Environmental Research, Technology Demonstration and Conference Project

ECF Project:	ECF 2020-91
Project Title:	Soundscape forecast as a tool to improve noise impact assessments in the urban planning of Hong Kong
Principal Investigator:	Professor Mak Cheuk Ming, Department of Building Services Engineering, The Hong Kong Polytechnic University
Total Approved Grant:	$500,000
Duration:	3/1/2022 to 2/5/2024
Project Status/Remarks:	On-going
Project Scope:	The importance of soundscape has been increasingly recognised by international governments and organisations because of growing evidence that the health and quality of life of citizens are associated with the environmental sound quality. The current noise impact assessment (NIA) in the urban planning of Hong Kong mainly relies on the noise level forecast. However, good sound quality is more than mere quietness. In the previous researches of the PI and his team, a valid, reliable and applicable psychometric tool, psychoacoustics perception scale, is designed to quantitatively assess the three fundamental human perceptual dimensions of sounds in terms of a EPA model covering the subjective evaluation of human general judgment (Evaluation, E), sensitivity to the magnitude (Potency, P), and sensation of the temporal and spectral compositions (Activity, A) of sounds. This project aims to – (a). Determine and formulate the predictable relationships between the current noise criteria, proposed psychoacoustic parameters, potential noise impacts, and the EPA model; (b). Design and validate the framework of soundscape forecast; and (c). Promote and encourage the adoption of soundscape forecast in NIA to different sectors in Hong Kong to achieve a sustainable development and arouse the public awareness of soundscape planning. The usefulness of the quantitative soundscape forecast for sustainable urban planning of Hong Kong will be studied.
Summary of the Findings/Outcomes:	To be available upon completion of the project