advancement of the knowledge and practice of Acoustics, which shall be deemed to include all aspects of the science and technology of sound, noise, and vibration;
- (3) To promote and protect in Hong Kong and elsewhere in the world the industrial, commercial

and other lawful interests of Acoustics Industry and to promote and hold either alone, or jointly, with any other institutes, associations, or persons any meetings, conferences, visits, seminars, lectures, exhibitions and other related activities in Hong Kong and elsewhere in the world;

- (4) To promote education and training and the professional interests, rights, powers and privileges of Members, their officers and employees; and
- (5) To foster and promote further friendship, relationship, fellowship and better understanding amongst Members.

In the past years, the HKIOA with dedication of efforts from our past chairpersons, executive committee members and support from our members and institutional partners did a lot of great works. We organized conferences, seminars, delegation visits, certificate courses and other short-term courses, social functions.

In parallel, there is growth of awareness on noise and acoustics among the general public, and the influence of the HKIOA is growing as well.

To echo the objectives, the HKIOA is proactive in different consultations and to express opinion to the government and public with the objectives to promote the acoustic industry, protect professional interests and rights of our members. We see that the HKIOA becomes a recognized body and have more influence to the industry and public. For example, under Cap. 400C and Cap. 400D, corporate member

of the HKIOA is regarded as the certifying body of the noise testing report. In local green building certification scheme (BEAM Plus), corporate member of HKIOA is regarded as competent person for providing expert advice and input on acoustic related credits under category of human and well-being.

In 2023, we take a step further – Specialization. While acoustic appears as a specialized discipline of area, the horizon of coverage that our members are involved is wide enough that they should be more recognized for their knowledge and experience in more specialized areas such as environmental noise, room acoustics, and others. The HKIOA starts off the process to implement a certification scheme for specialization for members with at least 10 years of post-membership experience. The next step would be to promote this certification scheme to the general public so that in case they need professional advice from specialized area, they know who they can approach. In future amendment of regulations and practice notes, we hope the HKSAR Government can take into consideration this certification scheme and to refer to professionals specialized in appropriate area they intend for.

In addition, the HKIOA initiates to organize the Acoustics Awards 2023 competition for the purpose to recognize outstanding performance of our members and to further promote the acoustics industry. The competition is divided into 5 categories comprising environmental noise, architectural acoustics, product/material invention, IT application and other excellence. Outstanding submissions are selected by the Jury Board comprising scholars

and representatives of different disciplines such as public and private real estate developers, architects, engineers, and many other stakeholders in relation to the acoustics industry.

HKIOA is used to regularly organize different conferences and seminars (and webinars) locally and worldwide to promote knowledge advancement. In the past, we successfully organized INTER-NOISE in 2012 and 2017. In 2023, the HKIOA co-organized the 13th Cross Strait Acoustical Conference in Hong Kong with Hong Kong Polytechnic University and overseas institutes after COVID pandemic. We also encourage our members to attend international conference (INTER-NOISE 2023) to exchange new technology and idea.

We brought new knowledge and advances to the members and public by means of seminars presented by renowned speakers. The recent seminars in Hong Kong cover meta-materials, performance venue acoustic design, immersive sound and audio technology, variable room acoustics systems, acoustics simulation software advances.

Various delegation visits are also organized to enable participants to observe up-to-date technology of facilities and design in relation to noise and acoustics including visit to acoustical laboratory in Guangzhou (South China University of Technology), Jiangmen, and performance venues in Hong Kong and Macau.

It is worth mentioning that we are used to co-organize with Hong Kong Construction Association and Hong Kong Trade Development Council of the Smart

Construction for Quiet Symposium with exhibitions and will continue to actively participate in this area.

The HKIOA organizes certificate course on noise and acoustics, aiming to nourish next generation of professionals to continually serve the community. After the re-structuring exercise, the new compulsory and elective certificate courses started to roll out in 2022 and 2023 respectively.

We have also continually provided different social gathering opportunities as a platform for members to develop their social network and promote friendship among members.

As a non-profit driven institute serving the industry, I especially thank the Executive Committee members to dedicate their own time serving the institute and the industry. In addition to directly responsible for the discipline areas they are dedicated for, our colleagues in the Executive Committee also forms various organising committees for different events and devote their effort to make great success. I would like to take this opportunity to thank everyone, particularly our past and present Executive Committee members, and you, who have contributed to the success of the HKIOA during the past decades.

Dr Westwood Hong 康冠偉博士

Chairman (1993 - 1996)



Time flies and it's HKIOA's 30th Anniversary. Many congratulations!

I still have the jetlag after spending a few weeks with my wife in Norway and the UK. I am totally absorbed in my retirement and, acoustics is absolutely behind me except maybe checking out unconsciously the internal finishes of the hotel restaurant dining halls or listening to the sweet purring of the SUV car in my grand tour of England, Scotland and Wales.

I practice yoga outdoors on the sundeck of the sports club. I really enjoy it very much, managing the 20 or so yoga poses. Taking reference on the YouTube, I was sort of self-taught on the 'crow handstand' and the inverted 'tripod headstand'. It's a bit challenging with closed eyes on the single-leg 'tree stand'. All these call for a good sense of balancing and a strong core. The single-leg 'pistol deep squat' has strengthened my leg muscles and overall balance.

I have also beefed up my front crawl swimming with the flip turn and the dive start. Yes, I feel that there's always something new for me to learn. I love to spend time underwater practicing the dolphin kick.

I carry on learning French, watching the French films and TV news every day. Well, my interest now extends to Spanish. Learning to speak a new language may be useful to give the brain the workout and prevent dementia.

My wife and I also love travelling in Japan besides Europe in the coming year.

Be Happy! Wish you all good health from,

Dr. Westwood Hong

Ir K. K. Yu
姚景光工程師

Chairman (1996 - 1998)



Congratulations to HKIOA on the 30th anniversary.

HKIOA was established in November 1993 with the objective to promote the general advancement of the knowledge and practice of Acoustics; to maintain the integrity and status of the profession and to represent it both to the public and to the Government.

After the establishment of HKIOA, one of the responsibilities of the committees was to promote the institute both in Hong Kong and overseas. We organized technical exchange visit to the acoustic institutes in Guangzhou, Shanghai, Beijing, Taiwan, Japan, Korea and Singapore in the first 10 years. We also encouraged and sponsored members to join conferences in mainland China. This was proved to be an essential step to establish the reputation of HKIOA and helped members to make connection with other acousticians overseas.

Another great accomplishment is the recognition of our professional status by the Hong Kong Government. In October 1997 when the Government announced ways to expedite and streamline the approval process for development proposals, submission of traffic noise calculation endorsed by the members of HKIOA was one of the requirements. This is very encouraging as the professional significance and valuable contributions of our fellow members are well recognized. This is further reflected as some commercial tenders also require acoustic submissions endorsed by the members of HKIOA.

Going regional, the HKIOA decided to host the tri-annual Western Pacific Regional Acoustics Conference (WESTPRAC) in November 1997. It was our honour to have Mr. Robert Law, Director of EPD to deliver the opening speech. We had also invited world-renowned acousticians Dr. George P. Wilson, Dr. George S. K. Wong and Prof. H. Tachibana to give keynote speeches. The conference was well attended by about 200 delegates.

In 2004, another important step was to incorporate HKIOA as a “company limited by guarantee and not having a share capital”. This would allow HKIOA to grow further in asset while members’ liabilities are limited by a guarantee of certain amount of money. The institute is also made more transparent to the public.

After 30 years, HKIOA has developed from 50 to over 700 members. The committees and members have paid a lot of effort to make this happened and many incredible achievements are recognized. Many founding members have retired and I would like to take this opportunity to express my sincere thanks to them for their contributions in HKIOA.

Well done HKIOA. Looking forward to having more young members to join us and to contribute to the sustainable development in Hong Kong.



Ir Maurice Yeung
楊國良工程師

Chairman (1998 - 2000)

Happy 30th anniversary and congratulations for the achievements in acoustic and noise control professional circle in the past years. Shortly after the founding of the institute in November 1993, the HKIOA had its first delegation visit to Guangzhou.

Just recently, the HKIOA accomplished its delegation visit to Japan. The delegation visits throughout these years helped the HKIOA to grow by establishing networks, making exchanges of thoughts and sharing of experiences and professional knowledges.

Taking the good opportunities, the HKIOA presents itself firmly and successfully in the centre of international stage of acoustics and noise control when hosting the 8th ICSV in 2001, the Acoustics 2012 Hong Kong and the Inter-Noise 2017.

Thank you for all the marvellous works done and look forward to many successes in the years to come.

Prof K. M. Li
李啓明教授

Chairman (2002 - 2004)



Heartfelt congratulations to the management team of HKIOA for its services to the community in the past decades.

Ir Richard Kwan 關健恩工程師

Chairman (2000 - 2002)



“Try not to become a man of success but rather try to become a man of value.”

— Albert Einstein

Dear Members,

I was reading some great quotes from history. Albert Einstein's words caught my attention. Einstein reminds us the importance of value – be it professional, ethical, moral, relational, or in other realms and dimensions. This is particularly relevant today as members work diligently, rightly so, to score points on the professional and business fronts amid fast changing social, commercial, and political climate.

These are challenging years. With a keen awareness of the needs of the community we serve, and acute realization that we are in need of one another, we will grow to become better and more mature professionals. And we step forward as women and men of value.

Over the past three decades the Institute has tried to provide different platforms to facilitate members to add value to oneself and to the profession. As we celebrate this important anniversary milestone, it is encouraging to witness the progress of many initiatives of the Institute to equip members to face the future more confidently.

May the Institute and every member excel as new heights are scaled and bold frontiers are explored.

My very warm wishes to members and the Institute.

Richard Kwan

Ir N. C. Cheung 張迺聰工程師

Chairman (2004 - 2006)



Congratulations on the 30th Anniversary. The Institute has been successfully led by acoustical professionals in Hong Kong since 1993. Thanks to the founders of the Institute for their dedication and excellence in promoting the knowledge and practice of acoustics. The past Chairmen Ir Westwood Hong, Ir KK Iu, Ir Maurice Yeung, Dr KM Li and Mr Tom Ho representing the different sectors of the industry had influenced the formation of local noise control policies and legislation.

As a practitioner in the area of mitigating transport noise impact on sensitive developments, the introduction of noise barriers and enclosures was supported by the government and has distinctive achievements in road traffic noise mitigation. The recent innovative acoustic window designs are the other mentioned achievements of the local acoustic practitioners. The institute has demonstrated the integrity and status of the profession to the general public and the government. The improvements in the local quality of life and environment are remarkable.

Through unprecedented communication with the general public of Hong Kong in different local sponsors' environmental landscaping spots, the

sound map is another outstanding product. On the educational side, the Institute has expanded 23 different sessions of courses in basic acoustics concepts, assessment and management on the relevant noise ordinance.

Regarding the liaison with other friendly acoustic societies, our past Chairmen Mr Tom Ho and Ir KK Iu who is also the advisor to the Institute, initiated the participation of various conferences in the mitigation of noise and vibration impacts. Apart from the international noise and vibration conferences, the participation of the Cross-Strait Conference has been one of the major tasks of the Institute.

As the past Chairman, such a tradition was carried forward for my successor. The upcoming function is to be hosted by our Institute in Hong Kong and I wish all the success in such a function and am pleased to see the achievement of the current Institute.

Ir Prof C. M. Mak
麥卓明教授、工程師

Chairman (2006 - 2008)



As we celebrate the 30th Anniversary of the Hong Kong Institute of Acoustics (HKIOA), it is a fitting occasion to reflect upon the significant progress we have made in enhancing the quality of life in Hong Kong. Over the years, we have witnessed a remarkable transformation in the way people perceive and address acoustical challenges. People now understand that the quality of life is not solely determined by the absence of unwanted sounds, but also by the presence of desired sounds. The pleasantness of the acoustical environment extends beyond mere quietness and encompasses human perceptual dimensions of sounds.

In addition, the people have become more attuned to the impact of noise and vibration problems caused by air-conditioning or ventilation systems. These systems, essential for maintaining comfortable indoor environments, can generate excessive noise and vibrations if not properly designed, installed, and maintained.

The enhanced awareness and concern for the acoustic environment are testament to the evolving mindset of the people and their recognition of the vital role acoustics play in our daily lives. As we move forward, it is imperative that we continue to foster collaboration, research, and innovation to address the challenges posed by noise and vibration issues. By doing so, we can ensure a harmonious and pleasant soundscape for all residents of this vibrant city we call home.

Mr Thomas Ho
何德建先生

Chairman (2008 - 2012)



Congratulations to HKIOA on its 30th Anniversary!

I am honoured to be part of this vibrant institution which was started 30 years ago as a meeting place for local acousticians to share their knowledge and experiences and has grown over the years to be capable of hosting major international conferences for the world to meet and share. I am particularly proud to be actively involved in hosting Acoustics 2012 – a joint ASA and ASC meeting, and InterNoise 2017, both in Hong Kong.

Well done HKIOA! I wish HKIOA all the best in all its future endeavours.

Dr K. W. Cheng

鄭建匯博士

Chairman (2012 - 2014)



Congratulations to the 30th Anniversary of the Hong Kong Institute of Acoustics! The HKIOA has been serving and contributing to our local acoustic professionals since 1993. I am proud to be a member of the HKIOA.

Year 2023 is in fact a milestone for the institute as corporate members of the Institute have been recognized as competent professionals, among others, to certificate noise testing reports in the newly amended Noise Control (Air Compressors) Regulations (Cap. 400C) and Noise Control (Hand Held Percussive Breakers) Regulations. The recognition has reflected the hard work of the current HKIOA Executive Committee and those in the past years as well as the growing professionalism of our members. Best wishes and keep up the good work!

Dr. Kin Cheng

Ms Grace Kwok 郭美珩女士

Chairman (2014 - 2018)



Congratulations to HKIOA on its 30th anniversary!

As a Past Chair of HKIOA, it is with great pleasure and pride to celebrate the remarkable growth and evolution of HKIOA since its founding 30 years ago. This milestone is truly a testament to the dedication, passion, and collective efforts of our members in advancing the field of acoustics in Hong Kong.

Over the past three decades, HKIOA has been at the forefront of fostering professional development for acoustics practitioners and promoting effective environmental noise management for the betterment of society. It is my honour to have witnessed the incredible achievements and HKIOA's ongoing commitment to these goals which have led the association to continuously cultivate meaningful collaborations with various esteemed professional institutions.

As the former chair, I have had the privilege of witnessing the enthusiasm, expertise, and commitment of the members of this esteemed institute throughout the years. Seeing HKIOA continuously expand their reach beyond the local arena fills my heart with immense pride. Your collective efforts have not only elevated the field of acoustics in Hong Kong but have also made a significant impact on the global stage.

Under the guidance of the dedicated leadership and unwavering commitment of its members, HKIOA sets high acoustical standards across various industries, and promotes environmentally responsible and sustainable acoustical practices. I have no doubt that HKIOA will continue to shoulder the responsibility of raising public awareness about the impact of noise on health and well-being, as well as nurturing future acoustics professionals.

Today, as we celebrate HKIOA's 30th anniversary, I extend my heartfelt congratulations to each and every one of you on all the milestones we have achieved together and the countless contributions we have made to the acoustics community. It is truly an honour for me to celebrate the indomitable spirit and unwavering commitment of all the members. On this joyous occasion, I wish HKIOA continued success, growth, and prosperity in the future as HKIOA stands tall as a beacon of excellence in the years to come.

Grace Kwok
Past Chair, Hong Kong Institute of Acoustics

Dr C. W. Law 羅志永博士

Chairman (2018 - 2020)



Congratulations to HKIOA on the 30th anniversary!

30th anniversary is an important milestone for a professional institute in Hong Kong. It is my honour and privilege to be elected as the Chairman and to serve HKIOA in 2018-2020. With the untiring support of members, we have successfully organized a number of events during the term of office. For professional development, we had a number of certificate courses including the acoustics in green building, noise control, road traffic noise assessment, architectural acoustic design, road traffic noise and railway noise measurement, and soundscape, many technical seminars, professional symposium with exhibitions such as the Smart Construction for Quiet, technical visits, career sharing with students, etc. For promotion of technologies, we had a number of technical seminars introducing various inventions and innovation noise mitigation measures, and a soundscape creation competition award. For networking, we had delegation visits to mainland China, districtwide acoustical conferences, participation of Opening Ceremony of International Year of Sound in



HKIOA Anniversary Gala Dinner on 12 December 2018

Paris, joint events with other professional institutions in Hong Kong. For social and community activities, we had gala dinner, publication of Sounding Board, charity functions, radio interview, student branch orientation party, etc. Those numerous activities could not be success without the talented and impressive passion of the executive committee members.

In the unique closely packed city Hong Kong, strong experience in building acoustics have been accumulated, and a number of excellent environmental noise control measures have been developed. Passing through the years, it is optimistic to see that the HKIOA is heading toward another higher level of professionalism. Keeping up the good works!



Hong Kong Soundscapes – A Sound Map Creation Competition Award Ceremony on 24 February 2019



Technical Seminar on Innovative Noise Mitigation Designs & 4D Virtual Reality System on 25 June 2019



Opening Ceremony of International Year of Sound in Paris on 31 January 2020

The 12th Cross Strait Acoustics Technical Conference cum Summit Conference of Acoustical Society of China-Environmental Acoustics at Xian, PRC on 15-17 August 2019

Mr William Fung
馮百如先生

Chairman (2020 - 2022)



Congratulations to HKIOA on its 30th anniversary!

Over the past thirty years of continual efforts by our previous Chairmen, Executive Committees and fellow members, I am filled with pride and gratitude for the growth and advancements of HKIOA, being an important role in the field of acoustics. It is my honour to have been part of HKIOA and serve as chairman in 2020-2022. 30 years is an important milestone that presents an opportunity to reflect on our journey and look forward to the future with optimism.

Despite the unique challenges posed by COVID-19, I am glad that we are able to organize a series of activities and events to celebrate this special occasion. In addition to the regular certificate course and technical seminars, technical visits are also conducted to institutions such as the South China University of Technology State Key Laboratory, Macau Light Rapid Transit (MLRT) and the new Galaxy International Convention Center (GICC). This event and activities not only provided professional knowledge and practice in acoustics but also served as an opportunity for our members to connect and exchange their valuable experiences.

On this momentous occasion, I would like to express my heartfelt gratitude to all our members for their significant contributions and extend my congratulations for their remarkable achievements over the past 30 years. I look forward to having more young members, together contribute to our future development, to continue to expand our influence and make a profound impact on the acoustic industry and society as a whole.



Congratulations on the 30th anniversary of the Hong Kong Institute of Acoustics (HKIOA)! For your significant contributions to the professional development of acoustics and sound technology in Hong Kong over the past three decades, we express our sincere admiration and appreciation. On this special occasion, we wish the HKIOA another thirty years of vibrant growth and continuing excellence, and look forward to the continued collaboration and cooperation between our two organizations. Congratulations again on this landmark anniversary!

**Institution of
MECHANICAL
ENGINEERS**

Hong Kong Branch

On behalf of the Institution of Mechanical Engineers (IMechE) Hong Kong Branch, I would like to extend my heartfelt congratulations to the Hong Kong Institute of Acoustics (HKIOA) for the 30th anniversary.

Over the past years, HKIOA has proactively raised the standards of knowledge and practice of acoustics by providing professional development programmes, conferences and networking opportunities to enable engineering professionals to share and enhance their knowledge in acoustics. On noise related issues, such as discussions on noise policies and proposed amendments to the Noise Control Ordinance, HKIOA also actively provided advice to the HKSAR Government. The Institute also visited other institutions in the region to enable exchange of experience. In promoting acoustic knowledge at tertiary education level, a post diploma course on acoustic is currently organised and there is also Meyer Poon Memorial Student Award for the best final-year project submitted by various local universities.

I am looking forward to closer collaboration between HKIOA and IMechE HK Branch to move and provide a better environment in Hong Kong.

I wish the HKIOA and its members every success in the future endeavours.

Chris Chong

Chairman, Institution of Mechanical Engineers, Hong Kong Branch



I would like to convey my heartiest congratulations to the Hong Kong Institute of Acoustics (HKIOA) on its 30th Anniversary. The Institute has made invaluable contribution to promoting the knowledge and practice of acoustics and nurturing professional competence in Hong Kong. May I take this opportunity to wish HKIOA's 30th Anniversary every success.

我在此衷心恭賀香港聲學學會創會三十週年。學會對促進聲學研究及應用技術盡力和培育業界精英貢獻良多。

展望將來，祝願貴會繼往開來，再創佳績！

Keith Yue,

Chairman of HKIE-Building Services Division



On behalf of the Hong Kong Institution of Engineers (HKIE) - Mechanical, Marine, Naval Architecture and Chemical (MMNC) Division, I would like to express our sincere congratulations to the HKIOA on its 30th anniversary. May HKIOA, as one of the most recognized acoustic associations internationally, continue to make a significant sound in the acoustic field, to keep updating new latest cutting-edge technology in the industry, and to enhance and promote acoustic expertise in the community.

Fanny Ting

Chairman, The HKIE-MMNC Division

MMNC Division is one of the 19 Divisions under HKIE. The division has more than 3200 members. They have three major functions, namely performing learned society functions, providing Continuous Professional Development opportunities to members in relation to mechanical, marine, naval architecture and chemical engineering disciplines, and enhancing the technical expertise of the members. The HKIE-MMNC Division has organized miscellaneous activities including conferences, seminars, technical visits, and STEM workshops. The work of the Division is steered by the Divisional Committee with elected members, co-opted members as well as with four special interest groups established under the Division, which are Automotive Engineering Specialist Group, BlueTech, Lady Engineers Group, and Students & Young Engineers' Affairs.

It is my great pleasure to congratulate the Hong Kong Institute of Acoustics (HKIOA) on its 30th Anniversary. This is truly a major achievement and one that we are all very proud of. Over the past quarter decades, HKIOA being a learned society in promoting the knowledge and practice of acoustics has been playing a significant role in maintain and present the integrity and status of the profession to the public and the government.

May I wish HKIOA every success and prosperity in its future endeavours.

Happy 30th Anniversary to HKIOA.



A handwritten signature in black ink that reads 'Peter Lam'.

Lam Yu Hung Peter
President
ASHRAE Hong Kong Chapter

Congratulatory Message to Hong Kong Institute of Acoustics The 30th Anniversary



On behalf of The Chartered Institute of Plumbing and Heating Engineering - HK Branch (CIPHE-HKB), I would extend my sincere congratulations to The Hong Kong Institute of Acoustics on the anniversary in 2023. Over the past 30 years, the Institute has made valuable contributions and commitment for promotion of the high quality services to the public and the government.

This Anniversary is a significant milestone for the HKIOA. I sincerely wish HKIOA and its members every success in its future endeavours.



A handwritten signature in black ink that reads 'Sylvia Liu'.

Sylvia Liu
Chair lady
The Chartered Institute of Plumbing and Heating Engineering –
Hong Kong Branch



Hong Kong Institute of Qualified Environmental Professionals
香港合資格環保專業人員學會 (香港環專會)

Hong Kong Institute of Acoustics 30th Anniversary Congratulatory Message

Warmest congratulations to the Hong Kong Institute of Acoustics (HKIOA) on the auspicious occasion of your 30th Anniversary! I extend my heartfelt blessings to you and your colleagues, and the entire HKIOA community on this remarkable milestone.

Over the past three decades, HKIOA has not only played a pivotal role in shaping the acoustics industry in Hong Kong but has also been a source of inspiration for professionals across various domains. Your unwavering commitment to the advancement of acoustics and your dedication to maintaining the highest standards in the field are truly commendable.

Our collaboration with HKIOA over the years has been both fruitful and mutually beneficial. It is a testament to the synergies that can be achieved when organizations of like-minded professionals come together to address critical environmental and acoustic challenges. Our shared commitment to the well-being of Hong Kong's environment has yielded fruitful results, and I look forward to the continuation of such collaborations in the future.

As we celebrate this significant milestone with you, I have every confidence that HKIOA will continue to thrive and your dedication to education, research, and professional development has undoubtedly made a profound impact on our community.

With warm regards,

Freeman Cheung

President, Hong Kong Institute of Qualified Environmental Professionals

NAP PROJECT - APPLICATION OF ACOUSTICORK BY AMORIM LEVERAGES PERFORMANCE AND SUSTAINABILITY IN THE LUXURY DEVELOPMENT CENTRAL PEAK

The Acousticork T66 underlay was chosen to provide thermal and acoustic insulation and impact reduction in the luxury real-estate development, Central Peak, in Hong Kong.

Set in the midst of a natural haven, this project covers a residential area of 181,000 m² and consists of 5 blocks of 7-storey buildings and 19 villas.

The project offers geographical advantages. Every detail has been carefully designed to create a comfortable environment in complete harmony with nature. Alongside this objective, the Acousticork T66 Underlay, provides thermal and acoustic insulation and impact reduction, thereby eliminating any noise-related disturbances.

This product is made of cork - a 100% natural, recyclable and sustainable raw material, making it the ideal solution for this application.



Cork absorbs impact and delivers greater walking comfort. It also stands out for its high performance in terms of reducing noise propagation and thermal insulation, as well as its ecological profile.

The installation of a layer of this cork underlay, applied between the concrete slab and the final flooring, endows the flooring with greater durability, improving comfort over time.

What is Impact Noise?

Impact noise is defined as movement of footfall or other movements from above, commonly generated by footfall noises of heels, moving of hard objects such as tables and chairs, jumping through exercising or by the kids...etc. Impact noise is very annoying, it can affect the quality of sleep, indirectly causing detrimental effect to mental health and peace of mind, and can sometimes lead to disputes between neighbours.



Acoustics Floor Treatment for Bedrooms
NAP Acoustics was commissioned to provide design and acoustics treatments to isolate the impact noise in the bedroom area of the residential towers, with requirements as below:

- Acoustic requirements: IIC 52
- Construction: 5 mm thick resilient buildup on RC

The use of Acousticork T66 Underlay made with natural cork and recyclable rubber tones in well with developers mission of constructing a sustainable green building, and to provide a living place with high quality and harmonized indoor environment, therefore benefit the health, wellbeing and productivity of its occupants.

NAP Acoustics is the official distributor of Acousticork by Amorim, with additional models available in portfolio.



NAP Acoustics (Far East) Ltd.
Your Total Acoustics Solution Partner for a Visible Tranquility

Tel: (852) 2866 2886
acoustics@napafe.com.hk
www.napacoustics.com.hk



Introduction



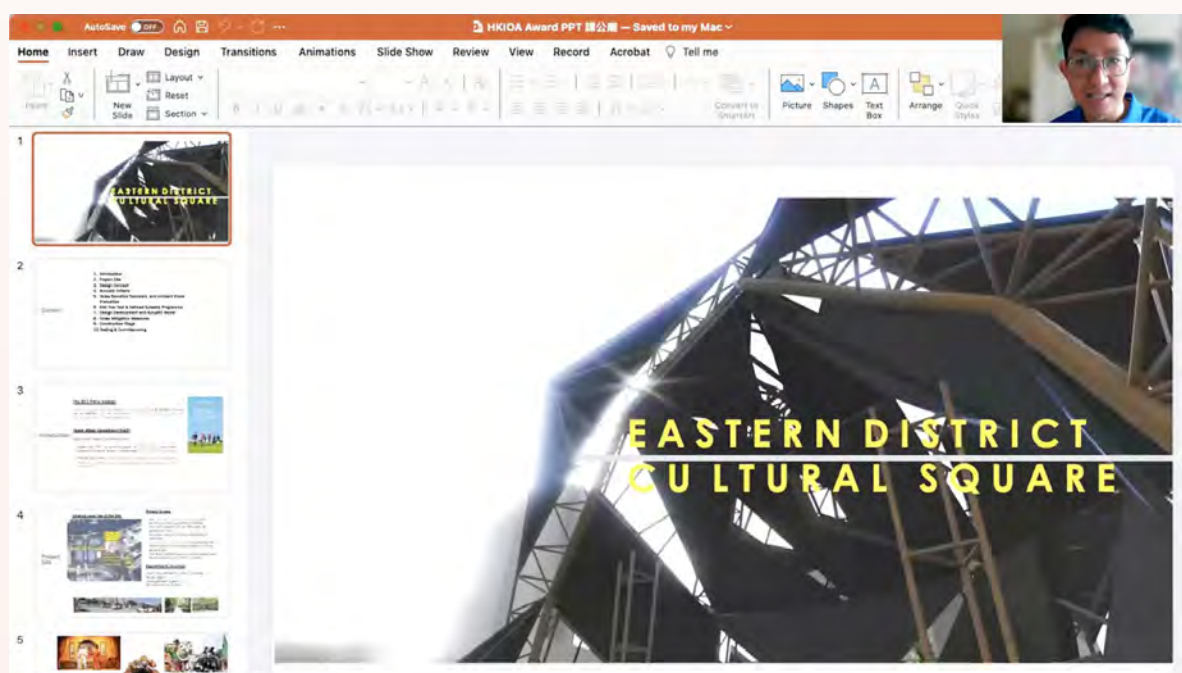
Hong Kong is densely populated and well developed, inducing a number of excellent explorations, developments and applications of acoustic designs, products, or projects which can hardly be found in the other places of the world. As promoting the practice of acoustics is one of the key missions of The Hong Kong Institute of Acoustics (HKIOA), the institute would like to recognise the organisations/members/people who make positive impact and contribution to the industry by an award.

The HKIOA Acoustics Awards 2023 (AA 2023) endeavours to recognise good acoustic projects or products in Hong Kong, encourage good and

innovative acoustic designs, and promote the HKIOA, their members, and the acoustic industry to the public.

Unveiled on 1 March 2023, AA 2023's submission period kicked off on 5 March and wrapped on 15 June, the month in which finalists were chosen. The announcement of finalists took place in July.

The jury panel comprised veterans from the industry in the field of acoustics, architects and property developers. The final presentation and judging were conducted on 2 and 9 September 2023 for the selection of award winners.



Final Presentation Sessions on 2 September 2023 switched to virtual meeting due to Typhoon Saola



Final Presentation Sessions on 9 September 2023

AA 2023 is marked by the breadth of categories that are featured, spanning from environmental noise to architectural acoustics, product/material invention to IT application to other excellence. In addition to Grand Award (Best of the Best), Gold, Silver, and Bronze Awards, and Merits, Student Award is included in the gamut of awards offered, to encourage the next generation to reimagine acoustics best

practice and help usher the industry into the era of digitalisation.

The award-winning projects and their project descriptions are included in the following pages for the appreciation of the efforts and contributions that have been made.

Category 1: Environmental Noise

Gold Award

Eastern District Cultural Square

**Thinktech Sound & Vibration Company Limited,
Shen Milson & Wilke Limited, and
China-Tech Engineering Company Limited**



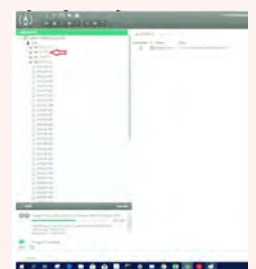
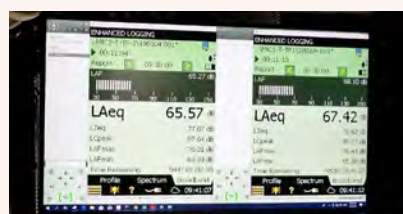
Eastern District Council (EDC) advocated for a permanent outdoor event space to hold cultural activities such as Chinese Operas and create a new and holistic waterfront experience to attract visitors as well as serving the community. The proposal was to build an amphitheatre: an outdoor performance stage with a canopy for a maximum capacity of 1000 persons. Due to the frequent noise complaints in Hoi Sham Park and Tuen Mun Park, many stakeholders in the project concerns singing activities and other amplified sounds would create nuisance noise to the neighbourhood. Shen Milsom & Wilke (Acoustic Consultant of the project) was to make sure noise generated from activities would not create a nuisance to the neighbourhood and submit Noise Impact Assessment Report to obtain Environmental Protection Department (EPD) approval for this project. The Project is to find a way to actively control the sound systems brought into the venue by the hirer. The idea was using Brüel & Kjær sound monitoring system that the measured readings instantly compared to the threshold level, and once the level was exceeded, it sent a feedback signal to the sound control processor (designed by China-tech Engineering Company Limited). The processor then gradually compressed the output sound volume to meet the criteria. The objective was to demonstrate the activities noise must not be 10 dB above the current ambient noise level.



Testing and Commissioning Sound Limit Processor



Sound Monitoring System



Silver Award

Enhanced Acoustic Balcony for Public Housing Developments in Hong Kong

Hong Kong Housing Authority, Environmental Protection Department, and Hong Kong Polytechnic University

Hong Kong is well-known for its high density metropolitan with residential developments next to heavily trafficked roads. To protect residents from traffic noise impact and address growing demand for public housing, Hong Kong Housing Authority collaborated with Environmental Protection Department and Hong Kong Polytechnic University to innovate and integrate mitigation measures into building envelopes/facades delivering building formats for sustainable development. This submission shares their experiences in research and development, focusing on “Enhanced Acoustic Balcony” design derived from the innovative “Acoustic Window” concept, and discusses how to cater for challenges of traffic noise encountered in public housing developments.



Bronze Award

Acoustic Window and Enhanced Acoustic Balcony to Attenuate Railway Noise Impact at The Arles

Ramboll Hong Kong Limited



Innovative Noise Mitigation Design (INMD) emerges for over a decade. In past decade, its application focused on road traffic noise which is the commonly shared problem of most developments in Hong Kong. INMD for railway noise is less popular. The performance is also less satisfactory due to stricter standard imposed. In a recently built development immediate to East Rail, railway noise impact has been addressed by INMD. The applicant combined INMD with conventional direct mitigation to further enhance noise reduction performance. As verified by field test, the combined innovative design can effectively mitigate the impact and relax the constraint to the design.

Category 2: Architectural Acoustics

Gold Award

HKUST Shaw Auditorium

Marshall Day Hong Kong Limited



MARSHALL DAY
Acoustics



The Shaw Auditorium is a new landmark for the Hong Kong University of Science and Technology (HKUST). The multipurpose building provides a dynamic venue that can transform from a concert hall for large orchestras to a conference hall, lecture auditorium, proscenium theatre and exhibition space. The flexible design of the auditorium, equipped with retractable seating, allows for multiple arrangements with a seating capacity of 850 for concerts, and over 1,300 in flat floor configurations.

Marshall Day Acoustics (MDA) provided full acoustic design services for the auditorium, multipurpose rooms, and ancillary spaces including room acoustics, mechanical services noise & vibration control and sound insulation. MDA was involved for the whole of the Project from concept design, detailed design, tendering, and construction supervision, right through to commissioning.

The building acts as a new cultural beacon for the HKUST and forms a new heart at its centre. MDA worked closely with the project team to ensure the acoustic design could support the functional day to day needs of HKUST's thriving university life. For the client, HKUST, the highest priority was to ensure the outcome of the construction quality would achieve the targeted acoustic design objectives and perform the multiple purposes as briefed.

Silver Award

Acoustics Innovation Development in Galaxy Arena and International Convention Centre, Macau Kinetics Noise Control (Asia) Ltd.

Galaxy Design Team was looking for Innovation lightweight Products to perform Thermal Reduction and Sound Insulation underneath PTFE Roof Membrane 16,000sq.m, there is no structural steel column inside the dome shape building. Kinetics designed and built 2 layers of Kinetics Acoustic Blankets with 400mm air gap. This innovative solution provides superior STC60 and reduces dead load and shorten construction time with Environmental Friendly Concept. Besides, two 18m-high Operable walls was designed and installed with STC60 between Arena and Convention Centre. We design and built the Plenary Theatre for 800 seats to achieve NC18 with electrical sliding absorptive and reflective wall panel system for multi-purpose function.



Silver Award

M+ Museum Ove Arup and Partners Hong Kong Limited

M+ occupies a prominent site on the southernmost edge of Kowloon, overlooking Victoria Harbour. Opened in 2021, it includes 17,000m² of exhibition space across 33 galleries, and three cinemas, a Learning Hub and Research Centre. The M+ acoustic design was able to overcome various key challenges in meeting the complex requirements of the building and provide an excellent comfortable, engaging atmosphere for visitors to view exhibits, by allowing visitors to better appreciate exhibits and by minimizing noise distractions, which can be especially important in spaces where quiet contemplation is desired to enable a high-quality visitor experience.



Category 3: Product / Material Invention

Gold Award & Grand Award (Best of the Best)

Magnetic Tuned Mass Damper (Version 3.0 - For Sheet Pile Works)

**Acoustics Innovation Limited,
Build King Civil Engineering Limited
AECOM Asia Company Limited
Civil Engineering and Development Department**



Magnetic Tuned Mass Damper (MTMD) is a retrofittable damper that reduces noise radiation from vibrating steel structures. Multiple MTMDs are magnetically attached to the vibrating structure, ensuring true contact even on rusty surfaces. The damper frequency is tuned to match the resonant frequencies of the vibrating structure, thereby enhancing hysteresis dissipation by amplifying the damper oscillations along the shear direction of the rubber layers. MTMD is a patent-pending product invented by Ir. Wilson Ho and licensed to Wylog Wong of Acoustics Innovation Limited (AIHK).

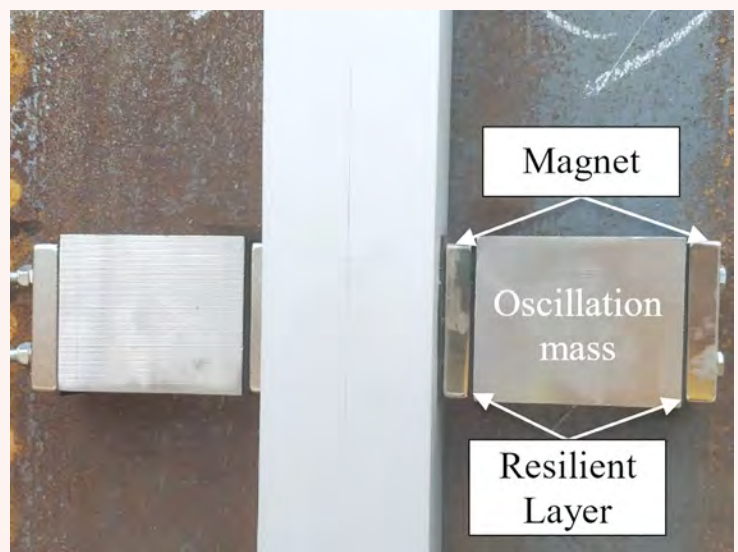
The first on-site implementation of MTMD was in January 2022 to reduce noise during sheet pile wall construction at CEDD project namely Tung Chung New Town Extension - Major Infrastructure Works in Tung Chung East (Contract No. NL/2020/03). The project is constructed by Build King Civil Engineering Limited and supervised by AECOM Asia Company Limited. Prior to implementing MTMD on site, Wylog Wong conducted pre-measurements to find the resonant modes of the sheet piles and then carried out the MTMD detail

design and tuning of the damper frequencies. With the implementation of 6 sets MTMD, sheet pile vibration reduction of 9-14dB were measured at the target frequency 630Hz to 1250Hz. The noise reduction of ~7dB(A) averaged noise level $L_{Aeq,event}$ and ~9dB(A) maximum noise level $L_{A,fast,max}$ were measured at both near and far field (7m and 22m from the sheet pile wall). Acoustic imaging captured from acoustics camera located at 22m from sheet pile wall without and with the MTMD are analysed and found that the noise reduction at the centre of noise source is ~7dB(A).



Main features of MTMD application to sheet pile noise control are summarized below:

1. Small damper mass (~2% of a sheet pile) reduces >10dB vibration & >7dB(A) noise.
2. TMD frequency is adjustable to match structural resonance (200-1500Hz).
3. Magnetic attachment ensures true contact for 100% transmission of damping force.
4. Lightweight damper design allows quick installation by a single worker.



Silver Award

Auto-Reclosing SilentUP (Retractable Noise Barrier)

Acoustics Innovation Limited

Auto-reclosing SilentUP (retractable noise barrier) is the world's first retractable barrier that supplied by Acoustics Innovation Limited (AIHK). This product is invented by Ir. Wilson Ho, the founder of AIHK. The retractable noise barrier has been widely used under challenging constraints in more than 300 construction sites in Hong Kong and Singapore. It does not require a concrete foundation and offers the following benefits:

1. Effective – up to 27dB(A) reduction in white noise, excellent gap sealing magnetic joint that allows SilentUP to form a continuous wall
2. Quick & Quiet – allows night-time installation up to 7m high by manpower
3. Stability and safety – patented automatic wind load relief mechanism allows light-weight structure remains safe during occasional gusts
4. Flexible – Modular design allows localized different barrier heights during installation
5. Reliability – Enhanced magnetic closing mechanism allows SilentUP to achieve auto-reclosing at low wind speed

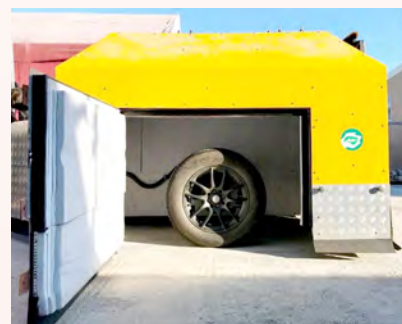


Bronze Award

Novel Technology for Quantification of Tyre/Road Noise for Urban Noise Management

Department of Mechanical Engineering, The Hong Kong Polytechnic University

Road traffic noise is receiving increased attention in contemporary urbanised cities such as Hong Kong, for its wide-ranging detrimental effects on health, society, and the economy. With the rising popularity of EVs, tyre/road noise is recognised as the dominant contributor to traffic noise pollution. An advancement has been developed in enhancing the quantification capability of widely-used close-proximity (CPX) technology for measuring tyre/road noise on urban roads. This development enables real-time measurement of the sound power level of tyre/road noise, which represents an absolute metric for noise sources and is less susceptible to variations in the measurement environment in urbanised cities.

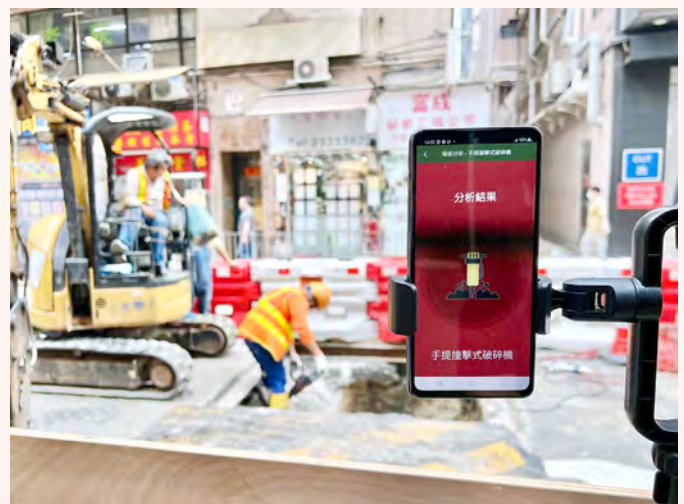


Category 4: IT Application

Gold Award

AI Mobile App for Construction Noise Recognition Environmental Protection Department

The project's objective is to create a cost-effective real-time AI sound recognition tool that can monitor environmental noise and track down specific construction activities. With the AI sound recognition tool, noise management on the construction site can be made more effective. To achieve this objective, an AI model has been built to recognize noise from three types of construction equipment, namely percussive piling, excavator-mounted breakers and hand-held breakers. These equipment are well known for generating intrusive noise during operations. In addition, the project entails the development of a mobile application and a backend cloud server. These technological components enable real-time AI identification, audio signal recording, and prompt alerts to contractors and EPD when these equipment are being used outside permitted hours. The utilization of the mobile application at construction sites facilitates unmanned monitoring, thereby leading to resource savings in terms of site inspections and investigations.



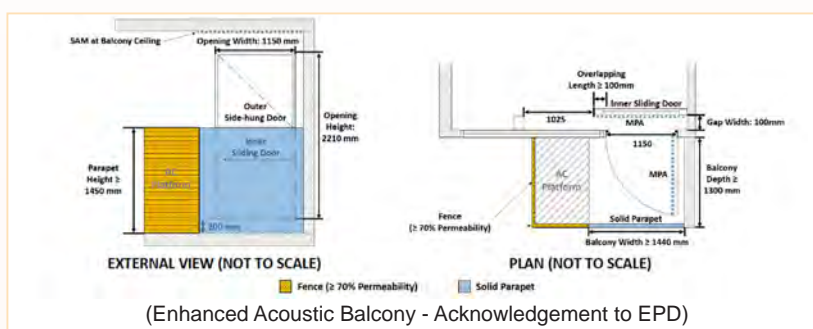
Category 5: Other Excellence

Gold Award

“Acoustics Space Shuttles” – Innovative Testing Facility for Window Sound Insulation

K. K. Iu, Westwood Hong & Associates Limited, and Maurice Yeung

Development of innovative “Acoustic Windows” and “Enhanced Acoustic Balconies” is of great demand which has the unique characteristics of achieving substantial noise reduction and allowing natural ventilation – a proven sustainable living format.



A great idea was evolved which was to build mock-up test rooms on steel platforms in an open space at the test laboratory. The test rooms were able to be raised to different heights and rotated to different angles in order to change the angle of sound incidence with array of loudspeakers installed at a fixed position.

This innovative facility is the 3rd generation test set up for conducting sound insulation test for the “Acoustic Windows” and “Enhanced Acoustic Balconies”. Novel testing method is also developed according to ISO 16283-3. This innovative testing facility is named as **“Acoustics Space Shuttles”** which has greatly reduced testing time and cost while the accuracy and reliability are improved.

Hundreds of tests have been conducted in the **“Acoustics Space Shuttles”** to assist EPD to establish Practice Note. This innovative testing facility has speeded up the residential building developments and the technology advancement in increasing the performance of acoustic windows/balconies design. Noticeable contributions to Hong Kong are well recognized.

Silver Award

Innovative Sound Insulation Devices in Hong Kong

Ramboll Hong Kong Limited

In the past decades, Acoustic Window and Acoustic Balcony were introduced and applied in concerned projects to provide high noise performance regarding various kind of noises. Being an acoustic consultant, Ramboll Hong Kong Limited collaborated with other construction parties, has contributed in many residential



developments and community services infrastructure developments, to propose the application of the measures, including preliminary design, scientific researches and on-site collaboration. The application successfully helps tackling the noise issues of subject sites, and become a common solution for various kind of noise impacts for both private and public sectors, and also community services infrastructure.

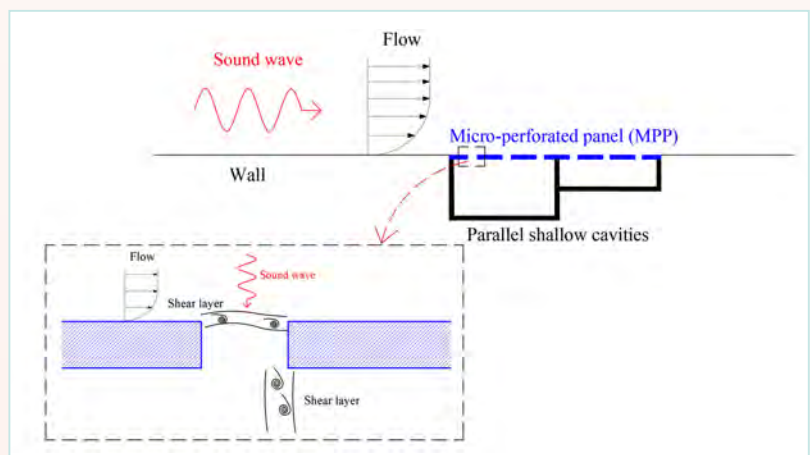
Bronze Award & Student Award

A New Acoustic Impedance Model for Microperforated Panel (MPP) Backed by Shallow Cavity with Grazing Flow

The Hong Kong Polytechnic University

This study presents numerical and experimental investigations into the acoustic behaviour of a micro-perforated panel (MPP) backed by a shallow cavity under a fully developed grazing flow. A hybrid Rayleigh's end correction model for T-shaped resonators is utilized to calculate the acoustic reactance of a very shallow cavity and an acoustics impedance model of MPPs at grazing flow is established. This study elucidates

the influence of cavities upon the acoustic behaviour of MPPs in the presence of grazing flows; furthermore, it proposes an impedance model that is more suitable for predicting the acoustic performance of booming compact meta-structures.



Merit (Category 1: Environmental Noise)

Clockenflap Music & Art Festival 2023

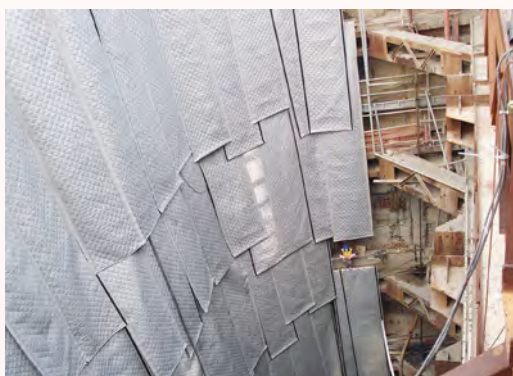
Ove Arup and Partners Hong Kong Limited

The acoustic design for Clockenflap 2023 was highly innovative, incorporating cutting-edge technologies and techniques to achieve optimal acoustic performance in a challenging festival environment. This included the use of complex models of stage speaker simulations to determine sound levels, and the strategic placement of barrier mats and storage containers to mitigate noise. The acoustic design was executed with excellence, achieving optimal acoustic performance while meeting strict noise limits set by the government. The careful management of sound levels during the festival ensured that the audience was fully immersed in the music, while also ensuring that nearby residents were not disturbed.



The Tallest Noise Barrier in Hong Kong

MTR Corporation Limited



The project team (MTR/Contractor) has to think out of the box and innovate a strong and dense enough structure with the acoustic materials to achieve the necessary degree of noise reduction and to be flexible enough to suit the condition. So, work can be undertaken for an extended time under a construction noise permit (CNP) to catch up on program recovery. After several round trials, a noise curtain of 22m in height and more than 48m wide has been composed of fabric, barium sulphate and fibre glass with a density of 6.4kg/m^2 and eventually successfully granted the CNP by EPD.

Design-Build-Operate Contract for the Additional District Cooling System (DCS) at the Kai Tak Development (KTD)

Paul Y.-Qianhai Joint Venture

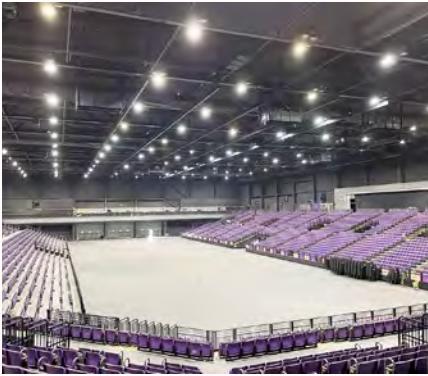
The EMSD's Additional District Cooling System (DCS) is locating next to the Kai Tak Nullah No.1 Desilting Compound, ADCS is facing different types of Noise Sensitive Receivers: for example, Kai Tak Tunnel Administration Building and Vibe Centro. Different innovative construction methods or products have been adopted such as Battery Energy Storage System, MiMEP to minimize noise impact arising from construction activities.



Merit (Category 2: Architectural Acoustics)

AsiaWorld Expo Arena

Ove Arup and Partners Hong Kong Limited



As the arena has been in operation for 18 years and the demand for music performance events continues to grow, there is an urgent need to enhance its acoustic performance. The objective of this study is to transform the arena into a world-class performance venue that can offer top-notch acoustic quality. The sources of excessive sound reflection are identified and echoes are implemented solutions to address the problem. The installation of newly added sound-absorbing materials has significantly improved the acoustics of the arena, resulting in a clear and immersive listening experience for concert-goers.

TKO-Advanced Manufacturing Centre (AMC) High Performance Floating Floors for Logistic Corridors

Architectural Acoustics (HK) Limited

TKO-AMC is a newly built advanced high end manufacturing base for “new industries”, it aims to serve as a base for high precision manufacturing, such as, electronics, robotics, sensors fabrication and so on, and also advanced testing and analytical laboratories. Such usages required very low floor vibration, to achieve the specified vibration constraint, a high performance floating floor was proposed by acoustic consultant to control the vibration source. As the acoustic contractor, Architectural Acoustics (HK) Limited and CDM Stravitec provided design, supply, installation and testing of the floating floor, the end results are more than satisfactory.



Victoria Dockside

Shen Milson Wilke Limited

Victoria Dockside project exemplifies the acoustic design successfully immersive in a multi-complex development, it features a 65-storey tower accommodating Rosewood hotel and grade-A office, a 14-storey serviced apartments and a 10-storey shopping mall with cinema and show space. The constant buzz of activity can become overwhelming, acoustic design offers a respite from this auditory chaos. Whether it is a serene office environment or energetic fitness gym, a peaceful hotel guestroom or good vibes live music club, applying design strategies to achieve comfortable and enjoyable environment, fosters a sense of calm and allows individuals to focus, relax and rejuvenate.



Merit

(Category 3: Product / Material Invention)

A Gift from Nature Acoustic Solution for Speech Intelligibility Enhancement

NAP Acoustics (Far East) Limited

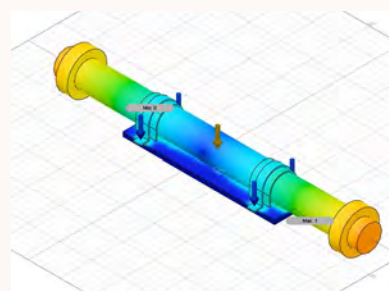
Business Environment Council (BEC) was looking to improve the speech intelligibility of their Exhibition Hall. NAP Acoustics was invited to design, supply and install treatment to reduce the reverberation time at 500Hz to less than 1.5 seconds. SNAPAcoustics Harmoni-Cork panels, a 100% natural expanded cork product with thermal insulating and heat retention properties, was proposed with the design to achieve peak absorption at mid to low frequency. The result proven to have met not only the acoustical requirements but aesthetically incorporated with BEC's interior design retaining natural light, achieving "Visual Tranquillity" and aligned with BEC's mission of advocating environmental excellence.



Stockbridge Type Tuned Mass Damper on the Chillers for Mitigating the Tonal Structure-Borne Noise in Hotel Guest Room under the Chiller Plant Room

AECOM Asia Co. Ltd.

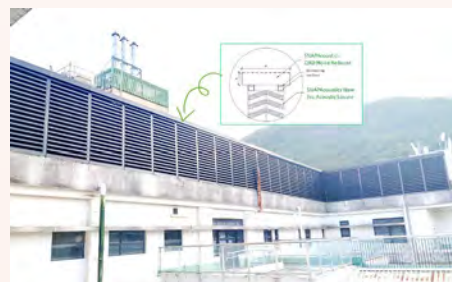
A detailed investigation to a tonal noise inside a hotel guest room revealed that there was structure-borne noise transmission from the chiller plant above. After the rectification of the vibration control device, another innovative solution using the tuned mass damper was developed to further reduce the residual tonal noise. Highlights of the tuned mass damper: unique solution to address specific source of structure-borne noise emanating from the chiller; development of experimental prototype; in-situ tested; 45-70% reduction in forcing frequency at source; 10dB coincident tonal noise level reduction in receiving room; cost-effective and easy retrofit without complex modifications and impact on the hotel operations.



The Unique Louvre Barrier Wall with QRD Noise Reducers on Rooftop for Reducing Chiller Noise

NAP Acoustics (Far East) Limited

The air-cooled chillers operating 24 hours on the rooftop of Haven of Hope Hospital generated airborne noise affecting the wards downstairs. NAP Acoustics was appointed and a unique acoustic solution combining SNAPAcoustics NewEra Acoustic Louvres and QRD Noise Reducers was adopted. This design blocks the line segment of plant noises to noise sensitive receivers in different positions and directions and increases barrier attenuation while enabling natural draught ventilations, allowing dissipation of heat of the chillers without increasing too much the height of the louvre barrier. The project resulted in a quiet environment for the healthcare workforce and patients.

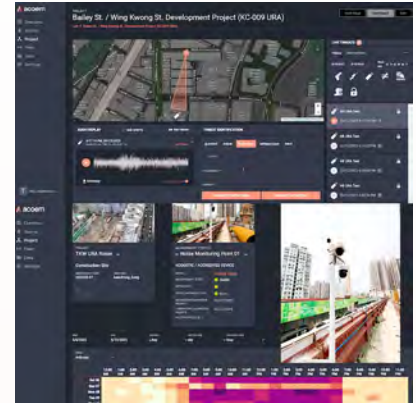


Merit (Category 4: IT Application)

Noise Source Directivity Detection for Construction Sites

Novox Limited

ACOEM's ATD system is a more accurate, flexible, and comprehensive noise source identification system than conventional acoustic cameras. It uses 5 microphones to locate and track noise sources with precision, and it is weatherproof and easy to deploy. The ATD system can also provide engineers and researchers with more information about noise sources, which can be used to optimize noise control strategies.



Realtime Vibration Sensor & Cloud System

Novox Limited

The iSmartBuild(R) vibration monitoring system offers 24/7 vibration surveillance and real-time data analytics to ensure structural safety. It also sends instant alerts in case of abnormal findings, eliminating the need for additional technical personnel. The system is highly customizable and can be integrated into existing equipment and facilities, making it suitable for a variety of construction needs.



Merit & Student Award (Category 5: Other Excellence)

Design and Development of a Novel Low Noise Airfoil / Wind Turbine Blade for Environmental Noise Reduction

Department of Mechanical Engineering, The Hong Kong Polytechnic University

The World Health Organization recognising noise pollution as the second largest environmental contributor to health problems. Environmental noise can originate from diverse engineering applications, including the production of green energy, the building services industry, and aviation. The objective of the project was to



develop an innovative approach to designing low-noise airfoils, capable of significantly reducing flow noise power while maintaining the original aerodynamic performance during operation. The outcomes of the project present a readily implementable concept that advances quiet technology for contemporary low-speed flow-mechanical systems, such as wind and tidal turbines, wings for small-to-medium-sized aircraft, and propellers for air taxis.

Conclusion

We truly hope that the HKIOA Acoustics Awards 2023 has fulfilled the objectives of recognising good acoustic projects or products in Hong Kong, encouraging good and innovative acoustic designs, and promoting the HKIOA, their members, and the acoustic industry to the public. The number of submissions testifies to the success of the first edition of Acoustics Awards, a success we aspire to continue in the next edition. Once again, our heartfelt gratitude to the technical committee, judging panel, participants, and other stakeholders for making the Acoustics Awards an experience that will be remembered with such pride and joy.



HKIOA – The Past, Present & Future

by Aaron Lui

While we are celebrating our 30th Anniversary, some of you may wonder what HKIOA had gone through an exciting journey over the past 3 decades.

The Past

We started our journey as an overseas branch of the UKIOA (HK Branch of the UK Institute) back in the early 80s. At the time, most of the more knowledgeable practitioners were expatriates, and apart from our local academics, there were just a handful of local talents in the field of acoustics & noise. During the time and even now, Hong Kong has hailed as one of the most densely populated metropolises in the world. The pressure on development due to an explosive growth of population and vibrant economic activities, had earned Hong Kong a bad name as one of the noisiest cities in the world, with noise affecting tens of thousands of its citizens. Naturally, environmental noise has become one of the top agendas for the Government as well as the noise and acoustics professionals in the early days. With this backdrop, the demand for local

talents, including noise professionals and engineers in various branch of acoustics, started to grow. At the time, it was quite fortunate that the HK Branch had co-organized the Western Pacific Commission for Acoustics (WESPAC) II Conference in 1985 with the HKPolyU, and made a decent financial return from it.

In the wake of Hong Kong returning to its motherland just before the turn of the 20th Century, many expatriates, including those in the HK Branch, have chosen to leave Hong Kong and the local branch had become dormant for a number of years. The local acousticians considered that it would be the time to re-active the HK Branch, and take steps to form an Institute of our own, completely independent from the UK counterpart. As such, a group of devoted professionals and engineers came together, and formed a “working group” (WG) in 1989.

The WG then initiated talks with the UKIOA, and started the winding down process of the HK Branch. One of the contentious issues was the funds held in the HK Branch, being the income from

HKIOA Milestones

Early 1980s



HK Branch
of UKIOA

1985



WESPAC II
Hong Kong

1989



WG
formed

1993



HKIOA
Established

the WESPAC II Conference and the Membership subscription of our Members in HK. As a matter of fact, all along, there was no financial assistance or subsidy whatsoever from the UKIOA, and the HK Branch had always been financially independent from the UK counterpart. Therefore, in the end, the UKIOA agreed that the HK Branch be dissolved and raised no objection for the funds held in HK Branch be transferred to the new HKIOA which was established in 1993. This has become the seed fund to enable HKIOA to have more possibilities and facilitating the development of the Institute. HKIOA started out small, with just a few tens of Members, but in the wake of rapid social and economic development in HK, the pool of local talents had continued to grow.

The Present

In the past decades, the HKIOA had grown from a small learned society, with just a few tens of Members, to a much larger organization with more than 400 Corporate Members and 300 Associate Members. It had vigorously pursued its objective in promoting the knowledge and practice of acoustics, integrity, and professional status, both in the local and international arena.

HKIOA has placed itself at the centre of the world of acoustics by organizing two major International Conferences. The Acoustic 2012 Hong Kong, which was a joint conference organized by the Acoustical

Society of America (ASA), the Acoustical Society of China (ASC), HKIOA and the WESPAC. The conference had attracted some 1,500 delegates from over 40 countries with more than 1,300 submitted technical papers. The event was very successful and there were many compliments from the local and overseas delegates. More importantly, it has enabled the international acoustics circle to become more familiar with the development of acoustics in Hong Kong. Another landmark international event was the InterNoise 2017, being the 46th International Congress and Exposition on Noise Control Engineering, which was led by The International Institute of Noise Control Engineering (I-INCE), and organized by the HKIOA, and HKPolyU. The congress had attracted close to 1,200 delegates from some 40 countries, and with close to 800 submitted technical papers. Apart from raising the status of HKIOA and expanding our network in the international circle, these two major conferences have enabled HKIOA to earn a windfall profit from the events. These funds have offered even more possibilities and opportunities in the further development of the HKIOA.

HKIOA was also in close contact with the Mainland academics and acoustics professionals. From time to time, HKIOA organized visits and delegations to the Mainland to participate in their conferences and meetings. HKIOA also takes turns with concerned organizations in organizing a Regional Conference each year, namely The Cross-Strait Acoustical Conference, and our Members had actively

1997



**WESTPRAC VI
Hong Kong**

2003



**10th
Anniversary
of HKIOA**

2004



**HKIOA Limited
Established**

2012



**Acoustics
2012
Hong Kong**

participated in the events. HKIOA is now a member of many prominent International Organizations in acoustics, and this has enabled our Members to easily connect with overseas experts and tap on the latest knowledge and practices in acoustics through its vast international network.

Another important milestone for the industry and practitioners was the recognition of the status of HKIOA Members in the legislation. The Regulations for the control of noise from handheld percussive breakers and air compressors were enacted in 1992. It was the first time that the requirements for acoustics professionals were enshrined in the legislation. As HKIOA had not yet been established in 1992, and most of the local practitioners were Members of the UKIOA (or MIOA), and therefore the requirement for MIOA was first written into the legislation. The concerned Regulations were recently updated, with more stringent noise standards, and the requirements for Members of the HKIOA, instead of UK MIOA, were now written into the amended Regulations.

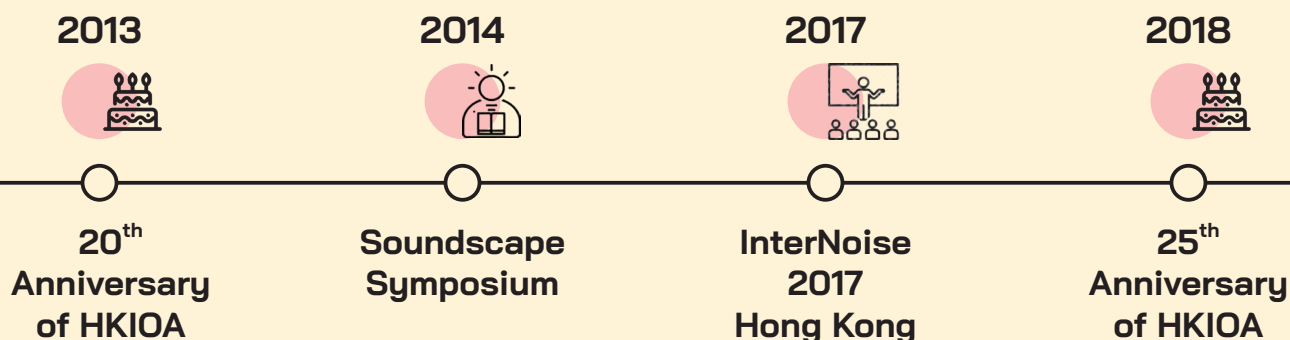
The Institute had been in close contact with the Government, and more often with the EPD, ever since the establishment of the HK Branch and then the HKIOA. Over the years, HKIOA had from time to time provided many of our professional views, advices and suggestions to the Government, and actively participated in their consultations in formulation of policies, legislation, guidelines and professional practice notes, for the control, management and in the

planning against environmental noise for the benefits of the society.

On promoting knowledge and practices in acoustics, we have been working closely with many Government Departments, private and public organizations. We also joined hands with tertiary institutions, and friendly professional organizations in organizing quite a number of conferences, symposiums, seminars, webinars and technical visits etc. for the benefits of our members, and the acoustics profession as a whole.

On education, HKIOA has had a long history in organizing Certificate Course in Acoustics for new comers, young graduates and professionals. It has now become a more structured programme and meets with the academic requirements needed for the application of Corporate Members of the HKIOA. The course was well received and attended by many participants from both the public and private sectors. HKIOA is also dedicated to the promotion knowledge in acoustics among the tertiary students. The Student Branch was formed for attracting students from Tertiary Institutions and allowing them to have a better feel of the career path as an acoustics professional. HKIOA has involved the Student Branch in the organization of activities, gave technical or career talks to the students to enable them to have a deeper understand of what are the possibilities in the acoustics world.

As acoustics is a subject with a wide variety of specialized disciplines, in order to promote specialization



and professionalism, the HKIOA had initiated a Certification Scheme for Specialization in late 2022, whereby the more experienced Acoustics Professionals, with more than 10 years of responsible experience could be registered as a Specialist in the particular stream. Initially, two broad streams, viz. Environmental Noise and Room Acoustics Specializations, were established. Since the inception stage, there have been overwhelming support from Members and some 40 numbers of specialist qualifications had been conferred to Members. We firmly believe that the Certification Scheme will better equip our Members to address the evolution of the environment and response to the challenges ahead.

Apart from the more traditional branches in acoustics, HKIOA has directed efforts in promoting and fostering the building up of knowledge in Soundscape. The HKIOA had organized a symposium on Soundscape in 2014 with eminent local and international speakers and initiated the development of a “Sound Map for Hong Kong” through an open competition in 2019. A dedicated web-based Sound Map was constructed and we were able to preserve many of the valuable sounds around us and in our society. With the setup, more sound clips could be added to enrich the database, whenever the opportunity arises.

As one of the highlights in our 30th Anniversary programme, HKIOA have initiated a first ever Acoustics Awards in Hong Kong in 2023. The objectives of the competition were to recognize and promote the good work in projects or products in Hong

Kong in the field of acoustics, and to encourage good & innovative acoustics designs among both the public and private sectors. The results of the competition had been confirmed and the prizes will be presented the winners in the 30th Anniversary Gala Dinner.

Last but not the least, the HKIOA has not forgotten its role in the society and community works. We have participated in some community events, and sponsored fund-raising activities for a School for the deaf, and a Centre for Children with Speech Disabilities. We have organized talks and attended radio interviews in support of the International Noise Awareness Day in April 2017 and 2018 in promoting the community’s awareness to noise around us and protection of hearing. We have also joined hands with International Commission for Acoustics (ICA) in an International Student Competition “My World of Sounds” in the International Year of Sound 2020, which was a global initiative to highlight the importance of sound in all aspects of life on earth and lead towards an understanding of sound-related issues at the national and international level. HKIOA organized a local competition in support of the initiative and the winners were nominated to participate in the international competition. We were excited as one of our local participants in the Junior School category had even won an international award.

The Future

From where we now stand, the focus of our actions

2019



**Hong Kong Soundscape –
A Sound Map Creation
Competition**

2020



**International Year of Sound
“My World of Sounds”
Student Competition**

in the coming years, would be to at least to keep up, or better still to increase, the momentum of our core activities – through the organization of more local or international conferences, symposiums, seminars, webinars, technical or delegation visits, and indeed education.

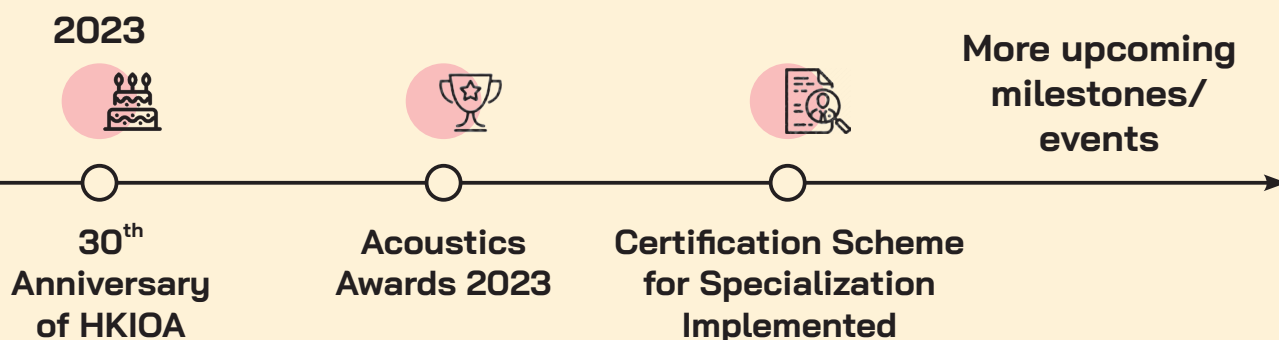
HKIOA will continue to invest in education for our younger generation and new practitioners. We are working to provide more trainings on some specialized subjects or professional areas to meet the demands of the industry. We have adopted a modular structure for our Certificate Course, and through the addition of more specialized subjects or modules, we could substantially enrich the content, both in terms of breadth and depth of any subject matters. It is hopeful that HKIOA could take the Certificate Course to higher level on par with a Professional Diploma.

To gain further recognition of Members of the HKIOA in the professional arena, be it in the public or private sector, we very much hoped to push forward the Acoustics Specialization status. The HKIOA will work harder to perfect the scheme by more detailed categorization of the streams or disciplines, and more importantly, to promote a better acceptance of these Specialization status, by both the Government and industry players. It is hoped that through this Specialization framework, both the public and private sectors could more easily, saving time and resources, pinpoint on the right acoustics professionals to advise or serve on their projects.

We will continue to encourage our Members to actively participate in many of the international conferences, symposium or meetings by sponsoring the conference fees required for the event. HKIOA will seek to build closer ties and deeper collaborations with our counterparts, as well as many of the tertiary Institutions, over the world, and especially the Mainland, to further the exchange of knowledge and experiences in field.

The future of HKIOA is going to be bright. We are grateful to have so many wonderful, talented and dedicated Members, and loyal supporters stayed in the HKIOA throughout the years. They all contributed to the building of a sound foundation for the Institute. As one of the most prominent, knowledgeable and well-established learning organization, we cannot have achieved what we have today without the relentless efforts of many of these unsung heroes. The Institute thanks them for their remarkable contributions. We must emphasize that, our Members are the corner stone of our success and their supports cannot be taken lightly. HKIOA is thankful to its Members for their unfailing support to the Institute.

Looking back, we started out small. But as more energetic, young and new talents, as well as seasoned professionals, joining the Institute, we are ready to take on new challenges. Looking forward, we hope that the Institute can go from strength to strength, and continue to scale new heights. We wish all the best to HKIOA!



RAMBOLL



Established in 2007, Ramboll Hong Kong Limited, a wholly owned subsidiary of Ramboll, is an environmental and sustainability consultancy firm with over 16 years of experience.

We provide comprehensive environmental management consultancy services ranging from noise and acoustics, air quality, water quality, waste management, land and sediment contamination, drainage and sewerage impact assessments to BEAM Plus/ LEED certification, green building design, sustainability and ESG consultancy.

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- Noise mitigation measures design
- Noise abatement plan for construction permit
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- Target setting

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- ESG policy & strategy development
- International benchmarking ratings

Creating Value and Impact

- Net-Zero
- Comprehensive target setting
- Net-zero strategy or roadmap
- Energy and GHG management
- ESG-related awards application



HKIOA's Contribution to New/Draft Practice Notes, Consultation Papers, and Amendments to the Noise Control Ordinance and its Regulations

Reported by Alson Pang and Calvin Chiu

For the past 30 years, the Hong Kong Institute of Acoustics (HKIOA) has been a leading advocate for promoting the knowledge and practice of acoustics, noise, and vibration control in Hong Kong. As a professional institute specialized in acoustics, HKIOA has been invited by the Environmental Protection Department (EPD) to provide expert views and comments on various draft Practice Notes, consultation papers, and proposed amendments to the Noise Control Ordinance (NCO) and its regulations from time to time. HKIOA also provide expert advice in response to requests from government departments.

In 2018, HKIOA offered comments on the **Review of the Mechanism for Encouraging a Quality Built Environment through Gross Floor Area Concession**, which was a study commissioned by the Buildings Department (BD) to review and improve the current mechanism for encouraging quality built environment through Gross Floor Area (GFA) concession. As one of the stakeholders, HKIOA participated in discussion session with BD's consultant and also attended public consultation. As a representative of the industry, HKIOA provided following suggestions: (i) as already included in current green building certification system, noise and acoustics should remain as one of the considerations of Quality Built Environment without doubt; (ii) prescriptive approach and standard/requirement may drive less demand on professional input but

may not be practical for noise and acoustic related prerequisite/credit; (iii) noise and acoustic design and assessment is complicated and requires professional input. Competent person (e.g. member of HKIOA or equivalent) should be assigned to take up the role of submission (on the side of proponent) and assessment (representing the government); (iv) in formulating any standard/requirement of individual prerequisite/credit for encouraging a QBE, further professional input should be required.

In 2021, HKIOA offered comments on the **Draft Practice Note on Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact**. The comments aimed to improve the effectiveness of the proposed innovative noise mitigation designs in reducing the impact of road traffic noise on private residential developments. Changes were suggested regarding the diagrams and the requirements of sound-absorbing material.

In 2022, HKIOA gave comments on the **Consultation Paper – Proposed Amendments to the Noise Control (Air Compressors) Regulations (Cap. 400C) and the Noise Control (Hand Held Percussive Breakers) Regulations (Cap. 400D)**. The comments focused on the need to strengthen the control of noise emitted by air compressors and hand-held percussive breakers and suggested

measures to improve the effectiveness of the proposed amendments. HKIOA agreed that air compressors and had held percussive breakers which have already been fitted with Noise Emission Label before end of the grace period shall be excluded from the requirement of complying with the proposed noise emission standards and can remain in service.

HKIOA also issued comments on the **Revision of Construction Work Designated Areas under Section 8A(1) of the Noise Control Ordinance and the Proposed Amendments to the Noise Control Ordinance for Control over Domestic Renovation Noise**. The comments aimed to enhance the effectiveness of noise control measures in construction work designated areas and domestic renovation projects, respectively. For the revision of Designated Areas (DA), HKIOA supported updating the DA coverage, taking into account newly developed populated built-up areas, to better protect residents from noise disturbance. HKIOA suggested that the government should consult and collaborate closely with stakeholders for a successful implementation of the proposed amendments, including extending the DA coverage to other newly populated built-up areas. Meanwhile, HKIOA supported the proposal to tighten control over domestic renovation noise by banning the use of noisy equipment that is not essential to renovation work and restricting the use of equipment that would generate significant noise impact to periods causing the least nuisance to nearby residents. The notification system enabling potentially affected residents to adjust their renovation schedules was welcomed, but the government should consult and discuss with the industry on implementation details to address their concerns. HKIOA suggested that the government should consult with stakeholders for a smooth implementation of the controls.

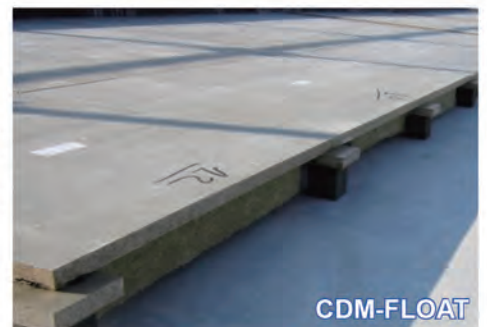
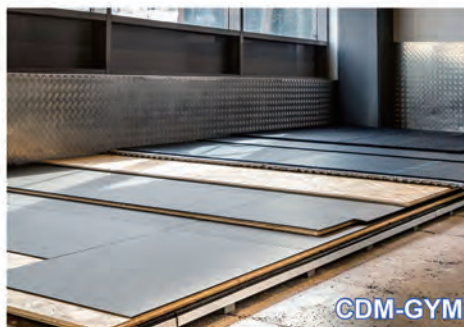
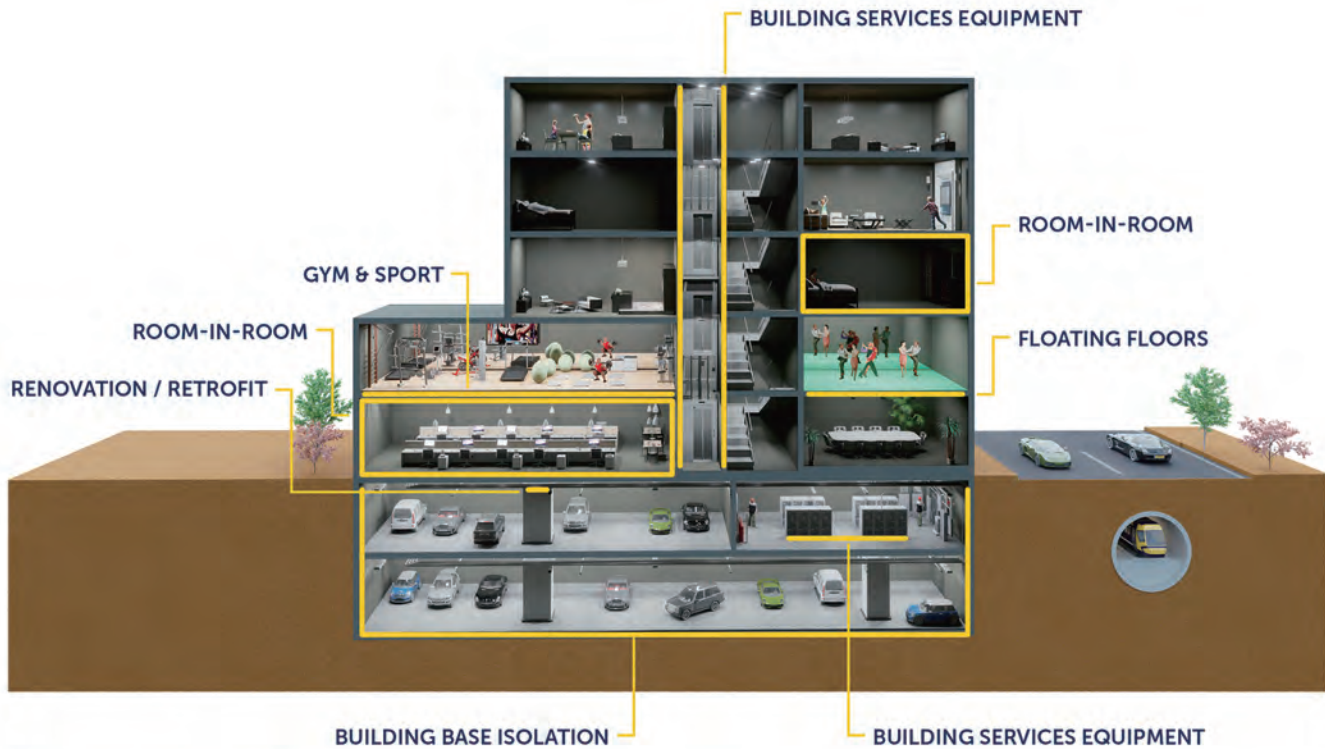
In 2023, HKIOA shared views on the **Draft Practice Note on Application of Sound Insulation in Residential Buildings to Reduce Noise Transmission Between Units**. HKIOA supported the new guidelines in hope of improving the effectiveness of sound insulation measures in reducing noise transmission between residential units. Suggestions on sound insulation requirements were made; and practical applications and materials options were provided for consideration.

HKIOA also gave comments on the **Draft Practice Note for the Planning of Residential Developments Against Road Traffic Noise**. The comments aimed to enhance the effectiveness of noise mitigation measures in planning residential developments against road traffic noise. The roles and responsibilities of the Project Proponent, the Certified Noise Modelling Professional (CNMPro) and the Independent Environmental Professional (IEP) were suggested for more clear and detailed depictions.

Overall, HKIOA's comments and suggestions focused on improving the effectiveness of noise control measures and enhancing the protection of the public from the adverse effects of noise. By providing expert views and comments on various draft Practice Notes, consultation papers, and proposed amendments to the NCO and its regulations, HKIOA has contributed significantly to maintaining and presenting the integrity and status of the acoustics profession to the public and the government. As HKIOA celebrates its 30th anniversary, its contributions to the development and promotion of acoustics in Hong Kong continue to be recognized and appreciated.

Noise and Vibration Isolation Solutions

CDM has the perfect solutions for architectural acoustics and structural dynamics of buildings. Ranging from building base isolation to discrete and jack-up floating floors, from impact absorption in gyms to the isolation of healthcare and high-performance spaces.



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HKIOA Certification Scheme for Acoustics Specialization

Reported by Franki Chiu

Since the inception stage back to late 2022, there have been an overwhelming support on the Certification Scheme for Specialization from our members. Since then, the Executive Committee has been driving towards the goal to further enhance the recognition on the professional experience of our Corporate Members. We deeply believe that this Certification Scheme will better equip our Corporate Members to address the evolution of the industry and response to the associated contemporary challenges even better.

As we communicated with the members via surveys previously, while we intend to widely apply this Certification Scheme to different disciplines in the coming future, the Executive Committee has decided to implement the first stage of Certification Scheme for Specialization to cover 1) Room Acoustics and 2) Environmental Noise, which most of our Corporate Members specialize in. This would obviously maximise the benefits to our members as soon as practicable.

The Vetting Committee of the Certification Scheme has duly considered the information submitted by the applicants. All the information is very impressive, which has also proved our belief on the capability of our members. The Executive Committee has also reviewed and taken the recommendations from the Vetting Committee to grant the qualification for this first stage of Certification Scheme to the suitable applicants.

Up to the time of preparing this article, the total number of qualifications granted for this Certification Scheme is 40 (for Room Acoustics and Environmental Noise). By virtue of this qualification, they will help the industry to incorporate the best practices in acoustics for the benefits of the society.

As said, this is only the first stage of the Certification Scheme. We will learn from this process and refine as necessary. We would initiate the next stage of Certification Scheme soon.

"東涌東主要基礎設施工程"是土木工程拓展署在東涌新市鎮擴展中的一個重要工程項目

該項目由利基土木工程有限公司負責建造，並由艾奕康有限公司負責設計和監督。

該項目在建造過程中採用了多項創新科技，致力打造智慧工地並實現可持續發展，為居民營造更美好的生活環境。

以下包括其中的一些措施：

Magnetic Tuned Mass Damper (磁性調諧質量阻尼器)

- 項目在環境控制方面努力拓展創新科技。利基土木工程有限公司與創新聲學有限公司合作研發了全球首創的磁性調諧質量阻尼器。



- 在板樁工程中使用磁性調諧質量阻尼器，可以有效減少地基鋼板施工時的共振震動和噪音，達到高達9分貝的降噪效果。此外，考慮到日常操作的需求，阻尼器的設計使工人能輕鬆地徒手安裝，非常快捷方便。



Smart Dump Truck Management System (智能運泥車監察系統)

- 為了更有效管理及防止非法傾倒，工程團隊已經為項目的運泥車安裝全球定位系統以實時追蹤、記錄和監察運泥車的位置和行駛路線。
- 若有運泥車進入非指定路線，監察系統會即時自動以電子方式向監督人員發出通知，以便監督人員跟進調查。



7m Height Retractable Noise Barrier (7米可拆式隔音屏障)

- 工程團隊採用本地研發的7米便攜式隔音屏障圍封噪音。此隔音屏障獲得建造業創科基金認可，能夠有效減低建築工程期間對居民產生的滋擾。
- 該隔音屏障是一個獨立型結構，可循環再用，只需用臨時水馬作為基座，代替傳統大型混凝土磚，減少安裝所需時間及避免拆卸時產生廢物，較適合地盤多變運作。
- 此外，它採用自動減輕風荷載設計，以顯著減低結構負載要求，改善生產力及工地安全。



Sensor-Controlled Sprinkler System (智能灑水控制系統)

- 為了減低工程對環境的影響，工程團隊在工地道路安裝了智能灑水控制系統。
- 該系統能夠持續量度工地的空氣質量水平，並透過5G技術實時將數據如溫度、濕度等上傳到智能管理平台。
- 系統檢測到塵埃濃度到達預設水平時，會自動啟動智能灑水設施，達到控塵效果。
- 我們希望透過此項創新科技，能夠減少工地對環境造成的影響。



Smart Wheel Washing Basin (智能工程車清潔管理系統)

- 為了加強工地環境管理，工程團隊進一步利用人工智能攝影技術監察工程車輛離開工地時的清潔狀況。當系統檢測到車輪上有泥濘時，車閘不會開啟，直到系統確認車輪已經被妥善清洗，車閘才會開啟，讓車輛離開工地，避免工程車輛將泥濘帶到附近的街道。



Executive Committee (Session 2023 - 2024)

Post		Name
Chairman		Dr Calvin Chiu
Honorary Secretary		Mr Aaron Lui
Honorary Treasurer		Mr Henry Chan
Chairmen of Sub-Committees	Membership	Mr Chris Kwok Mr Aaron Lui Mr Ken Wong
	Professional Development & Education	Dr Randolph Leung Mr Ken Wong Dr Mors Leung (Co-opted)
	External Affairs	Ms Claudine Lee Dr Cindy Cheung Mr Michael Chan (Co-opted)
	Environmental Noise	Mr Alson Pang Mr Franki Chiu
	Construction Noise	Mr Ken Wong Mr Joe Leung
	Noise & Vibration	Dr Randolph Leung Prof Xinjian Jing (Co-opted)
	Indoor Acoustics	Mr Wai Him Tang Dr Jeffrey Tam (Co-opted)
	IT	Mr James Choi Dr Mors Leung (Co-opted)
	Publication	Mr James Choi Dr Cindy Cheung
	Women in Acoustics	Ms Claudine Lee Dr Cindy Cheung

Others

Post	Name
Immediate Past Chairman	Mr William Fung
Honorary Adviser	Prof K. C. Lam Ir K. K. Iu
Administrator	Dr Horus Chan

Diary of Activities in the year of the 30th Anniversary in 2023

Mar - Nov 2023	Acoustics Awards 2023
13 Mar 2023	Technical Seminar on Immersive Sound and Audio Technology at Kwai Tsing Blackbox Theatre
14 Mar 2023	Technical Webinar on Studio Acoustics, New Developments in Predictive Software
May & Jun 2023	Elective Modules of Professional Certificate on Acoustics, Noise and Vibration Control
31 May 2023	Annual General Meeting 2023
26 Aug 2023	Lab Technical Visit to South China University of Technology State Key Laboratory
7 Sep 2023	Technical Seminar on Acoustic Box-in-Box Design and Systems Construction
15 Sep 2023	Technical Visit to Macau
14 Oct 2023	Technical Visit to Jiangmen Acoustic Laboratory
17 Oct 2023	Technical Webinar on Application of Software Technique in Building Acoustic Simulation
26 - 27 Nov 2023	The 13 th Cross-Strait Acoustical Conference 第十三屆海峽兩岸聲學學術交流研討會議
28 Nov 2023	The 30 th Anniversary Gala Dinner

The Organising Committee for the 30th Anniversary Celebration

Dr Calvin Chiu	Mr Henry Chan	Mr Aaron Lui
Ir C. F. Leung	Mr Tommy Wan	Dr C. W. Law
Mr William Fung	Dr Jeffrey Tam	Mr Ken Wong
Mr Alson Pang	Dr Mors Leung	Mr Chris Kwok
Dr Cindy Cheung	Ms Claudine Lee	Dr Horus Chan
Mr James Choi	Mr Michael Chan	Dr Randolph Leung

Technical Seminar on Immersive Sound and Audio Technology at Kwai Tsing Blackbox Theatre

Reported by Him Tang



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 the Blackbox Theatre.

Mr. Allen Tin and Mr. 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.



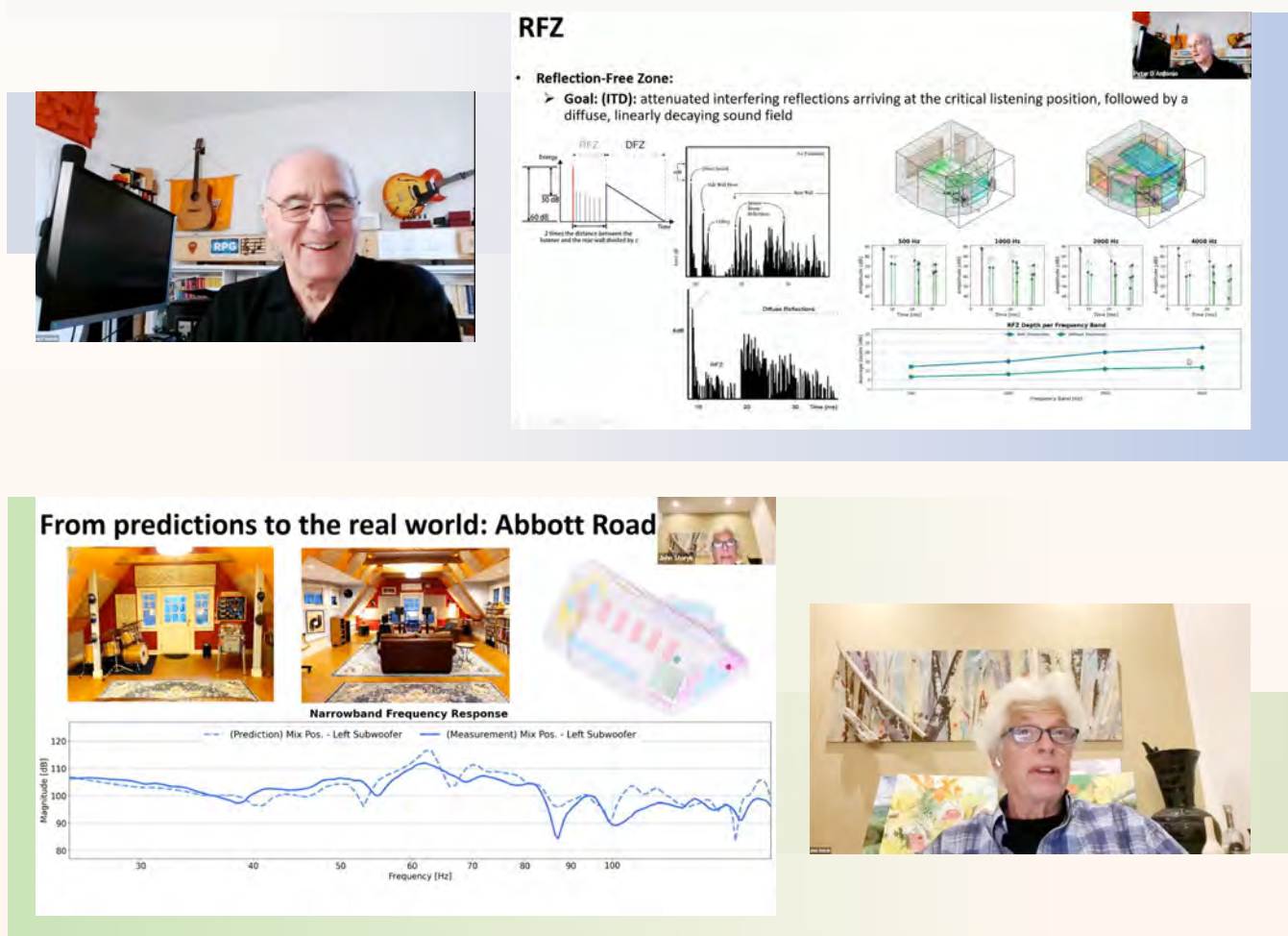
Technical Webinar on Studio Acoustics, New Developments in Predictive Software

Reported by William Fung

HKIOA organized a Technical webinar “Studio Acoustics, New Developments in Predictive Software” on 14 March 2023. The webinar featured speakers John Storyk, an architect and acoustician, and Peter D’ Antonio, a musician and recording engineer. The focus of the webinar was to introduce and discuss the “Non-cuboid iterative room optimizer (NIRO®)” and its advancements in predictive software for studio acoustics.

During the webinar, John Storyk and Peter D’ Antonio shared their valuable knowledge and experiences regarding NIRO®, highlighting its features, functionalities, and benefits in optimizing critical listening rooms. The seminar provided informative proof of performance and real-life application examples, demonstrating the effectiveness and practicality of NIRO®.

The webinar attracted significant participation with 88 attendees who deepened their understanding of how this innovative software can contribute to achieving optimal acoustics in studio environments with this webinar.



Annual General Meeting 2023

Reported by Cindy Cheung



The Annual General Meeting (AGM) was held on 31 May 2023 at Crowne Plaza Hotel Kowloon East Hotel. After AGMs being held online through virtual meeting system for 3 consecutive years, the AGM this year finally resumed its usual form as a face-to-face meeting. It provided us a good occasion to meet friends again.

The AGM was started at 7pm. The Chairman Dr Calvin Chiu presented the Annual Report of Session 2022-2023 and the Hon Treasurer Mr Henry Chan reported the financial review for the past year that HKIOA remained in a healthy financial position. As for composition of the Executive Committee, Dr Cindy Cheung was newly elected, Mr James Choi, Mr Alson Pang, Mr Him Tang and Mr Ken Wong was re-elected as Committee Members.

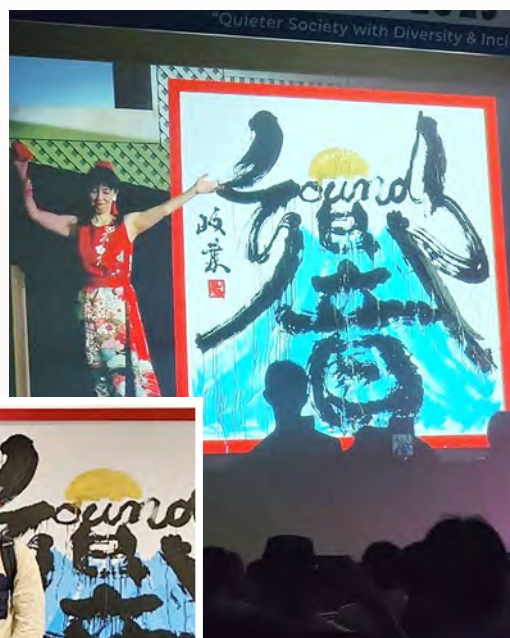
The AGM was followed by a dinner reception with over 100 members and guests. Dr Calvin Chiu gave the welcome speech. Mr Franki Chiu introduced the HKIOA Certification Scheme for Specialization. Mr Henry Chan also called for participation in the HKIOA Acoustics Awards 2023. The event was completed at around 10:30pm after a relaxing evening with nice food, wines and chats.



Hong Kong Delegates in Inter-Noise 2023 & Delegation Visit in Japan

Reported by Gary Yuen

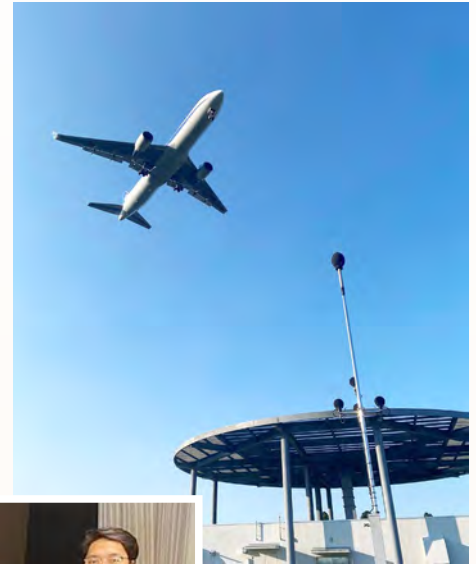
The HKIOA committee members have participated in the Inter-Noise 2023, organized by the International Institute of Noise Control Engineering in Chiba, Japan on 20 – 23 August 2023. The conference provided opportunities for the members to share knowledge and experience with the other participants worldwide, and to learn the unique Japanese culture in the well-planned exciting programs.



A delegation visit to local leading organizations in construction, instrumentation, R&D and aviation was organized right after the conference, with the support by the ASA ESEA Regional Chapter. The two-day visit has been enriched with the warmth welcome from Kobayashi Physical Research Institute, Narita International Airport Corporation, Ono Sokki Co., Ltd. and Taisei Corporation, who arranged astonishing technical visits in their facilities and share their experiences in acoustical field with the delegates.



A big thank you to Mr. Maurice Yeung and Dr. Hiroyuki Imaizumi for organizing such an enjoyable delegation visit, and also thank you for the participation of the delegates from ANEWR Consulting Limited, Environmental Protection Department HKSAR, NAP Acoustics (Far East) Limited, Ramboll Hong Kong Limited, and Shen Milsom & Wilke Limited.



Technical Visit to South China University of Technology State Key Laboratory

Reported by Alice Ng

HKIOA organized a technology visit to the South China University of Technology (SCUT), State Key Laboratory of Subtropical Building and Urban Science in Guangzhou on the 26 August 2023. It was a pleasure to have Dr. H. T. Sun who is a Professoriate Senior Engineer at SCUT provide professional explanations of the acoustics area to the participants throughout the visit.

During the visit, participants were led by Dr. Sun to explore various facilities within the laboratory. The highlights of the visit included observing a scale model of a concert hall, a soundproof room, a reverberation chamber, as well as both semi and full anechoic chambers.





Technical Seminar on Acoustic Box-in-Box Design and Systems Construction

Reported by Jeffrey Tam

The Acoustic Box-in-Box Design and Systems Construction seminar took place at the Hong Kong Polytechnic University on 7 September 2023. A total of 61 participants attended the seminar.

Mr. Joerg Hutmacher, representing Kinetics Noise Control Inc., presented the fundamental principles and acoustic systems associated with box-in-box designs. He provided various solutions and installation examples of practical cases.



Mr. Fred Chan, representing Kinetics Noise Control (Asia) Limited, supplements the box-in-box system application with his local project experiences at the Hong Kong University Grand Hall and Macau Galaxy Plenary Hall. Fred also shared tips and strategies for designing a box-in-box system.

The seminar provided very useful and practical information for the members, with opportunities to ask questions and talk about real life examples.

Technical Visit to Macau

Reported by Alson Pang

HKIOA, with the kind support of Galaxy Entertainment Group (GEG) and all participants, organized a successful technical visit with overwhelming response to the Macau Light Rapid Transit (MLRT) and the Galaxy International Convention Centre (GICC) on 15 September 2023. Over 40 participants had joined us to explore these remarkable facilities.

The event kicked off with a delicious Chinese-style dim sum lunch at a restaurant in Macau Galaxy, accompanied by an informative presentation by Dr. Kelvin Tsui from Macau MTR on the development and operation of the MLRT, with a specific focus on noise control considerations. The MLRT, Macau's first-ever operational railway system, has garnered widespread acclaim from both the media and the public. The Taipa Line has a length of 9.3 km railway and 11 stations on elevated guideways separated from road traffic. It uses Mitsubishi Heavy Industries Crystal Mover APM vehicles running on rubber tires along concrete tracks. Participants then had the privilege of experiencing a ride on the MLRT, gaining invaluable first-hand experience of this fully automated and driverless railway system.



The visit continued with a tour of the new GICC, graciously hosted by representatives from GEG. The tour showcased the GICC's extraordinary features, including exhibition areas, a 16,000-seat arena, and a state-of-the-art Plenary Theatre. Renowned for its cutting-edge acoustics, premium sound quality, and advanced digital communication capabilities, the GICC has also earned recognition for its commitment to environmental sustainability, receiving a Silver



Certification for Environmental Design from EarthCheck. Mr. Fred Chan from Kinetics Noise Control (Asia) Limited further enriched the visit with a presentation on the acoustic design features, the challenges overcome during construction, and the exceptional acoustic performance achieved at the venue.

In conclusion, this technical visit organized by HKIOA, with the support of GEG and the enthusiastic participation of all members, proved to be an exceptional and enriching experience. It provided valuable insights into the development, operation, and acoustic considerations of the MLRT and GICC, underscoring the impressive achievements and innovations in these world-class facilities in Macau.

HKIOA would like to take this opportunity to extend our heartfelt gratitude to Galaxy Entertainment Group, Kinetics Noise Control (Asia) Limited, as well as all the esteemed speakers and dedicated helpers, for their invaluable support in making this event a resounding success.



Technical Visit to Jiangmen Acoustic Laboratory

Reported by Mors Leung

HKIOA organized a successful technical visit with Architectural Acoustics (HK) Ltd. (AAL) and Acoustic Testing Service Limited (ATSL) to their Jiangmen Acoustic Testing Centre on 14 October 2023, around 40 participants had joined this event to enrich their experience in acoustic testing.

The visit started off with a welcoming lunch in a popular Chinese restaurant nearby the laboratory, and greeted by Dr. Mors Leung from AAL. Then Dr. Chong from ATSL briefly introduced the laboratory's facilities, and the accredit tests could be conducted in the testing centre. The participants were divided into two teams for the laboratory walk, led by Tat and Ocean from ATSL, the laboratory walk include, sound absorption test, sound insulation test, rain impact test, impact insulation test, wind tunnel test, Ceiling Attenuation Class (CAC) test, acoustic window test, and flanking test of curtain wall. They explained the tests procedures in details and demonstrated some of the testing.



A vibration isolation test set-up was prepared and demonstrated, participants can 'feel' the vibration isolation of a high performance floating when shaking by a source. This showed the laboratory is also capable to carry out customized testing.

To conclude, this event is successful with the support of hosting organizations, committees of HKIOA and all the participants.



Technical Webinar on Application of Software Technique in Building Acoustic Simulation

Reported by Him Tang

The Technical Webinar on Application of Software Technique in Building Acoustic Simulation was held on 17 October 2023 through the Zoom platform. 64 participants attended the Webinar.

Mr. Victor Diez from CYPE presented the application of using AcouBAT software to calculate airborne and impact noise insulation in a 3D model. He explained the standard adopted in the model and how to develop own database in the model. He also demonstrated the use of software for outdoor and indoor noise transmission calculation with real examples. The webinar was well received by the participants.

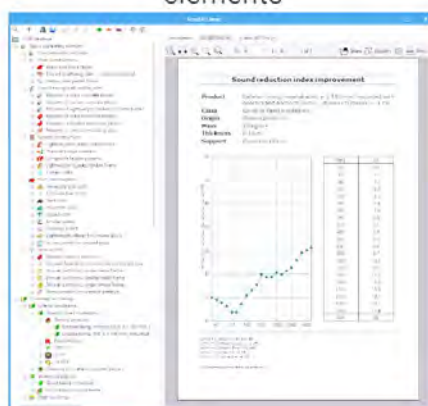
Acoustic model definition

Configuration and limits

- Acoustic indices
- Requirements in receiving spaces
 - Airborne noise insulation
 - Impact noise insulation
 - Reverberation time
 - Sound pressure level



Acoustic performance of building elements



Simulation and results

AcouBAT calculation engine



- EN ISO 12354-1:2017. Building acoustics - Estimation of acoustic performance of buildings from the performance of elements - Part 1: **Airborne sound insulation between rooms.**
- EN ISO 12354-2:2017. Building acoustics - Estimation of acoustic performance of buildings from the performance of elements - Part 2: **Impact sound insulation between rooms.**
- EN ISO 12354-3:2017. Building acoustics - Estimation of acoustic performance of buildings from the performance of elements - Part 3: **Airborne sound insulation against outdoor sound.**
- EN 12354-5:2009. Building acoustics - Estimation of acoustic performance of building from the performance of elements - Part 5: **Sounds levels due to service equipment.**
- EN 12354-6:2003. Building acoustics - Estimation of acoustic performance of buildings from the performance of elements - Part 6: **Sound absorption in enclosed spaces.**

1993 Establishment of the HKIOA



August 1993

Delegation Visit to Beijing



January 1993

Delegation Visit to Guangzhou



September 1995

Delegation Visit to South Korea



May 1994

Delegation Visit to Shanghai



November 1997
Regional Conference WESTPRAC VI



October 1996

Delegation Visit to Japan



April 1998

Delegation Visit to Singapore



May 1999

Delegation Visit to Qingdao



May 2001

Delegation Visit to South Korea



November 2002

Delegation Visit to Taiwan

2003 The 10th Anniversary



2004 Establishment of HKIOA Limited



12 June 2004

Technical Visit to TVB City



20-22 July 2006

Delegation Visit to Shanghai



19-21 June 2008

Symposium on Architectural & Environmental Acoustics in Hong Kong, Shanghai & Taipei

香港、上海及臺北三地

建築聲學與環境聲學專業交流會議



25-27 November 2005

The 10th National Congress on Noise and Vibration Control Engineering in Shenzhen
第十屆全國噪聲與振動控制工程學術會議



January - December 2007

Railway Noise Control Seminar Series



14 May 2009

Public Lecture on "Birds to Bells, Toads to Car Horns: Listening in to Acoustemologies in New Guinea, Europe, and Africa 1976-2009"



19-20 August 2010

Noise Mapping Symposium & Workshop



16 April 2011

Technical Visit to MTR West Island Line Construction Site



13-18 May 2012 Acoustics 2012 Hong Kong



19 October 2012

Joint HKIOA-HKIA Conference on
“Innovation Building Design for Noise Mitigation”



23-24 November 2012

The 5th Cross-Strait Acoustical Conference
第五屆海峽兩岸多地聲學技術交流研討會議

2013 The 20th Anniversary



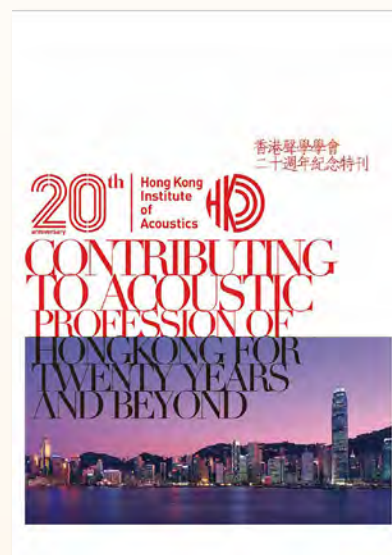
22 August 2013

Delegation Visit to Shanghai



28 September 2013

Charity SoundWalk with Silence



6 December 2013

The 20th Anniversary Symposium & Gala Dinner



8 May 2014

Joint HKCA-HKIOA Symposium on Quiet Construction



30 September 2014

Joint HKIOA-HKPolyU Symposium on Soundscape



26 April 2015

Bowling Competition 2015
organized by HKIOA Student Branch



21 December 2015

Christmas Party



27 July 2016

Joint HKCA-HKIOA Symposium on Quiet Construction



26 April 2017

International Noise Awareness Day:
HKIOA-HKU Joint Talk

27-30 August 2017 INTER-NOISE 2017





10 March 2018

Certificate Courses Lunch Gathering & Certificate Presentation Ceremony



28 March 2018

Annual General Meeting 2018 & Dinner



3 July 2018

Seminar on Noise Control Policy and Mitigation Design in Victoria, Australia

26-27 July 2018

The 8th Cross-Strait Acoustical Conference
第八屆海峽兩岸聲學學術交流研討會議

2018 The 25th Anniversary



12 December 2018

The 25th Anniversary Gala Dinner & Christmas Party



1 June 2019

Prize Presentation Ceremony of “Hong Kong Soundscape – A Sound Map Creation Competition”



8 June 2019

Technical Visit to Xiqu Centre



25 June 2019

Technical Seminar on Innovative Noise Mitigation Designs (INMD) of Building Envelops & 4D Virtual Reality (VR) System



11 June 2020

Annual General Meeting 2020



30 November 2021

Career Sharing



21 April 2021

Annual General Meeting 2021

2023 The 30th Anniversary





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香港聲學學會

Hong Kong Institute of Acoustics