香港聲學學會 The Hong Kong Institute of Acoustics

MESSAGE FROM THE CHAIRMAN

The design and installation of roadside noise barriers has become a very hot topic in recent days following the controversial arrangement adopted by the Government in the installation and subsequent demolition of the barriers along the Tolo Highway. Questions on installation and maintenance costs, safety, insulation effectiveness and appearance are being raised and environmental and acoustical engineers together with Government officers are now under pressure to carry out review on the issue.

I was invited by Cable TV as Chairman of the Institute, to appear on his programme on 11 February 2003 to express opinion on issues related to roadside noise barriers. The intention was to bring professional advice to the general public so that people could have more relevant information to carry out sensible discussion. Shortly following the interview on TV, a consolidated article with views from various committee members

was prepared and released to the press so as to elaborate on the technical aspects and to clarify misunderstandings that appeared from the prevailing discussions. To arouse members' interest and to stimulate further discussion and cross fertilisation, the press release has

been included in the Elite Club for information. It is hoped that as professionals, members can actively particinate and express their expert knowledge for the well being of the profession and society



Prof. K.M. Li, Chairman

In the nast months, the issue of barriers along Tolo Highway has been the focus of discussions among the Legislators, the members of public and the media. However, there appears to be some misunderstandings on the technical aspect involved. For the benefit of the public, the Hone Kone Institute of Acoustics would like to

The traffic noise problem in Hong Kong is very serious. According to EPD, some 1 million people in HK are exposed to high traffic noise level [i.e. higher than 70 dB(A) L10(1h)]. compared with other countries like Japan, Australia, Germany and the Netherlands (see chart 1 which is extracted from the website of Advisory Council on the Environment, The Hong Kong SAR Government). Energine noise barriers to reduce traffic noise is a common practice.

elaborate the following technical aspects.



adopted worldwide. This is not a new technology. The basic principle is to prevent traffic noise from reaching the neighbourhood communities by providing a shielding screen between highways and residential apartments. Because of typical features in Hong Kong (high-rise residential buildings at short distances from highways), relative high harriers are needed for a meanineful noise reduction. Some members of the community comment that barriers in Hong Kong

Figure 1 - A barrier in Kores

are very massive. We share the same concern. However, we believe that our noise barrier systems need to be rigid, durable and able to withstand typhoon conditions. It is worthy to compare practices in other Asian cities such as Korea, Taiwan and Japan where they

Sounding Board

第九屆全國噪音與振動控制工程學術會議報告(二季零二年十月)

M F-H.

十月十七日,我們一行三人(Maurice, Westwood和我)勞著又與奮又緊張的心情機到了南京。 與奮的是有機會見識一下南京這個神秘的古都,而緊張的卻是要演講的內容遇沒有準備好。

労働的及利電量系統 : 明示近回下班からか : カルルの父文状況の1分であなり、 登記人成者宗華東越京後、我所設定名分別海特問、由版をMOOの公司人が一起から 倉南京の成土人情、再試出名的大問禁、最後後係令我們不得不回飯店休息、準備迎接明天幼會 場。

本品會構具分至天通行(十月二十八五十月三十月)、超過一百七十位代表,三十五個食自美 國、德國、漢訓、荷蘭、星如政及台灣等國家及地區的嚴定事實了本區會議。其中二十七國藏家展 示了它們的產品,出席了這次會議。最自由京庆時的對徵款。來自中國科學院的報用混穀稅。來自 上海的夢生生教授名名工等也位代表主持了周藻裁。,而泰康聲學會代表則包括Wistwood、KK、 从Marice的意。本學學會會最便又了瓦斯海及、另一,選有二屆海及中華港北海代表會分程度交

會議開幕儀式結束後, 程明昆教授、章奎生教授、柳寺園教授及王華卿教授養表了大會的四個 核心課題, 課題包括"二十一世紀的聲景度", "可持持續的人层營環境及具備的保障技術"等。 第二天的論文養表部合分三核巡行,分別為"職營財", "職營費及及建議營幣", 而屬論文養 表榜, 太全報預留了星期的時間期本代表提出問題及附論。各代表對北環節的應度報程無限。

Westwood、KK和我在這天上午分別發表了我們的論文,而Maurice則被大會追掉在簡單樣上代表 希腊德特會發詞 通過各項這次一樣,不如如從了普洛整學學會與因內同變的相互了解及大院。這裡加了我們對 周內變壓的就就以及關係或當的認識。我們會更大能能是環境地參與下一屆(第十屆)全國機需與 抽動物就主任權的申請(提供力學與例)。

以下事項有技术家庭表

- 1. 國內所於2003年修改現前的環境噪樂標準及條例。屆時香港祭學學會亦可就單級极本提出專案
- 意見。 2. 環境機勢部及建築整學部將會於明年三月在昆明維行會議,而香港變學學會屬時亦可讓代表象 加·Maurice解會與程數校期餐。



上海王拳仰教校, 康超偉及楊國良在會議中 中共民在明是教徒。

上海名玉领教授高工典音语祭学者代表及内地朋友

MESSAGE FROM THE EDITOR

E.N. An Fenng

Members probably realised that a charge has been introduced in the Elist Club of this issue. The press release by the Institute was included partly because of the recent concern on roadside noise burriers and partly because of our with to make use of it as a larve of introducing new elements such as "lectural and one"ype of materials. It aims at widening the dimension of the newletter, making it more interesting and informative. Members are encouraged to send in their articles and share their excentance and technical show-how with others.

ELITE CLUB

would also experience comparable typhoon conditions and have similar residential buildings - roads configurations as in Hong Kong, Figures 1 - 4 show typical high vertical barriers in Korea, Hong Kong, Taiwan and Japan, respectively. Some of the barrier structures used in these Asian countries are less massive compared with that used in Hong Kong.







Figure 3 - A barrier in Talwa





Barrier at Tullamarine Highway

Higher and massive barriers would inevitably be visually less attractive and perhaps more costly for constructing aesthetically pleasing structures. However, we share the view of many sectors of the community that the aesthetic design could be done in better ways. Many nice looking and innovative designs are available in overseas. For instance, the burrier (Figure 5) at freeway from Melbourne International Airport to downtown becomes a landmark, Currently, Japan is investigating the use of vegetation on barriers (Figure 6).

We can borrow these examples to come up with attractive and integrated noise barrier designs using different forms of mixed materials and shape to give better southeric effects. Some members of public prefer using trees instead of roadside barriers. However, for trees to be effective in noise reduction, it should be

about 10 m thick could only give 1 dB(A) reduction



TECHNICAL VISIT TO NOISE MITIGATION MEASURES AT MELEOO FOR FOUR TRACKING SYSTEM



On 28th September 2002, the Institute organized a half-day technical visit for our memhere to inspect a section of the properly erected poise enclosure along the existing Lantau Airport Express Line near the Olympic Station. The enclosure is a noise mitigation mea-

tion (MTRC) Four Tracking System. Participants included consultants, contractors, acoustic product suppliers and government officers. Prior to the visit, a seminar, chaired by Mr. Martin Chan, was held at Leighton's site office to give a brief introduction about the Four Tracking System project.

Various topics were covered by those major parties involved in the project: Mr. James Wong (AEC) on the background and acoustic design considerations, Mr. Thomas Yan (MTRC) on the planning and construction aspects. Mr. Alvin Leune (IAC) on the acoustic material

The Q&A session received unexpectedly overwhelming responses from the audience resulting in an over-run of about 20 minutes. The actual site visit also attracted much interest

from participants with lots of photo shootings. The tour finished at around noon. The Institute would like to give special thanks to MTRC, Leighton Contractors (Asia) Ltd.



and Grace Kwok of AEC to make this event possible. Sounding Board Sounding Board Sounding Board Sounding Board Sounding Board Sounding Board Sounding Board

TACKLING TRAFFIC NOISE IN HONG KONG AND OTHER ASIAN CITIES Martin Chan





The seminar was co-organized by HKIOA and Hong Kong Institution of Engineers (HKIF). The seminar was conducted at the HKIF Headquarters during the Saturday morning of 2nd November 2002. The seminar was split into two separate sessions delivered respectively by Mr. Martin Chan from Hyder Consulting Limited (now with Amyson Technologies) and Mr Lok Yan from Black & Vestch HK Limited, Mr. Vincent Wong, representative of HKIE, was the MC of the seminar. The seminar was

well attended by young and mature members of both Institutes.

A brief review of the approach of legislative control, practice and polices in tackling traffic noise problems in Hong Kong. Japan, Tajwan and Singapore was given in the first session. "Mainland China is omitted because China's current environmental law and resulations are undergoing some major changes but the exact details are unknown.", a remark made by Mr. Chan. In order to help the audience understand the technical aspects of the talk, some basic concepts in the generation, propagation and control of road traffic noise were covered. An ad-hoc comparison between Hong Kong's criteria and those in the other three Asian countries was made. A dozen of slides showing examples of barriers and enclosures constructed in Japan, Taiwan and Mainland China were presented as well

A local case study was presented in the second session. Ways of proactively tackling road noise problems arising from heavy good vehicles in the course of a new town planning were demonstrated. Mr. Yan pointed out that "Based on the findings

of the CTS-3 Report, rationalization of the road networks associated with heavy good vehicles is one of the key solutions to the problems." The "Truck Route" concept as a traffic management measure was presented and its effectiveness was briefly discussed together with environmentally friendly design such as mill-based development, extensive grade-sensrated nedestrianisation and an extensive network of footroths and cycle tracks. Given the fact that the public is becoming less favourable with the readside noise barriers because of their notential visual impacts, the Truck Route concept is far better than barriers.



REPORT ON "CALIBRATION AND ACOUSTICAL STANDARDS" SEMINAR



exhaustive and rigorous calibration as the analogue type needs.

phone calibration.

on sound level meter, its calibration and acoustical standards in the Hong Kong A total of three presentations were conducted. The first presentation was by Mr

minute presentation, Jonathan asked members to take note if the calibration takes into account of the disturbance due to the body of sound level meter. The second 10-minute presentation was by Mr Tom HO of S&V Samford. Tom talked about why we need calibration. At his concluding remarks, Tom pointed out that in future the fully digitized sound level meter may not need

For the third presentation (which was the main theme of the evening), we had great Standards, National Research Council, Canada to talk to us on "Calibration and Acoustical Standards". Dr WONG started with the theory, practice and stability of primary reciprocity calibration system. Then, he discussed about the effects and concern of baro-



metric pressure on microphone sensitivity. After that, Dr WONG briefed us about the uncoming new IFC standard IFC61672-1 for Sound level meters (which would replace IFC 60651:1979 and IFC 60804: 1985). We were given to understand that Part 1 had already been published in May this year but would not be effect until Part 2 (type test nattern) and Part 3 (calibration) publish. The new IFC standard is applicable to both sound level meters with extensive analogue or digital signal processing and multiple analogue and digital outputs. This new standard would also include specification for Electromagnetic compatibility. Dr WONG said that it is likely that Part 2 would be published in mid next year. Dr WONG also told us something about the high power ultrasound measurement and the recent findings by Swedish scientists. Before the seminar ended, Dr WONG highlighted to us the usefulness of comparison micro-

Tom in the seminar. and informative. Many questions were raised with regard to new IEC standards for Sound Level Meters. ne Board Sounding Board Sounding Board Sounding Board Sounding Board Sounding Board Sounding Board