Addendum to Environmental and Ecological Assessment (EEA) Peter Scott Field Studies Centre – Demolition and Rebuild

As a leading conservation organisation, WWF maintains a commitment to high standards and transparency on our environmental and ecological monitoring throughout the Peter Scott Field Studies Centre (PSFSC) Demolition and Rebuild. On the basis of the below findings from our on-site noise tests, we will endeavour to minimize noise levels during demolition and rebuild by using the STC-24 noise barriers, the highest-rated on the market, with QPME.

Demolition of PSFSC will be conducted in June 2020, after which construction will commence. There are no statutory requirements for noise levels for works at PSFSC under the Noise Control Ordinance.

WWF has employed a highly-respected ecological consultancy with long experience in the Deep Bay area to ensure that potential impacts arising from the project will be fully considered and adequately mitigated. Avoidance and minimisation of impacts are the guiding principles in regard to mitigation, and this has been achieved with the preparation of an environmental and ecological assessment (EEA) available online here, for all elements of the project, and surveys of wildlife before and during the rebuild to identify impacts promptly.

Effective use of noise barriers will ensure the demolition and rebuild methods chosen will have the minimum of detrimental impacts on wildlife and the local community. The EEA has been used as the basis for non-statutory mitigation measures, particularly the erection of noise barriers to completely enclose the site boundary for the entirety of the works period.

In order to assess the noise mitigation capability of our sound barriers, WWF commissioned SMEC to conduct real-world testing, in addition to computer-based noise modelling in the EEA. On-site tests at the PSFSC forecourt, conducted on 22 August 2019 and 18 September 2019, involved an excavator-mounted hydraulic breaker. This was specifically chosen as the noisiest piece of equipment that is expected to be used for the PSFSC demolition and rebuild works. Concrete blocks of 1.2m x 1.2m x 1m were used as the substratum.

SMEC tested two models of SilentUP Retractable Noise Barrier: the STC-18, which has an advertised insertion loss of 22 dB(A) and the STC-24 which has an advertised insertion loss of 26 dB(A).

Key findings of the study:

LOCATION	INSERTION LOSS, dB(A)	
	STC-18 TEST	STC-24 TEST
Receiver point (2m distance)	14	18

The findings of SMEC's report indicate:

> From the test of the STC-24 noise barrier, it can be seen that the insertion loss of the ST-24 noise barrier has a generally higher insertion loss compared with the STC-18 barrier.

> The STC-24 barrier has a layer of sound absorptive material attached to the barrier panels and the panels are made of denser material compared with the STC-18 barrier. The sound absorptive material minimizes the effect of reflection and diffraction of noise. Overall, the STC-24 barrier is found to provide a better noise attenuation performance then the STC-18 barrier.

> It is recommended the STC-24 model of the SilentUP barrier should be used for future noise barrier installation during the demolition and rebuild of PSFSC.

Test of Noise with Barrier STC-24 and without machine noise dampening (18 September 2019)

Location	Background noise		Machine noise* (without barrier)			Background noise		Machine noise* (with barrier)			Insertion Loss, dB(A)
	Time (starting)	$L_{eq(30s)}$	Time (starting)	$L_{eq(30s)}$	Corrected $L_{eq(30s)}$	Time (starting)	$L_{eq(30s)}$	Time (starting)	$L_{eq(30s)}$	Corrected $L_{eq(30s)}$	Single barrier
At noise source (inside site)	14:33:09	43	14:41:39	92	92	15:27:39	44	15:34:39	93	95	N/A
	14:33:39	43	14:43:39	93		15:28:09	43	15:35:09	93		
	14:35:09	43	14:44:09	92		15:28:39	43	15:35:39	97		
Receiver point (2m outside site)	14:33:21	45	14:41:51	94	93	15:27:51	43	15:34:51	76	77	18
	14:33:51	43	14:43:51	92		15:28:21	43	15:35:21	77		
	14:35:21	42	14:44:21	92		15:28:51	44	15:35:51	78		

* excavator-mounted hydraulic breaker