

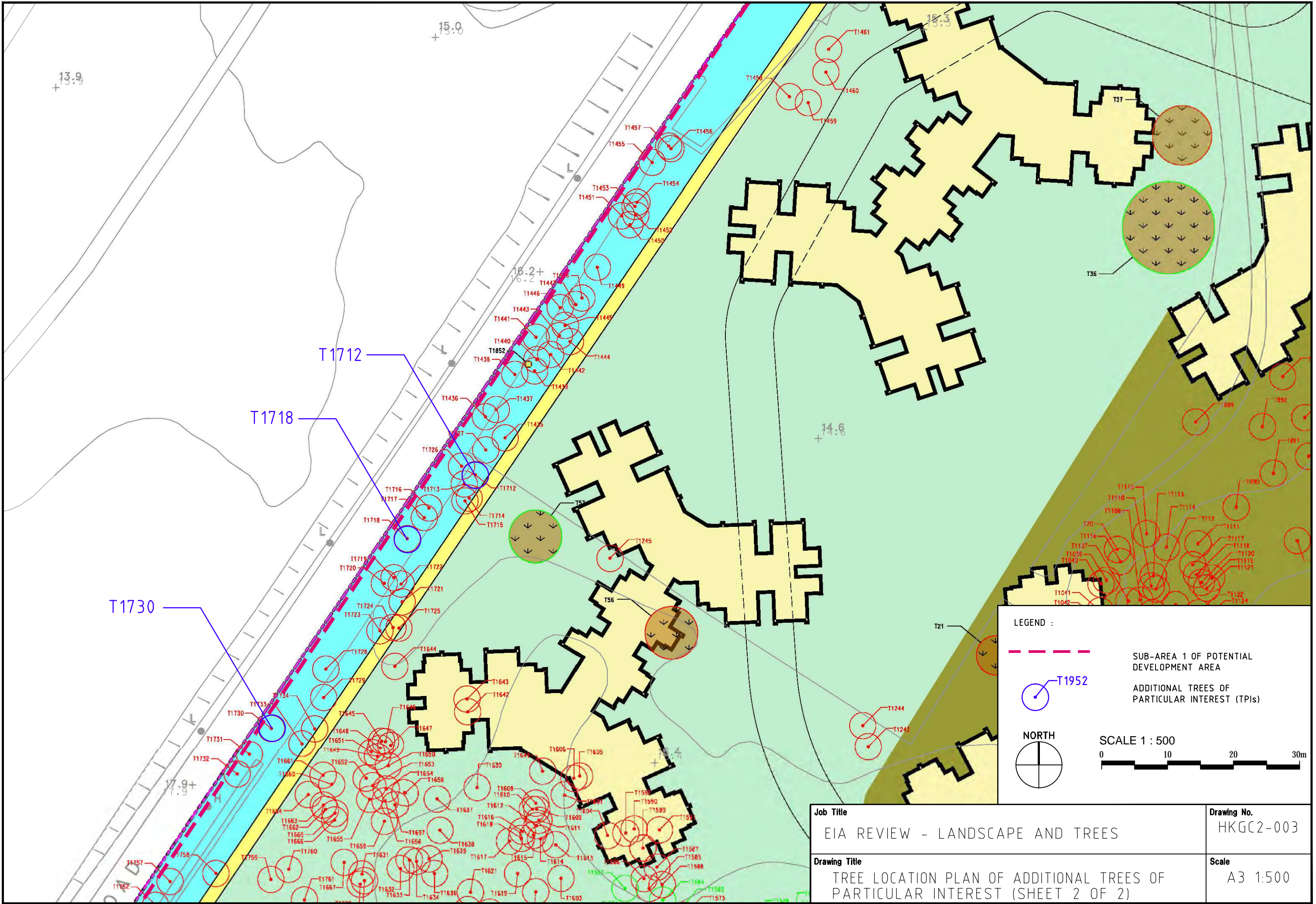
**Annex A2**  
**Additional Trees of Particular Interest (TPIs)**

Tree No.	Species		EIA Measurements			URBIS Sample Audit Measurements	
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread	Girth (mm)	DBH (mm)
T1712	<i>Melaleuca cajuputi</i>	白千層	18	950	9	3420	1089
T1718	<i>Melaleuca cajuputi</i>	白千層	18	900	9	3330	1060
T1730	<i>Melaleuca cajuputi</i>	白千層	18	900	5	3660	1165
T1952	<i>Melaleuca cajuputi</i>	白千層	14	990	7	3670	1168



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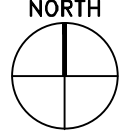





**LEGEND :**

- - - SUB-AREA 1 OF POTENTIAL DEVELOPMENT AREA
- T1952  
ADDITIONAL TREES OF PARTICULAR INTEREST (TPIs)

**NORTH**



**SCALE 1 : 500**



<b>Job Title</b> EIA REVIEW - LANDSCAPE AND TREES	<b>Drawing No.</b> HKGC2-003
<b>Drawing Title</b> TREE LOCATION PLAN OF ADDITIONAL TREES OF PARTICULAR INTEREST (SHEET 2 OF 2)	<b>Scale</b> A3 1:500





T1712 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1712 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1712 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1712 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1718 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1718 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1718 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1718 (*Melaleuca cajuputi* subsp. *cumingiana*)





T1730 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1730 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1730 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1730 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1952 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1952 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1952 (*Melaleuca cajuputi* subsp. *cumingiana*)



T1952 (*Melaleuca cajuputi* subsp. *cumingiana*)

**EIA Review – Landscape and Trees**

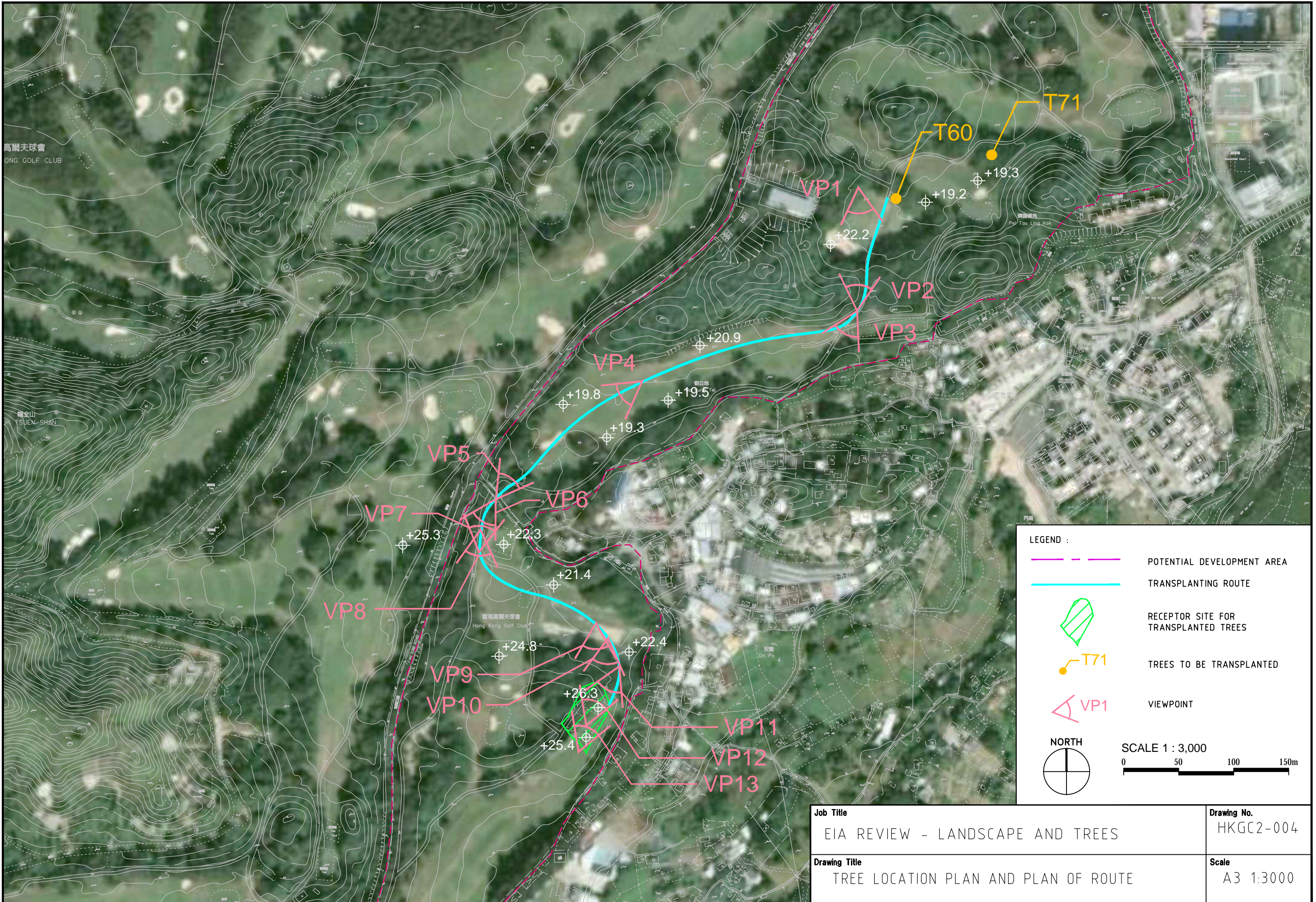
**Annex A - Errors in Tree Survey identified during sample audit in Late May and Early June 2022 – Annex A2: Additional Trees of Particular Interest (TPIs)**

**Individual Tree Survey Photographs**








**Annex B**  
**Review of Tree Transplanting Route**

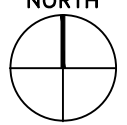





**LEGEND :**

-  POTENTIAL DEVELOPMENT AREA
-  TRANSPLANTING ROUTE
-  RECEPTOR SITE FOR TRANSPLANTED TREES
-  TREES TO BE TRANSPLANTED
-  VIEWPOINT

**NORTH**



**SCALE 1 : 3,000**



<b>Job Title</b> EIA REVIEW - LANDSCAPE AND TREES	<b>Drawing No.</b> HKGC2-004
<b>Drawing Title</b> TREE LOCATION PLAN AND PLAN OF ROUTE	<b>Scale</b> A3 1:3000





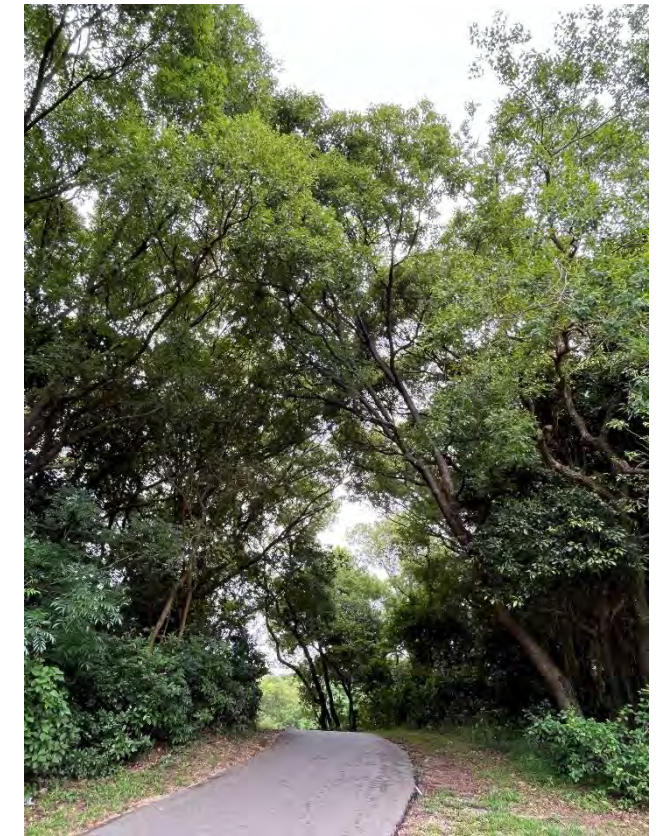
**T60 (*Adenanthera microsperma*)**  
Located at approx. +19mPD, near Hole 3 within a group of trees



**T71 (*Ficus microcarpa*)**  
Located at approx. +19mPD, between Hole 2 and Hole 3 within a group of trees



**VP1**  
Looking at the large group of trees located between Hole 3 and Hole 4 that will be directly affected by the trees to be transplanted



**VP2**  
Close up looking back at the large group of trees located between Hole 3 and Hole 4 that will be directly affected by the trees to be transplanted



**VP3**  
Looking down the fairway of Hole 4 showing the change in levels and undulating topography



**VP4**  
Looking from the middle of Hole 4 down towards the rest of the fairway of Hole 4 showing the undulating topography



**VP5**  
Looking back up the fairway of Hole 4 with many trees that will be directly affected by the trees to be transplanted



**VP6**  
Looking at the trees located on both sides of the access road between Hole 4 and Hole 5 that will be directly affected by the trees to be transplanted





**VP7**

Looking back at the trees located on both sides of the access road between Hole 4 and Hole 5 that will be directly affected by the trees to be transplanted



**VP8**

Close up looking at the large group of trees located towards the start of Hole 5 that will be directly affected by the trees to be transplanted



**VP9**

Looking at the large group of trees located between Hole 5 and Hole 6 that will be directly affected by the trees to be transplanted and showing the undulating topography



**VP10**

Close up looking at the large group of trees located between Hole 5 and Hole 6 that will be directly affected by the trees to be transplanted



**VP11**

Looking at the existing large grave area located adjacent to the area marked as the 'Receptor Site for Transplanted Trees' at approx. +24mPD and showing the huge change in level in the topography and the need to travel over the top of the grave



**VP12**

Looking back towards the existing large grave area and the large group of trees located between Hole 5 and Hole 6 that will be directly affected by the trees to be transplanted and showing the huge change in level in the undulating topography



**VP13**

Looking from near the Tee Box of Hole 6 which is the area marked as the 'Receptor Site for Transplanted Trees' at approx. +26mPD back towards the existing large grave area and the large group of trees located between Hole 5 and Hole 6 that will be directly affected by the trees to be transplanted



**Annex C**

**Checklist of Requirements of LVIA**

## Checklist for Environmental Impact Assessment (EIA)

<b>Abbreviation</b>	
EIASB	Environmental Impact Assessment Study Brief NO. ESB-318/2019 for Technical Study on Partial Development of Fanling Golf Course Site
EIAO TM	Environmental Impact Assessment Ordinance Technical Memorandum
EIAO TM Annex 10	Environmental Impact Assessment Ordinance Technical Memorandum Annex 10: Criteria for Evaluating Visual and Landscape Impact, and Impact on Sites of Cultural Heritage, <a href="https://www.epd.gov.hk/eia/english/legis/memorandum/annex10.html">https://www.epd.gov.hk/eia/english/legis/memorandum/annex10.html</a>
EIAO TM Annex 18	Environmental Impact Assessment Ordinance Technical Memorandum Annex 18: Guidelines for Landscape and Visual Impact Assessment, <a href="https://www.epd.gov.hk/eia/english/legis/memorandum/annex18.html">https://www.epd.gov.hk/eia/english/legis/memorandum/annex18.html</a>
EIAO GN	Environmental Impact Assessment Ordinance Guidance Note
EIAO GN No. 8/2010	Environmental Impact Assessment Ordinance Guidance Note 8/2010: Preparation of Landscape and Visual Impact Assessment. <a href="https://www.epd.gov.hk/eia/hb/materials/GN8.pdf">https://www.epd.gov.hk/eia/hb/materials/GN8.pdf</a>



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N1	<p><b>Landscape and Visual Impact Assessment</b></p> <p>Potential landscape impacts arising from the Project and potential visual impacts arising from the above-ground structures of the Project, including impacts to the existing landscape resources, the users of the Fanling Golf Course and residents of the nearby residential areas;</p>	EIASB 3.2.1 (x)	All the potential sources of impacts, any potential and residual impacts to the landscape resources and visual impacts to Visually Sensitive Receivers (VSRs) due to the proposed Project are clearly identified and accurately described / defined.	No	Section 11.8 Table 11.7 Section 11.9	<p>The LVIA is based on incorrect assumptions and is not supported by adequate data and evidence.</p> <p>There are significant errors and omissions in the identification of potential sources of impact arising from the Project.</p> <p>The area of direct physical impact due to the proposed housing development and mitigation measure areas to some LRs are underestimated (e.g. LRs 1.1 and 1.2) in Section 11.9.1. There are errors in the measurement of the affected areas of LRs, LR1.1 and LR1.2 mapped on Figure 11.2. Para. 11.9.1.2 states, for LR1.1, 'Total area affected is approximately 0.13 ha' whereas 0.15 ha is measured on Figure 11.2. Similarly, para 11.9.1.3 states, for LR1.2, 'Approximately 8% (2.82ha) will be lost due to site formation and construction of the proposed public housing development and infrastructure works' whereas 3.09 ha is measured on Figure 11.2.</p> <p>The proposed future change in landscape management and maintenance party will also be a source of adverse impact not identified in the LVIA.</p>
N2	<p>Landscape and Visual Impacts</p> <p>The Applicant shall follow the criteria and guidelines for evaluating and assessing the landscape and visual impacts as stated in Annexes 10 and 18 of the TM.</p> <p>The assessment area for the landscape impact assessment shall include all areas within 500 metres distance from the boundary of the Project area and the works of the Project as identified in the EIA, while the assessment area for the visual impact assessment shall be defined by the visual envelope of the Project. The defined envelope shall be shown on a plan in the EIA report.</p> <p>Based on the latest scope and information of the Project, the Applicant shall make reference to the technical requirements given in Appendix J and submit a methodology statement to provide with justifications the scope, approach and methodology to be adopted in the landscape and visual impact assessments for the agreement of the Director prior to the commencement of assessment.</p>	EIASB 3.4.11	The 500m offset boundary line for the LIA study area is offset from the whole Project Site boundary to clearly and accurately show the study area assessed in the LIA. All potential VSRs are identified and mapped within the visual envelope for the VIA.	No	Figures 11.1, 11.2 LRs, 11.3 LCAs  Figures 11.4 Visual Envelope, 11.5 VSRs, 11.6 VPs	<p>The LVIA does not provide sufficient details and is not supported by adequate data and evidence.</p> <p>Annexes 10 and 18 of the EIAO TM have not been followed entirely.</p> <p>The broadbrush / group tree survey fails to cover the entire landscape study area (all areas within 500 metres distance from the boundary of the Project area) – the tree survey area only covers the area within the PDA.</p> <p>The PDA being split into four sub-areas distorts the value of the Trees of Particular Interest (TPIs) located within Sub-Area 1 vs the TPIs located in Sub-Areas 2-4.</p> <p>Only the Visual Envelope is shown / defined on a plan.</p>
N3	<p>The Applicant shall review relevant plan(s) and conduct surveys/studies to identify existing sensitive landscape characters and landscape resources (including but not limited to Old and Valuable Tree (OVT), tree of large size, and protected/rare plant species such as Aquilaria sinensis), and recommend landscape areas of high landscape value as country park, coastal protection area, green belt, conservation area designations, watercourses and woodland areas. Any guidelines on landscape and urban design strategies and frameworks that may affect the appreciation of the Project shall also be reviewed. The aim is to gain an insight to the future outlook of the area affected so as to assess whether the Project can fit into the surrounding setting. Any conflict with the statutory town plan(s) and any published land use plans shall be highlighted and appropriate follow-up action shall be recommended. A system shall be derived for judging the landscape and visual impact significance as required under the</p>	EIASB Appendix J 1	There are man-made and highly managed landscape resources located at FGC which would usually be assessed of a lower landscape value but these resources should be assessed in greater detail as they have been managed in a way that are an exemplar in HK. The sum of the landscape resources all combined contributes to the overall landscape character of the area.	No		<p>The LVIA is based on incorrect assumptions, does not provide sufficient details and is not supported by adequate data and evidence.</p> <p>FGC is indisputably an important cultural and historic landscape. FGC may reasonably and objectively be considered the oldest and most beautiful large-scale structured man-made landscape in all Hong Kong and the protection and preservation of important cultural (including <i>fung shui</i> significance) and historic landscapes should be properly considered, which has totally been omitted in the LVIA.</p> <p>There is no assessment of the PDA having a higher landscape quality and landscape heritage value compared to the remaining areas of the FGC west of Fan Kam Road.</p> <p>The area of direct physical impact due to the proposed housing development and mitigation measure areas to some LRs are underestimated (e.g. LRs 1.1 and 1.2) in Section 11.9.1. There are errors in the measurement of the affected areas of LRs, LR1.1 and LR1.2 mapped on Figure 11.2. Para. 11.9.1.2 states, for LR1.1, 'Total area affected is</p>

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	Annexes 10 and 18 of the TM. Cumulative landscape and visual impacts of the Project with other existing, committed and planned developments in the assessment area shall be assessed.					<p><i>approximately 0.13 ha</i> whereas 0.15 ha is measured on Figure 11.2. Similarly, para 11.9.1.3 states, for LRI.2, ‘Approximately 8% (2.82ha) will be lost due to site formation and construction of the proposed public housing development and infrastructure works’ whereas 3.09 ha is measured on Figure 11.2.</p> <p>There is an inconsistency in the internal data / information cross-referenced / provided – the sensitivity for LCAI is classified as ‘High’ in Table 11.4, the sensitivity of LCAI carried forward to Table 11.11 “Significance Threshold for LR &amp; LCA” is ‘Medium’ not ‘High’ which renders the subsequent assessment in Table 11.11 to be erroneous and contributes to the residual impact (“Moderate”) being understated.</p> <p>There is an inconsistency found within / throughout the Landscape Impact Assessment (LIA) in regards to the number of TPIs found / located within the PDA (Sub-Area 1-4) – There are 449 TPIs reported within LCAI in Table 11.5 under Section 11.6.2 (Noting this is the lowest number indicated and that the land area that LCAI covers is a lot larger than that of the tree survey boundary / PDA.) There are 459 TPIs tabulated in the TPIs Tree Schedule in Appendix 11.2. There are 70 TPIs reported within Sub-Area 1 in Section 11.6.3.3 and 395 TPIs reported in Section 11.6.3.7 within Sub-Area 2-4 – added together that is 465 TPIs. There are 465 TPIs when added together in Table 11.10 under Section 11.10 of the LVIA.</p> <p>The tree survey conducted during the EIA had not accurately recorded the correct data as there were numerous factual errors found in the information provided on some tree species identification, measurements of some tree heights and DBH in the tree schedule – leading to some under-estimated and over-estimated tree sizes hence it is unreliable. There is no statement in the LVIA or indication at the top of the tree schedule to confirm that the Tree Survey was undertaken by a Certified Arborist. There are additional TPIs with DBH larger than 1m (T1712, T1718, T1730 and T1952) that were wrongly not identified as TPIs within Sub-Area 1.</p> <p>A very large (917mm DBH) ‘Heritage Tree’ (as classified by Prof. CY Jim in 2020) located near the Car Park is missing altogether from the tree survey as well as many other smaller trees (approx. 24 minimum) are also found to be missing near the Car Park area.</p> <p>There is a general under-estimation of tree quality in the Tree Survey, of all the trees in the individual tree survey, only one individual tree was assessed as having High Amenity value. This suggests there was a lack of objectivity by the surveyors.</p> <p>There were trees (T55, T58, etc) listed in the tree schedule that are not shown on the tree survey plans. There were also trees found on Site to be completely missing (not surveyed or recorded at all) in the EIA tree survey within Sub-Area 1 whereby these trees will be directly affected therefore the number of trees required to be felled due to the proposed project is not accurate and hence the compensatory tree number is also not correct.</p> <p>There are also nine ‘Dead Trees’ proposed to be Retained within Sub-Area 1 listed in the tree schedule – even though these trees are proposed</p>



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N4	The Applicant shall describe, appraise, analyse and evaluate the existing and planned landscape resources and character of the assessment area. A system shall be derived for judging landscape and visual impact significance. Annotated oblique aerial photographs and plans of suitable scale showing the baseline landscape character areas and landscape	ELASB Appendix J 2	The description of how unique / sensitive and the degree of compatibility of the Project with the existing unique landscape	No	Section 11.6.3 Table 11.10 (CM1)	<p>to be Retained they would also need to be compensated for – these are not accounted for in the proposed compensatory tree numbers in the LVIA. Landscape Impact Assessment stated that “No registered “Old and Valuable Trees” (OVT) were recorded during the tree survey.” which is misleading because the land is private and OVTs are not recorded on Private land.</p> <p>However, OVT number LCSD N/40 (found on the Register of OVTs) is located on Fan Kam Road near the water pumping station, just outside the FGC boundary, almost dead centre in the 500m Landscape Assessment Study Area. Irrespective of whether or not OVT LCSD N/40 falls within the precise boundary of the Tree Survey, its presence should have been recorded in the Landscape Baseline Survey / Study.</p> <p>Furthermore, the Landscape Impact Assessment fails to mention that many, if not all, of the TPis will become registrable as OVTs as soon as Government resumes the land. The 459 TPis identified within the 32 ha PDA in the EIA tree survey plus the additional TPis (T1712, T1718, T1730 and T1952) that were wrongly not identified as TPis within Sub-Area 1 would, when registered as OVTs, double the total existing number of OVTs (459) in all of Hong Kong.</p> <p>The baseline studies completely failed to identify the uniqueness of the existing sensitive, cultural (including <i>fung shui</i> significance), historic, important, landscape character of FGC in the National context – the baseline landscape sensitivities used in the assessment are not consistent throughout the LVIA. The description of LCA1 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct. The maturity of LCA1 has been wrongly assessed as ‘Semi-mature - Mature’ as well as the regional importance wrongly assessed as ‘Medium’, when this significant LCA has been in existence for over 110 years during the course / over the development of the Old Course’s very long history. It should be classified as being of High Local, Regional and National importance being the oldest continuously managed and maintained golf course in all of China and probably Asia.</p> <p>The LVIA fails to mention or consider the Government’s plan (as announced in the Chief Executive’s Policy Address in October 2021) for the Northern Metropolis in the Review of Planning and Development Control Framework, undertakes no review of it, hence there is no description of the implications for the study area which is a significant omission with consequential adverse impact on the subsequent assessment.</p> <p>The LVIA failed to make reference to relevant important published papers on scientific research previously undertaken at the FGC including the papers on Legacy Effect of Trees in the Heritage Landscape of a peri-urban golf course, Cooling Effects in a Golf Course and Heritage Trees in FGC by Prof. Jim et al etc.</p> <p>The LVIA is based on incorrect assumptions, does not provide sufficient details and is not supported by adequate data and evidence.</p> <p>The Landscape Baseline Survey is ambiguous and inaccurate, because the baseline studies failed to identify the uniqueness of the existing sensitive landscape character of FGC – the baseline landscape sensitivities used in</p>



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	<p>resources and mapping of impact assessment shall be extensively used to present the findings of impact assessment. Descriptive text shall provide a concise and reasoned judgment from a landscape and visual point of view. The sensitivity of the landscape framework and its ability to accommodate change shall be particularly focused on. The Applicant shall identify the degree of compatibility of the Project with the existing and planned landscape setting, recreation and tourism related uses, and scenic spot. The landscape impact assessment shall quantify the potential landscape impacts as far as possible so as to illustrate the significance of such impacts arising from the proposed development. Clear mapping of the landscape impacts is required. Broad brush tree and vegetation survey shall be carried out and the impacts on existing trees shall be addressed. Cumulative landscape and visual impacts of the Project with other committed and planned developments shall be assessed.</p>		<p>character and its ability to accommodate the potential large magnitude of change is clearly stated and justified due to the overall uniqueness of the existing irreplaceable heritage landscape.</p> <p>After the broad-brush tree and vegetation survey, the impacts on all the affected existing trees are identified / addressed – The proposed planting locations for the Compensatory Trees are identified / shown.</p>		<p>Section 11.14 Figure 11.9.1</p>	<p>the assessment are not consistent throughout the LVIA, as well as the assessment of the maturity, regional importance and rarity, leading to grossly inaccurate (understated) adverse impact significance predictions. The description of LR2 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct. The maturity of LR2 has been wrongly assessed as 'Young' as well as the regional importance wrongly assessed as 'Medium', when this significant LR has been in existence for over 110 years during the course / over the development of the Old Course's very long history. It should be classified as being of National importance being the oldest continuously managed and maintained golf course recreational grassland in all of China and probably Asia. There is no mention of its special integrated relationship with / supportive role to the adjacent woodland and tree roots allowed to freely stretch underneath the grassland areas with no restrictions. The description of LCA1 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct.</p> <p>The area of direct physical impact due to the proposed housing development and mitigation measure areas to some LRs are underestimated (e.g. LRs 1.1 and 1.2) in Section 11.9.1. There are errors in the measurement of the affected areas of LRs, LR1.1 and LR1.2 mapped on Figure 11.2. Para. 11.9.1.2 states, for LR1.1, 'Total area affected is approximately 0.13 ha' whereas 0.15 ha is measured on Figure 11.2. Similarly, para 11.9.1.3 states, for LR1.2, 'Approximately 8% (2.82ha) will be lost due to site formation and construction of the proposed public housing development and infrastructure works' whereas 3.09 ha is measured on Figure 11.2.</p> <p>The tree survey conducted during the EIA had not accurately recorded the correct data as there were numerous factual errors found in the information provided with some trees missing (not recorded in the tree survey) hence it is unreliable and therefore the impacts on existing trees are not accurately assessed / addressed. There is no statement in the LVIA or indication at the top of the tree schedule to confirm that the Tree Survey was undertaken by a Certified Arborist.</p> <p>A very large (917mm DBH) 'Heritage Tree' (as classified by Prof. CY Jim in 2020) located near the Car Park is missing altogether from the tree survey as well as many other smaller trees (approx. 24 minimum) are also found to be missing near the Car Park area.</p> <p>There are significant errors and omissions in the identification of potential sources of impact arising from the Project.</p> <p>There is a lack of any evidentiary support for the effectiveness of the proposed mitigation measures. The proposed mitigation measures should be identified and assessed as potential sources of impact. The potential impacts to the proposed compensatory tree planting locations in Sub-Area 3 are not identified / assessed.</p> <p>The proposed future change in landscape management and maintenance party will also be a source of adverse impact not identified in the LVIA.</p> <p>The LVIA fails to mention or consider the Government's plan (as announced in the Chief Executive's Policy Address in October 2021) for the Northern Metropolis in the Review of Planning and Development</p>



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N5	<p>The Applicant shall assess the visual impacts of the Project. Clear illustration including mapping of visual impacts is required. The assessment shall mainly include the following:</p> <ul style="list-style-type: none"> <li>(i) identification and plotting of visual envelope of the Project;</li> <li>(ii) appraisal of existing visual resources and character as well as the future outlook of the visual system of the assessment area;</li> <li>(iii) identification and justification of the key groups of existing and planned sensitive receivers within the visual envelope with regard to views from ground level, sea level and elevated vantage points, and clearly indicate the sensitive receivers on a plan of appropriate scale;</li> <li>(iv) description of the visual compatibility of the Project with the surrounding and the planned setting, its obstruction and interference with the key views of the study areas, and changes in visual amenity;</li> <li>(v) identification and description of the severity of visual impacts in terms of distance, nature and number of sensitive receivers. The glare impacts of the Project shall be considered in the assessment. Assessment on effectiveness of the proposed mitigation measures of visual impacts during the construction and operation phases shall be carried out by comparing the impacts with and without mitigation measures; and</li> <li>(vi) evaluation and explanation with supportive arguments of factors considered in arriving the significance thresholds of visual impacts. The visual impacts should include presentation of an evaluation matrix derived for judging impact significance.</li> </ul>	EIASB Appendix J 3		No		<p>Control Framework, undertakes no review of it, hence there is no description of the implications for the study area which is a significant omission with consequential adverse impact on the subsequent assessment.</p> <p>The LVIA does not provide sufficient details. There are no detailed descriptions, evaluation or assessment of the existing visual character, existing conditions or the heritage setting reported / illustrated in the existing baseline conditions. There are no plans / images / photos / any visual aids that identify and show the existing visual character of the FGC or the existing area in which the proposed housing development area in Sub-Area 1 is located. There are no clear and accurate descriptions / justifications on the compatibility of the proposed housing development for the proposed location in Sub-Area 1. There are no descriptions regarding the changes in visual amenity when viewed from within the FGC (from either east or west of Fan Kam Road) or when viewed from outside the FGC. There is no detailed assessment on the actual effectiveness of the proposed mitigation measures during the construction and operation phases.</p>
N6	<p>In evaluation of the potential glare impacts due to man-made light sources generated from the Project and associated works and recommending practicable mitigation measures, reference could be made to "Charter on External Lighting" and "Guidelines on Industry Best Practices for External Lighting Installations" promulgated by the Environment Bureau.</p>	EIASB Appendix J 4	Mitigation Measures for any potential glare impacts are included / explained.	No	Section 11.9.3 Table 11.10 (CM2)	<p>The LVIA does not provide sufficient details for implementation. Only 'control of night-time lighting glare' during the construction phase is included in the mitigation measures. There are no mitigation measures for any potential glare impacts during the operation phase.</p>
N7	<p>The Applicant shall evaluate the merits of preservation in totality, in parts or total destruction of existing landscape and the establishment of a new landscape character area. In addition, alternative location, layout, design, built-form and construction method that will avoid or reduce the identified landscape and visual impacts shall be evaluated for comparison before adopting other mitigation or compensatory measures to alleviate the impacts. The mitigation measures proposed shall not only be concerned with damage reduction but shall also include consideration of potential enhancement of existing landscape and visual quality. The Applicant shall recommend mitigation measures to minimize adverse effects identified above, including provision of a master landscape plan illustrating the landscape design and mitigation measures.</p>	EIASB Appendix J 5	<p>The merits 'preservation in totality' and 'total destruction of existing landscape...' is defined and evaluated for the heritage landscape.</p> <p>An alternative location, layout, design, built-form and construction method that will avoid or reduce the identified landscape and visual impacts has been identified / included and evaluated.</p>	No	<p>The formulation and brief examination of three development options within the overall PDA are described in Section 2.6 for different development densities.</p>	<p>The LVIA does not provide sufficient details for implementation. The LVIA baseline study failed to identify the existing unique and historic landscape character of the 110+ year old FGC Old Course which is unlike any other landscape in Hong Kong and which has national importance in this context. The predicted future conditions without and with this project are described briefly in Section 2.3 however the merits 'preservation in totality' and 'total destruction of existing landscape...' are not clearly defined and evaluated for the heritage / historic landscape of national importance. There are no alternative locations, layout, designs, built-form or construction method that will avoid or reduce the identified landscape and visual impacts provided.</p>



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N8	<p>The mitigation measures shall also include the preservation of vegetation and natural landscape resources, e.g. transplanting trees in good condition and value, provision of screen planting, re-vegetation of disturbed lands, compensatory planting, woodland restoration, peripheral landscape treatment to blend in with the surrounding environment, design of structures/chimneys, provision of finishes to structure, colour scheme and texture of material used and any measures to mitigate the impacts on the existing and planned land use and visually sensitive receivers. Parties shall be identified for the ongoing management and maintenance of the proposed mitigation works to ensure their effectiveness throughout the construction phase and operation phase of the Project, associated works, supporting facilities and essential infrastructures. A practical programme and funding proposal for the implementation, management and maintenance of the recommendation measures, and the parties responsible for all the mitigation measures from design stage to operation stage shall be provided.</p>	EIASB Appendix J 6		No	<p>A comparison of proposed construction methodologies are provided in Section 2.11 and Table 2.4</p> <p>Mitigation Measures Table 11.10</p>	<p>The LVIA does not provide sufficient details for implementation. There is a lack of any evidentiary support for the effectiveness of the proposed mitigation measures. The proposed mitigation measures including preserving / retaining existing trees in-situ in Sub-Area 1 and transplanting TPIs to Sub-Area 3 are not practical / viable to implement as there has been no apparent detailed consideration on the proposed housing development platform levels against the existing levels of the existing trees or the route to the receptor site for the trees to be transplanted (travelling through undulating land with change in elevation and dense existing vegetation which may be impacted) – no description or details are provided. There is also no apparent rationale given for felling some trees while retaining other adjacent trees.</p> <p>There is no explanation / demonstration on how the proposed transplanting of two large mature trees (T60 and T71) will be achieved as this seems not potentially viable / feasible due to their large size (difficulties would include the rootball preparations and extraction, distance and elevation changes of the route, adverse impact to other trees along the route, receptor site location, etc).</p> <p>There is no identification of any Tree Protection Areas on any plan in the LVIA to protect the trees during the Site formation and Building construction.</p> <p>Mitigation Measure CM1 "Preservation of Existing Vegetation" incorrectly groups together tree retention and tree transplanting. These should be separated as two independent Mitigation Measures as they have completely different impacts and environmental outcomes on landscape resources and landscape character.</p> <p>The LVIA failed to identify that the proposed Mitigation Measures OM1 &amp; OM4 in Sub-Areas 2 and 3 will be potential sources of adverse landscape impact.</p> <p>In the EIA LVIA Mitigation Measures Table 11.10 under both the 'Management Agency' and 'Maintenance Agency' for the Operation Phase – OM1 (Landscape Treatment in Sub-areas 2-4) and OM4 (Compensatory Tree Planting):</p> <p><i>Proposed usage of Sub-areas 2-4 has not been confirmed yet, the proposed maintenance party is subject to further confirmation.</i></p>



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N9	Annotated illustration materials such as colour perspective drawings, plans and section/elevation diagrams, annotated oblique aerial photographs, photographs taken at vantage points, and computer-generated photomontage shall be adopted to fully illustrate the landscape and visual impacts of the Project. In particular, the landscape and visual impacts of the Project with and without mitigation measures from representative viewpoints, particularly from views of the most severely affected visually sensitive receivers (i.e. worst case scenario), shall be properly illustrated in existing and planned setting at four stages (existing condition, Day 1 with no mitigation measures, Day 1 with mitigation measures and Year 10 with mitigation measures) by computer-generated photomontage so as to demonstrate the effectiveness of the proposed mitigation measures. Computer graphics shall EIA Study Brief No. ESB-318/2019 Technical Study on Partial Development of Fanling Golf Course Site July 2019 - 44 - be compatible with Microstation DGN file format. The Applicant shall record the technical details in preparing the illustration, which may need to be submitted for verification of the accuracy of the illustration. If any noise barriers/enclosures are proposed, the choice of their colours, design and materials should be compatible with the surrounding buildings and development context and their aesthetic designs should be considered.	EIASB Appendix J 7	Accurately annotate and illustrate the landscape and visual impacts of the Project on the figures.	No	Figures 11.10.1 to 11.10.16	So therefore the 2 MMs (OM1 and OM4) must both be discounted and not included in the LVIA. No practical programme and funding proposal for the implementation, management and maintenance of all the recommendation measures, and the parties responsible for all the mitigation measures from design stage to operation stage is provided. The LVIA does not provide sufficient details. No elevations are provided at all and no meaningful cross section drawings are included to clearly convey the findings of the LVIA or the proposed Mitigation Measures within the PDA, especially to show the landscape impact on the trees to be retained in-situ within Sub-Area 1. The information portrayed in general is very rudimentary and insufficient to be able to interpret, analyse and interrogate the findings of the LVIA, especially the feasibility / practicality of the proposed retention of existing trees within Sub-Area 1 as well as the tree transplanting proposals, which appear not feasible according to industry standards. There is no evidence / details presented to support the practicality or feasibility for the retention of 11 TPIs located within the proposed housing development in Sub-Area 1.
N10	(vi) the degree to which the adverse environmental impacts are reversible or irreversible: Irreversible adverse environmental impacts shall be considered as key concerns. The planned decommissioning or rehabilitation activities that may influence the degree to which the adverse environmental impacts are reversible or irreversible may be considered;	EIAO TM 4.4.3 (a) (vi)	Clearly state the adverse environmental, landscape and visual impacts are not reversible after the proposed development is built on this heritage landscape.	No	Para. 11.9.2.3 11.9.2.4 Tables 11.8, 11.9	The LVIA is based on incorrect assumptions and is not supported by adequate data and evidence. There is a lack of any evidentiary support for the effectiveness of the proposed mitigation measures. The proposed mitigation measures including preserving / retaining existing trees in-situ in Sub-Area 1 and transplanting TPIs to Sub-Area 3 are not practical / viable to implement as there has been no apparent detailed consideration on the proposed housing development platform levels against the existing levels of the existing trees or the route to the receptor site for the trees to be transplanted (travelling through undulating land with change in elevation and dense existing vegetation which may be impacted) – no description or details are provided. There is also no apparent rationale given for felling some trees while retaining other adjacent trees. The proposed mitigation measures should be identified and assessed as potential sources of impact. There is no identification of any Tree Protection Areas on any plan in the LVIA to protect the trees during the Site formation and Building construction. Mitigation Measure CM1 "Preservation of Existing Vegetation" incorrectly groups together tree retention and tree transplanting - These should be separated as two independent Mitigation Measures as they have



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N11	Landscape and visual impact assessment shall be directed towards the predicting and judging the significance of the effects that new development may have on landscape character and visual amenity. This annex describes the general approach and methodology for assessment of landscape and visual impacts. The methodology may vary from case to case, depending on the nature of the issues. However, it must be admitted that such an assessment involves subjective judgement and preference. The perception and aspiration of the community on particular landscape features must be taken into account.	EIAO TM Annex 18 Section 1		No		<p>completely different impacts and environmental outcomes on landscape resources and landscape character.</p> <p>The LVIA failed to identify that the proposed Mitigation Measures OM1 &amp; OM4 in Sub-Areas 2 and 3 will be potential sources of adverse landscape impact.</p> <p>In the EIA LVIA Mitigation Measures Table 11.10 under both the ‘Management Agency’ and ‘Maintenance Agency’ for the Operation Phase – OM1 (Landscape Treatment in Sub-areas 2-4) and OM4 (Compensatory Tree Planting):</p> <p><i>Proposed usage of Sub-areas 2-4 has not been confirmed yet, the proposed maintenance party is subject to further confirmation.</i></p> <p>So therefore the 2 MMs (OM1 and OM4) must both be discounted and not included in the LVIA.</p> <p>The LVIA is based on incorrect assumptions and is not supported by adequate data and evidence.</p> <p>The Landscape Baseline Survey is ambiguous and inaccurate, because the baseline studies failed to identify the uniqueness of the existing sensitive landscape character of FGC – the baseline landscape sensitivities used in the assessment are not consistent throughout the LVIA, as well as the assessment of the maturity, regional importance and rarity, leading to grossly inaccurate (understated) adverse impact significance predictions. The description of LR2 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct. The maturity of LR2 has been wrongly assessed as ‘Young’ as well as the regional importance wrongly assessed as ‘Medium’, when this significant LR has been in existence for over 110 years during the course / over the development of the Old Course’s very long history. It should be classified as being of National importance being the oldest continuously managed and maintained golf course recreational grassland in all of China and probably Asia. There is no mention of its special integrated relationship with / supportive role to the adjacent woodland and tree roots allowed to freely stretch underneath the grassland areas with no restrictions.</p> <p>The description of LCA1 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct.</p> <p>The perception and aspiration of the HKGC FGC community on this landscape has not been taken into account.</p>
N12	<p>Study Process</p> <p>2.1 A landscape and visual impact assessment shall cover the following:</p> <ol style="list-style-type: none"> <li>1. defining the scope and contents of the study;</li> <li>2. a baseline study to provide for a comprehensive and accurate description of the baseline landscape and visual character;</li> <li>3. a review of the relevant planning and development control framework;</li> <li>4. impact studies to identify the potential landscape and visual impacts and predict their magnitude and potential significance; and</li> <li>5. recommendations on mitigation measures and implementation programme.</li> </ol>	EIAO TM Annex 18 Section 2		No		<p>The LVIA is based on incorrect assumptions and is not supported by adequate data and evidence.</p> <p>The Landscape Baseline Survey is ambiguous and inaccurate, because the baseline studies failed to identify the uniqueness of the existing sensitive landscape character of FGC – the baseline landscape sensitivities used in the assessment are not consistent throughout the LVIA, as well as the assessment of the maturity, regional importance and rarity, leading to grossly inaccurate (understated) adverse impact significance predictions. The description of LR2 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct. The maturity of LR2 has been wrongly assessed as ‘Young’ as well as the regional importance wrongly assessed as ‘Medium’, when this significant LR has been in existence for over 110 years during the course / over the</p>



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N13	<p>Scope and Contents</p> <p>3.1 In setting the scope of the study, the following aspects shall be considered:</p> <ul style="list-style-type: none"> <li>• limits of the study area;</li> <li>• stages in the project life-cycle;</li> <li>• key issues to be addressed;</li> <li>• level of details required for baseline studies;</li> <li>• principal viewpoints to be covered;</li> <li>• system to be used for judging impact significance;</li> <li>• alternatives;</li> <li>• other development if cumulative impacts are to be assessed.</li> </ul>	EIAO TM Annex 18 Section 3		No		<p>development of the Old Course’s very long history. It should be classified as being of National importance being the oldest continuously managed and maintained golf course recreational grassland in all of China and probably Asia. There is no mention of its special integrated relationship with / supportive role to the adjacent woodland and tree roots allowed to freely stretch underneath the grassland areas with no restrictions. The description of LCA1 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct.</p> <p>The LVIA does not provide sufficient details.</p> <p>The level of details and descriptions provided in the baseline study are not sufficient given it fails to mention a lot of the key resources and issues to be addressed and significance of the landscape resources and characters in the study area.</p> <p>The LVIA baseline study fails to mention anything in regards to the important critically endangered Chinese Swamp Cypress or identify the important swampy habitat / environment in which the Chinese Swamp Cypress require to live in, hence the impact significance was not assessed accurately / at all.</p> <p>The broadbrush / group tree survey fails to cover the entire landscape study area (all areas within 500 metres distance from the boundary of the Project area) – the tree survey area only covers the area within the PDA. The PDA being split into four sub-areas distorts the value of the TPIs located within Sub-Area 1 vs the TPIs located in Sub-Areas 2-4. There are no alternative locations, layout, designs, built-form or construction method provided.</p>
N14	<p>Baseline Study</p> <p>4.1 The baseline study shall at least cover the following aspects:</p> <ol style="list-style-type: none"> <li>1. physical aspects such as geology, landform, drainage, soil, climate, including micro-climate;</li> <li>2. human aspects such as cultural features, landscape history, buildings and settlements, people affected and their perception of the landscape character; and</li> <li>3. aesthetic aspects such as the views available, visual amenity and visual character.</li> </ol> <p>4.2 The baseline study shall present an appraisal of the landscape and visual resource of the study area. It shall focus particularly on the sensitivity of the landscape and visual system and its ability to accommodate change.</p>	EIAO TM Annex 18 Section 4		No		<p>The LVIA is based on incorrect assumptions, does not provide sufficient details and is not supported by adequate data and evidence.</p> <p>The LVIA fails to mention the distinctive landform and consider the significant topographical undulations and elevation changes within the PDA, which are a fundamental and critical component of the existing uniqueness of the landscape character at FGC.</p> <p>The PDA (including Sub-Area 1) contains significant hydrology / water features including streams, ponds, and an area of low-lying swampy ground in Sub-Area 4 that is critical to the survival of the community of critically endangered Chinese Swamp Cypress, however the swamp land is not described at all nor is it identified as a LR, so consequently the LIA fails to address any potential adverse impacts upon them and any necessary mitigation measures with consequential failure to identify and address the potential risk to the critically endangered Chinese Swamp Cypress.</p> <p>It is reasonable to expect that the PDA contains a large volume of topsoil which exists in varying depths according to the location. The LIA fails to identify the existing topsoil as a landscape resource and consequently fails to address any potential adverse impacts upon it and any necessary mitigation measures to protect and preserve it.</p> <p>The LIA fails to identify the PDA’s effect on micro-climate (within either North District or Northern Metropolis) as a landscape resource and consequently fails to address any potential adverse impacts on climate</p>



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N15	<p>Review of the Planning and Development Control Framework</p> <p>5.1 Plans or planning studies such as development statements, outline development plans, outline zoning plans, layout plans or planning briefs, and lease conditions may contain guidelines and control on urban design concept, building height profile, designated view corridors, specific design elements including areas of high landscape value, coastal protection areas, landmarks and monuments, special design areas and open space network; and other design specifications that may affect the architectural form of the project. A review of these documents shall provide an insight to the future outlook of the area affected and the ways the project can fit into the wider environment.</p>	EIAO TM Annex 18 Section 5		No		<p>caused by changes to the landscape within the PDA, and any potential mitigation measures.</p> <p>There is no mention of any cultural landscape features, landscape history or settlement aspects (including <i>fung shui</i> significance) regarding the PDA or study area taken into account despite the long history of the area in North District. The HKGC FGC community’s perception of / on this landscape has not been taken into account.</p> <p>The Landscape Baseline Survey is ambiguous and inaccurate, because the baseline studies failed to identify the uniqueness of the existing sensitive landscape character of FGC – the baseline landscape sensitivities used in the assessment are not consistent throughout the LVIA, as well as the assessment of the maturity, regional importance and rarity, leading to grossly inaccurate (understated) adverse impact significance predictions. The description of LR2 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct. The maturity of LR2 has been wrongly assessed as ‘Young’ as well as the regional importance wrongly assessed as ‘Medium’, when this significant LR has been in existence for over 110 years during the course / over the development of the Old Course’s very long history. It should be classified as being of National importance being the oldest continuously managed and maintained golf course recreational grassland in all of China and probably Asia. There is no mention of its special integrated relationship with / supportive role to the adjacent woodland and tree roots allowed to freely stretch underneath the grassland areas with no restrictions.</p> <p>The description of LCA1 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct.</p> <p>The LVIA is based on incorrect assumptions and is not supported by adequate data and evidence.</p> <p>The LVIA fails to mention or consider the Government’s plan (as announced in the Chief Executive’s Policy Address in October 2021) for the Northern Metropolis in the Review of Planning and Development Control Framework, undertakes no review of it, hence there is no omission with consequential adverse impact on the subsequent assessment.</p> <p>The LVIA failed to make reference to relevant important published papers on scientific research previously undertaken at the FGC including the papers on Legacy Effect of Trees in the Heritage Landscape of a peri-urban golf course, Cooling Effects in a Golf Course and Heritage Trees in FGC by Prof. Jim et al etc.</p> <p>There is no mention of surface temperatures or cooling effects in the LVIA. Reference has not been made to the highly beneficial cooling effects of the vegetation located at the FGC to the local community. Prof Jim’s 2020 Heritage Tree Reports further emphasise the surface temperatures of the foliage being a lot lower than that of the hard asphalt road / carpark surfaces.</p> <p>The Landscape Baseline Survey is ambiguous and inaccurate, because the baseline studies failed to identify the uniqueness of the existing sensitive landscape character of FGC – the baseline landscape sensitivities used in</p>



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N16	<p>Landscape Impact Assessment Study</p> <p>6.1 Landscape impact assessment shall assess :</p> <ul style="list-style-type: none"> <li>• direct impacts upon specific landscape elements;</li> <li>• more subtle effects upon the overall pattern of landscape elements that give rise to landscape character, and local and regional distinctiveness;</li> <li>• impacts upon acknowledged special interests or values such as areas of high landform with special landscape significance.</li> </ul>	EIAO TM Annex 18 Section 6		No		<p>the assessment are not consistent throughout the LVIA, as well as the assessment of the maturity, regional importance and rarity, leading to grossly inaccurate (understated) adverse impact significance predictions. The description of LR2 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct. The maturity of LR2 has been wrongly assessed as ‘Young’ as well as the regional importance wrongly assessed as ‘Medium’, when this significant LR has been in existence for over 110 years during the course / over the development of the Old Course’s very long history. It should be classified as being of National importance being the oldest continuously managed and maintained golf course recreational grassland in all of China and probably Asia. There is no mention of its special integrated relationship with / supportive role to the adjacent woodland and tree roots allowed to freely stretch underneath the grassland areas with no restrictions. The description of LCA1 is inaccurate and assessment is incomplete, therefore the resulting impact significance is not correct.</p> <p>The LVIA is based on incorrect assumptions, does not provide sufficient details and is not supported by adequate data and evidence. The LIA fails to identify the distinctiveness / uniqueness of the landscape character of FGC – being the only example of an inland golf course within lowland secondary forest and as such is indisputably unique both locally and in Hong Kong. The failure to identify this indisputable fact in the LVIA is a gross oversight / omission.</p>
N17	<p>Visual Impact Assessment Study</p> <p>7.2 In assessing visual impacts, it is important to cover all possible viewpoints. If this is not practicable, key viewpoints shall be selected on major routes e.g. roads, walkways, footpaths and hiking tracks; and at activity nodes e.g. residential areas, important public open spaces and landmarks etc. The location of these viewpoints shall be typical. It is also important to note that FGC car park which is a potential development site is located only approximately 80 m from the Grade II listed Clubhouse. In addition, the PDA EIA’s Cultural Heritage/ Built Heritage Impact Assessment must investigate the potential impact of the PDA on the environs and context which comprise part of the grade listing by AMO of the Clubhouse. Significant deterioration of the environs will undermine the cultural heritage importance and character of the Clubhouse detrimentally. Further the EIAO TM Annex 18 Section 7.2 mentions that the LVIA must consider viewpoints from the Grade II listed Clubhouse and also from the Grade I and Grade III listed buildings of FGC to ensure the acceptability of the proposed LVIA of the PDA development.</p>	EIAO TM Annex 18 Section 7.2 and EIASB Cultural Heritage	The LVIA must accurately consider viewpoints from the Grade II listed Clubhouse and the Grade I and Grade III listed buildings of FGC.	No		<p>The LVIA does not provide sufficient details. The Hong Kong Golf Club is one VSR (21) represented by VP10 FGC, however there are no separate assessments for the grade 1, 2, 3 listed buildings within the FGC.</p>
N18	<p>Mitigation Measures</p> <p>8.1 Mitigation is not only concerned with damage reduction but shall include consideration of potential landscape visual enhancement. Wherever possible design that would enhance the landscape and visual quality shall be adopted.</p> <p>8.2 Alternative design that would avoid or reduce the identified impacts on landscape, or that would make the project visually compatible with the</p>	EIAO TM Annex 18 Section 8		No		<p>The LVIA does not provide sufficient details. There are no alternative locations, layout, designs, built-form or construction method that will avoid or reduce the identified landscape and visual impacts provided.</p>



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	<p>setting shall be thoroughly examined before adopting other mitigation or compensatory measures to alleviate the impacts.</p> <p>8.3 Possible measures that may mitigate or compensate the impacts include:</p> <ul style="list-style-type: none"> <li>• remedial</li> <li>• compensatory</li> </ul> <p>8.4 A practical programme and funding proposal for the implementation of the recommended mitigation measures shall be worked out. These shall be integrated with the overall development programme and costing of the whole project.</p>					
N19	<p>Presentation Methods</p> <p>9.1 To illustrate the landscape and visual impacts of a project, as well as effects of the mitigation measures, choice of appropriate presentation methods is important. These methods include perspective drawings, plans and section/elevation diagrams, photographs on scaled physical models, photo-retouching and photomontage. These methods shall be used extensively to facilitate communication among the concerned parties.</p> <p>9.2 The technical details of preparing the illustrations shall be recorded. To facilitate verification of the accuracy, the Authority will reserve the right to examine the full details</p>	EIAO TM Annex 18 Section 9		No		<p>The LVIA does not provide sufficient details.</p> <p>No elevations are provided at all and no meaningful cross section drawings are included to clearly convey the findings of the LVIA or the proposed Mitigation Measures within the PDA, especially to show the landscape impact on the trees to be retained in-situ within Sub-Area 1.</p> <p>The information portrayed in general is very rudimentary and insufficient to be able to interpret, analyse and interrogate the findings of the LVIA, especially the feasibility / practicality of the proposed retention of existing trees within Sub-Area 1 as well as the tree transplanting proposals, which appear not feasible according to industry standards.</p> <p>There is no evidence / details presented to support the practicality or feasibility for the retention of 11 TPIs located within the proposed housing development in Sub-Area 1.</p>
N20	<p>EIA is able to fully address the consequence of the development which might potentially break the 'essential, finite and irreplaceable link between the past and the future' stated in EIAO TM Annex 10 Section 2.1a.</p> <p>a. The general presumption in favour of the protection and conservation of all sites of cultural heritage because they provide an essential, finite and irreplaceable link between the past and the future and are points of reference and identity for culture and tradition.</p>	EIAO TM Annex 10 Section 2.1a. Cultural Heritage	The consequence of the development is accurately addressed.	No		<p>The LVIA does not provide sufficient details.</p> <p>The LVIA contains no mention or description on the topography or unique landform within the study area nor is it identified as / within any LRs, therefore there is no assessment of the residual impacts on the topography within the PDA at all.</p> <p>The consequence of the development and the residual impacts are not accurately or fully addressed.</p> <p>The LVIA failed to correctly identify the residual adverse impacts of Substantial Significance on LR1.2, LR2 (which together cover ~67% of Sub-Area 1) and LCA1 (which covers 100% of Sub-Area 1).</p>
N21	<p>EIA / LVIA assessments, must conduct an in-depth assessment to prove that there are mitigation measures that would address, as mentioned in EIAO TM Annex 2 Section 3, the likely environmental impacts arising from the changes. If this cannot be proven the EIAO TM provides recourse of the precautionary principle and regarding a "no-go" alternative and abandoning the project as demanded under EIAO TM Annex 16 Section 5.4.4 while "no-go" alternatives may be the realistic option under EIAO Annex 16 Section 5.4.1(a).</p>	EIAO TM Annex 2 Section 3 EIAO TM Annex 16 Section 5.4.4 EIAO Annex 16 Section 5.4.1(a).	The mitigation measures fully mitigate / address the overall fundamental landscape and visual impacts to the unique existing heritage landscape.	No	Mitigation Measures Table 11.10	<p>The LVIA is based on incorrect assumptions.</p> <p>There is no in-depth assessment to prove that there are mitigation measures that would address the likely environmental impacts arising from the changes. In the EIA LVIA Mitigation Measures Table 11.10 under both the 'Management Agency' and 'Maintenance Agency' for the Operation Phase – OM1 (Landscape Treatment in Sub-areas 2-4) and OM4 (Compensatory Tree Planting):</p> <p><i>Proposed usage of Sub-areas 2-4 has not been confirmed yet, the proposed maintenance party is subject to further confirmation.</i></p> <p>So therefore the 2 MMs (OM1 and OM4) must both be discounted and not included in the LVIA as per the clause in the EIAO GN 8/2010 cl 3.8 (c).</p>
N22	<p>1. d. The impact is unacceptable if the adverse effects are considered too excessive and are unable to mitigate practically;</p>	EIAO TM Annex 10 Section 1.d	Clearly state this unique heritage landscape is one of a kind in HK, FGC cannot	No		<p>The LVIA is based on incorrect assumptions.</p> <p>There is no overall conclusion for the overall residual landscape impact of the project with reference to the five criteria listed in Annex 10 of the</p>



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	<p>Fundamental change in visual character which could generate substantial landscape and visual impact during both construction and operational phases before mitigation. However, based on HKSARG’s 2005 Landscape Value Mapping Study, FGC has been classified as rural fringe (inland) with significant tree cover of good condition and has been classified as a tranquil landscape of high value (LVMS 2005), that is material and significant to Hong Kong. Existing landscape characters in the Old Course are irreplaceable as there are no other similar landscapes in Hong Kong outside the FGC.</p> <p>Secondary Lowland Woodland in the PDA and adjoining area is highly sensitive to development assess the landscape, visual and ecological impacts to the large-scale secondary lowland woodland which is unique to Hong Kong.</p>		<p>easily be relocated or replaced elsewhere at another location, whereas new housing development could be place elsewhere.</p>			<p>EIAO TM in the LVIA Section 11.14 – The correct objective conclusion of the LIA should be that the landscape impacts are ‘Unacceptable’ in accordance with the five criteria in EIAO TM Annex 10. The LVIA failed to correctly identify the residual adverse impacts of Substantial Significance on LR1.2, LR2 (which together cover ~67% of Sub-Area 1) and LCA1 (which covers 100% of Sub-Area 1). There is a lack of any evidentiary support for the effectiveness of the proposed mitigation measures. The proposed mitigation measures including preserving / retaining existing trees in-situ in Sub-Area 1 and transplanting TPIs to Sub-Area 3 are not practical / viable to implement as there has been no apparent detailed consideration on the proposed housing development platform levels against the existing levels of the existing trees or the route to the receptor site for the trees to be transplanted (travelling through undulating land with change in elevation and dense existing vegetation which may be impacted) – no description or details are provided. There is also no apparent rationale given for felling some trees while retaining other adjacent trees. There is no identification of any Tree Protection Areas on any plan in the LVIA to protect the trees during the Site formation and Building construction.</p>
N23	<p>LVIA shall be directed towards predicting and judging of the magnitude and significance of the effects that new development/redevelopment may have on landscape resources/characters and visual amenities.</p>	<p>EIAO GN No. 8/2010 2.1</p>	<p>Justified predictions of the magnitude of change and impact significance of the effects that the new development will have on the sensitive receivers.</p>	<p>No</p>		<p>The LVIA is based on incorrect assumptions and is not supported by adequate data and evidence. The Landscape Baseline Survey is ambiguous and inaccurate, because the baseline studies failed to identify the uniqueness of the existing sensitive landscape character of FGC – the baseline landscape sensitivities used in the assessment are not consistent throughout the LVIA, as well as the assessment of the maturity, regional importance and rarity, leading to grossly inaccurate (understated) adverse impact significance predictions. The description of LR2 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct. The maturity of LR2 has been wrongly assessed as ‘Young’ as well as the regional importance wrongly assessed as ‘Medium’, when this significant LR has been in existence for over 110 years during the course / over the development of the Old Course’s very long history. It should be classified as being of National importance being the oldest continuously managed and maintained golf course recreational grassland in all of China and probably Asia. There is no mention of its special integrated relationship with / supportive role to the adjacent woodland and tree roots allowed to freely stretch underneath the grassland areas with no restrictions. The description of LCA1 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct. There are also inconsistencies in the prediction on the magnitude of change throughout the LVIA. The area of direct physical impact due to the proposed housing development and mitigation measure areas to some LRs are underestimated (e.g. LRs 1.1 and 1.2) in Section 11.9.1. There are errors in the measurement of the affected areas of LRs, LR1.1 and LR1.2 mapped on Figure 11.2. Para. 11.9.1.2 states, for LR1.1, ‘Total area affected is approximately 0.13 ha’ whereas 0.15 ha is measured on Figure</p>



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N24	LVIA should be an independent and informed professional assessment of the impacts from a DP. It should be based on the reasonable case scenario and/or where there is uncertainty the worst case scenario. Both positive and negative landscape and visual impacts should be given due consideration in the process.	EIAO GN No. 8/2010 2.2	Start with an accurate existing landscape and visual baseline review.	No		11.2. Similarly, para 11.9.1.3 states, for LR1.2, 'Approximately 8% (2.82ha) will be lost due to site formation and construction of the proposed public housing development and infrastructure works' whereas 3.09 ha is measured on Figure 11.2.  The LVIA is based on incorrect assumptions. The existing landscape and visual baseline review is not thorough and accurately described. The LVIA failed to make reference to relevant important published papers on scientific research previously undertaken at the FGC including the papers on Legacy Effect of Trees in the Heritage Landscape of a peri-urban golf course, Cooling Effects in a Golf Course and Heritage Trees in FGC by Prof. Jim et al etc. The LVIA does not identify the uniqueness of the landscape character of the FGC.
N25	It is recognised that, unlike other impact assessments, LVIA relies more upon experienced professional judgment and less on quantitative measurements. Hence, it is important to adopt a structured and systematic approach in LVIA to facilitate the public to understand the potential landscape and visual impacts arising from the DP.	EIAO GN No. 8/2010 2.3	A logically structured and methodical methodology for assessment used in the LVIA.	No	Section 11.5 Assessment Methodology	The LVIA is based on incorrect assumptions and does not provide sufficient details. The baseline quantitative measurements / data are not correct and have numerous significant errors in it leading to grossly under-valued and under-estimated potential impacts, flawed and erroneous conclusions.
N26	In assessing the significance of impacts in LVIA, it is necessary to differentiate between judgment on the significance of change, which involves a greater degree of subjective opinion, and measurement of magnitude of change, which is normally a more objective and quantifiable task. Assessment should always be supported by quantified data, clear evidence, logical deduction, reasoned argument and informed judgment.	EIAO GN No. 8/2010 2.4		No	Table 11.8	The LVIA is based on incorrect assumptions. The assessment on the magnitude of change for the affected LRs and LCAs are not quantified by accurate field data, reasoned argument and informed judgment. There are also inconsistencies in the prediction on the magnitude of change throughout the LVIA.
N27	Based on the best information available at the time of the assessment, LVIA might report the main concerns on landscape and visual issues raised by interested parties (Public comment from consultation forum (if any/applicable as stated in para. 3.1(b))).	EIAO GN No. 8/2010 2.5	Response to the public comments directly addresses the concerns.	No	Section 2.5 Table 2.1	The LVIA does not provide sufficient details. There is no evidence to suggest that they have resolved the public's concerns regarding the significant number of potential OVTs located within the PDA – the feasibility of retaining in-situ or transplanting the potential OVTs has not been fully investigated. The Tree Schedule has two columns identifying the "Maintenance Department to provide comments to this Tree Survey Report" – "Before" and "After". FGC is identified as the Maintenance Department to give comment "Before" however FGC has not been consulted on the Tree Survey Report nor invited to comment on it. The importance of affected LRs and LCAs are under-evaluated in the LVIA and the under-estimated residual impacts due to the inadequate tree and landscape surveys conducted and baseline study are not remotely thorough enough for an EIA.
N28	Information in the LVIA should be consistent with that used for other impact assessments covered by the same EIA report such as: <ul style="list-style-type: none"> <li>• noise assessment in respect of the location, extent and size of noise barriers/enclosures,</li> <li>• ecological impact assessment in respect of the quantification of landscape features and the potential impacts on them, and</li> <li>• assessment of waste management implications, e.g. in respect of potential loss of topsoil, vegetation removal and other landscape resources.</li> </ul>	EIAO GN No. 8/2010 2.6		No	Noise Impact Section 4, Ecologia Section 9, Waste Management Section 7.	The LVIA does not provide sufficient details. In the Ecological Impact Assessment (Section 9 of the EIA Report), an area of 'swampy woodland' is identified on Figure 9.3a and Figure 9.4 at the location of the Chinese Swamp Cypress in Sub-Area 4, however the swamp land is not mentioned / described at all nor is it identified as a LR in the LVIA, so consequently the LVIA fails to address any potential adverse impacts upon this swamp land area. The area of 'compensation woodland planting' in the Ecological Impact Assessment stated in Section 9.8.3 and shown on Figure 9.8 is not shown



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N29	For easy understanding, annotated illustrative materials such as computer-generated photomontages, oblique aerial photographs, photographs, plans, elevations and section drawings should be extensively used to convey the findings of LVIA to the readers. Descriptive text should provide a concise and reasoned argument.	EIAO GN No. 8/2010 2.7		No		<p>on any of the plans / figures in the LVIA – this area appears to be a lot larger than the compensatory tree planting areas and the receptor site for transplanted trees.</p> <p>It is reasonable to expect that the PDA contains a large volume of topsoil which exists in varying depths according to the location. The LIA fails to identify the existing topsoil as a landscape resource and consequently fails to address any potential adverse impacts upon it and any necessary mitigation measures to protect and preserve it.</p> <p>The LVIA does not provide sufficient details.</p> <p>There is in general an inadequate amount of information provided on the proposed housing development – on the design and construction details etc.</p> <p>There is a lack of any evidentiary support for the effectiveness of the proposed mitigation measures.</p> <p>No elevations are provided at all and no meaningful cross section drawings are included to clearly convey the findings of the LVIA or the proposed Mitigation Measures within the PDA, especially to show the landscape impact on the trees to be retained in-situ within Sub-Area 1.</p> <p>The information portrayed in general is very rudimentary and insufficient to be able to interpret, analyse and interrogate the findings of the LVIA, especially the feasibility / practicality of the proposed retention of existing trees within Sub-Area 1 as well as the tree transplanting proposals, which appear not feasible according to industry standards.</p> <p>There is no evidence / details presented to support the practicality or feasibility for the retention of 11 TPLs located within the proposed housing development in Sub-Area 1.</p> <p>Table 11.7 lists "C2 – Site Formation Works and Excavation Works" as a potential source of impact however there is no elaboration of the methodologies to be adopted that enables proper assessment of the potential impacts on the existing landscape resources in Sub-Area 1, especially upon the trees, and no evidence is presented to explain how it is possible to retain so many trees as proposed in the EIA. The text fails to describe any potential impacts on existing topography, hydrology, soils, or existing trees due to impacts on the tree roots and tree canopies.</p> <p>The LVIA does not provide sufficient details.</p> <p>The proposed mitigation measure provided of transplanting TPLs is not practical and in some cases not implementable due to the final receptor site location whereby the route for the trees to reach the location means travelling through narrow areas of extensive existing trees as well as the undulating terrain. Retaining trees in-situ within the proposed housing development platforms which are in some cases a lot lower or higher than the existing ground level of the trees.</p> <p>There is no statement in the LVIA or indication at the top of the tree schedule to confirm that the Tree Survey was undertaken by a Certified Arborist.</p> <p>The LVIA does not provide sufficient details.</p> <p>No alternative layout option(s) / design(s) have been provided.</p> <p>No detailed explanation / rationale is provided for the 'various factors' on why Option 2 is the recommended option.</p>
N30	As LVIA involves appraisal of landscape and visual resources, professional judgment of impact significance and formulation of sensible mitigation measures, it is therefore recommended that professional landscape architects, planners and/or urban designers, or other competent persons be appointed to carry out the full scope of LVIA as identified in the study brief.	EIAO GN No. 8/2010 2.8	Sensible mitigation measures, especially for the significant numbers of potential OVTs identified.	No	MM Figures 11.9.1 11.9.2	
N31	The background of the DP should include a broad description of the alternative option(s)/alignment(s)/design(s) which have been examined in related studies if such information is not included in the EIA report. The potential landscape and visual impacts of all options should be broadly	EIAO GN No. 8/2010 3.1(a)		No	Section 2.6 and 2.7	



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N32	<p>stated and the rationale for the recommended option should be clearly explained.</p> <p>Comments collected from previous consultation, if any, with relevant advisory bodies including those in section 2 above and the general public on landscape and visual aspects of the project should be summarised together with a discussion on how their comments have been addressed in the report. If there is no previous consultation or no comment has been received on landscape and visual aspect, this should be clearly stated.</p>	EIAO GN No. 8/2010 3.1(b)		No	Table 2.1 Key Comments Received from Public and Green Groups	<p>The LVIA does not provide sufficient details.</p> <p>Comments collected from previous consultation regarding concerns for OVTs included but no specific discussion on how the comments have been addressed in the report.</p> <p>Landscape Impact Assessment stated that “No registered “Old and Valuable Trees” (OVT) were recorded during the tree survey.”</p> <p>The Tree Schedule has two columns identifying the “Maintenance Department to provide comments to this Tree Survey Report” – “Before” and “After”. FGC is identified as the Maintenance Department to give comment “Before” however FGC has not been consulted on the Tree Survey Report nor invited to comment on it.</p>
N33	<p>The environmental, economic, social and other benefits/disbenefits of the DP and the consequences of not proceeding with the DP should also be briefly mentioned.</p>	EIAO GN No. 8/2010 3.1(c)		No	Section 1.6	<p>The LVIA does not provide sufficient details.</p> <p>Project benefits briefly mentioned but no details on any disbenefits of the proposed housing development are provided including the significant residual impacts as a result of the project.</p> <p>The consequences of all the non-compliant practice, numerous omissions and factual errors in the LVIA are fundamental because the numerous errors will deprive the decision makers of the materials required to make well-informed and sound decisions, and condemns them to making decisions based on incorrect and unreliable or partial information and therefore contributing to wrong decision making.</p>
N34	<p>All works that may give rise to landscape and visual impacts should be clearly annotated on plans such as:</p> <ul style="list-style-type: none"> <li>• location plan including phasing boundary where applicable,</li> <li>• details of all structures/buildings (in terms of length, width and height in mPD),</li> <li>• layouts, plans, sections and elevations,</li> <li>• materials of finishes (e.g. reflective or non-reflective materials) and colours of external appearance, and</li> <li>• extent of temporary works area.</li> </ul>	EIAO GN No. 8/2010 3.2(a)		No	Figures 11.9.1, 11.9.2	<p>The LVIA does not provide sufficient details.</p> <p>There is in general an inadequate amount of information provided on the proposed housing development – on the design and construction details etc.</p> <p>There is a lack of any evidentiary support for the effectiveness of the proposed mitigation measures.</p> <p>No elevations are provided at all and no meaningful cross section drawings are included to clearly convey the findings of the LVIA or the proposed Mitigation Measures within the PDA, especially to show the landscape impact on the trees to be retained in-situ within Sub-Area 1.</p> <p>The information portrayed in general is very rudimentary and insufficient to be able to interpret, analyse and interrogate the findings of the LVIA, especially the feasibility / practicality of the proposed retention of existing trees within Sub-Area 1 as well as the tree transplanting proposals, which appear not feasible according to industry standards.</p> <p>There is no evidence / details presented to support the practicality or feasibility for the retention of 11 TPIs located within the proposed housing development in Sub-Area 1.</p> <p>Table 11.7 lists “C2 – Site Formation Works and Excavation Works” as a potential source of impact however there is no elaboration of the methodologies to be adopted that enables proper assessment of the potential impacts on the existing landscape resources in Sub-Area 1, especially upon the trees, and no evidence is presented to explain how it is possible to retain so many trees as proposed in the EIA. The text fails to describe any potential impacts on existing trees due to impacts on the tree roots and tree canopies.</p>



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N35	<p>For construction phase, some impacts may be temporary in nature, but can be significant if left unattended. The assessment should include, where applicable, consideration of all permanent works and also temporary works undertaken during the construction stage. Construction works may include the following:</p> <ul style="list-style-type: none"> <li>• reclamation (temporary and/or permanent),</li> <li>• site formation including slope works,</li> <li>• temporary works including vegetation clearance,</li> <li>• haul road,</li> <li>• borrow areas, and</li> <li>• dumping grounds.</li> </ul>	EIAO GN No. 8/2010 3.2(b)		No		<p>There are no visual diagrams, sections or elevation to demonstrate how the '...mature trees proposed to be preserved, tree islands should be properly formed...' mentioned in para. 11.6.3.6.</p> <p>The extent of the temporary works area is not provided nor is any potential temporary / permanent impacts indicated.</p> <p>The LVIA does not provide sufficient details.</p> <p>Table 11.7 lists "C2 – Site Formation Works and Excavation Works" as a potential source of impact however there is no elaboration of the methodologies to be adopted that enables proper assessment of the potential impacts on the existing LRs in Sub-Area 1, especially upon the trees, and no evidence is presented to explain how it is possible to retain so many trees as proposed in the EIA.</p> <p>There is no presentation of a chosen construction methodology in order to explain sources of construction impacts.</p> <p>The extent of site formation including the details of the extent of any slope works for the development platforms is not indicated on the LVIA plans. What the potential temporary / permanent impacts are during the construction phase are not fully described.</p>
N36	<p>For operation phase, assessment should include, where applicable, consideration of all constructed works at commencement of operation of the project, particularly the following features, which are also prominent in the landscape and visual context:</p> <ul style="list-style-type: none"> <li>• viaducts,</li> <li>• retaining structures,</li> <li>• vent shafts,</li> <li>• tunnel portals,</li> <li>• cutting and filling,</li> <li>• embankments,</li> <li>• any mitigation measures such as noise barriers/enclosures, and</li> <li>• ancillary buildings.</li> </ul>	EIAO GN No. 8/2010 3.2(c)		No		<p>The LVIA does not provide sufficient details.</p> <p>There is no mention or assessment of any proposed retaining structures, cutting and filling, embankments or noise barriers/enclosures for the operation phase.</p> <p>'...ancillary facilities with minimal new structure/change to existing site conditions, serving the needs of the general public.'</p> <p>However, there is no assessment provided on this ancillary building – only mentions that one tree is affected.</p>
N37	<p>For the Landscape Impact Assessment (LJA), the assessment area should normally include all areas within 500m from the work limit of DP.</p>	EIAO GN No. 8/2010 3.3(a)		No	<p>Figures 11.2 LRs, 11.3 LCAs</p>	<p>The LVIA does not provide sufficient details.</p> <p>The broadbrush / group tree survey fails to cover the entire landscape study area (all areas within 500 metres distance from the boundary of the Project area) – the tree survey area only covers the area within the PDA.</p>
N38	<p>For Visual Impact Assessment (VIA), the assessment area should be up to the visual envelope (zone of visual influence) which is generally the viewshed formed by natural/man-made features such as ridge/line or building blocks. The defined visual envelope must be shown on plan.</p>	EIAO GN No. 8/2010 3.3(b)		No	<p>Figures 11.4 Visual Envelope, 11.5 VSRs, 11.6 VPs</p>	<p>The LVIA does not provide sufficient details.</p> <p>There are no detailed descriptions, evaluation or assessment of the existing visual character, existing conditions or the heritage setting reported / illustrated in the existing baseline conditions.</p> <p>Only the Visual Envelope is shown / defined on a plan.</p>
N39	<p>The visual envelope may contain areas, which are fully visible, partly visible and non-visible from the DP. In order to define the visual envelope, cross-sectional drawings shall be prepared to demonstrate the various degree of visibility in the visual envelope. Such information is generally not required to be included in the LVIA but should be kept by the applicant for verification upon request by Planning Department.</p>	EIAO GN No. 8/2010 3.3(c)		No		<p>The LVIA does not provide sufficient details.</p> <p>No cross-sectional drawings or other methods are provided to demonstrate the various degree of visibility in the visual envelope.</p>

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N40	Baseline conditions are not static and may change over time according to the planning framework. Hence, it is necessary for the Baseline Study to capture the existing condition as well as the future outlook of the assessment area.	EIAO GN No. 8/2010 3.4(a)		No	Section 11.3 Review of Planning and Development Control Framework	The LVIA does not provide sufficient details. The LVIA fails to mention or consider the Government's plan (as announced in the Chief Executive's Policy Address in October 2021) for the Northern Metropolis in the Review of Planning and Development Control Framework, undertakes no review of it, hence there is no description of the implications for the study area which is a significant omission with consequential adverse impact on the subsequent assessment. The LVIA failed to make reference to relevant important published papers on scientific research previously undertaken at the FGC including the papers on Legacy Effect of Trees in the Heritage Landscape of a peri-urban golf course, Cooling Effects in a Golf Course and Heritage Trees in FGC by Prof. Jim et al etc.
N41	The Baseline Study should include an appraisal of the landscape and visual resources and character of the assessment area focusing particularly on the sensitivity of the landscape and visual system and their ability to accommodate change.	EIAO GN No. 8/2010 3.4(b)		No		The LVIA is based on incorrect assumptions, does not provide sufficient details and is not supported by adequate data and evidence. The Landscape Baseline Survey is ambiguous and inaccurate, because the baseline studies failed to identify the uniqueness of the existing sensitive landscape character of FGC – the baseline landscape sensitivities used in the assessment are not consistent throughout the LVIA, as well as the assessment of the maturity, regional importance and rarity, leading to grossly inaccurate (understated) adverse impact significance predictions. The description of LR2 is inaccurate and assessment is incomplete, therefore the resulting impact significance is not correct. The maturity of LR2 has been wrongly assessed as 'Young' as well as the regional importance wrongly assessed as 'Medium', when this significant LR has been in existence for over 110 years during the course / over the development of the Old Course's very long history. It should be classified as being of National importance being the oldest continuously managed and maintained golf course recreational grassland in all of China and probably Asia. There is no mention of its special integrated relationship with / supportive role to the adjacent woodland and tree roots allowed to freely stretch underneath the grassland areas with no restrictions. The description of LCA1 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct.
N42	Landscape resources should be quantified, with respect to special landscape features. Landscape character of the project area and its relationship with the adjacent areas should be addressed. Landscape character areas (LCAs) and key landscape elements within the assessment area should be identified and annotated on plan. Some projects may require a broad tree and/or vegetation survey to be carried out.	EIAO GN No. 8/2010 3.4(c)		No	Figure 11.2 LRs	The LVIA is based on incorrect assumptions, does not provide sufficient details and is not supported by adequate data and evidence. The area of direct physical impact due to the proposed housing development and mitigation measure areas to some LRs are underestimated (e.g. LRs 1.1 and 1.2) in Section 11.9.1. There are errors in the measurement of the affected areas of LRs, LR1.1 and LR1.2 mapped on Figure 11.2. Para. 11.9.1.2 states, for LR1.1, 'Total area affected is approximately 0.13 ha' whereas 0.15 ha is measured on Figure 11.2. Similarly, para 11.9.1.3 states, for LR1.2, 'Approximately 8% (2.82ha) will be lost due to site formation and construction works' whereas 3.09 ha is measured on Figure 11.2. TPIs are indicated on the LR plans.



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N43	A broad-brush tree/vegetation survey should be prepared as an integral part of the landscape baseline study. Unless specified elsewhere in the study brief, a detailed tree survey to fulfill the requirements as stipulated in the Environment, Transport and Works Bureau Technical Circular (Works) No. 3/2006, or Lands Administration Office, Lands Department Practice Note No. 7/2007 for tree felling application is usually not necessary for the preparation of LIA.	EIAO GN No. 8/2010 3.4(d)		No	Section 11.6.3 Tree Survey Appendix 11.1 Tree Survey Plan Appendix 11.2.2 Tree Survey Schedule	The key landscape elements within the assessment area should be identified and annotated on plan. The special landscape features are not fully described.  The LVIA does not provide sufficient details. The broadbrush / group tree survey fails to cover the entire landscape study area (all areas within 500 metres distance from the boundary of the Project area) – the tree survey area only covers the area within the PDA.
N44	Besides vegetation, other landscape resources such as topographical or geological features, reservoirs, streams and other water bodies, etc should be investigated as part of the baseline study.	EIAO GN No. 8/2010 3.4(e)		No		The LVIA is based on incorrect assumptions, does not provide sufficient details and is not supported by adequate data and evidence. The LVIA fails to mention the distinctive landform and consider the significant topographical undulations and elevation changes within the PDA, which are a fundamental and critical component of the existing uniqueness of the landscape character at FGC. Section 11.4.1 describes the PDA as ‘a piece of relatively flat land with general gradients of 21.8mPD at the northern and 23.3mPD at the southern area intertwined with random pockets of small hilly areas ranged from 29mPD to 39mPD at their upper levels.’ Mostly vegetation within LRs are listed, no topographical or geological or hydrological features within LRs are mentioned in the landscape baseline study and therefore consequently the landscape assessment fails to address any adverse impacts upon them. The LIA is intentionally fragmented to minimise the value, facts, significance in/of its context in the baseline study as well as for the impact assessment and conclusion. The broadbrush / group tree survey fails to cover the entire landscape study area (all areas within 500 metres distance from the boundary of the Project area) – the tree survey area only covers the area within the PDA. The PDA being split into four sub-areas distorts the value of the TPis located within Sub-Area 1 vs the TPis located in Sub-Areas 2-4. The area of direct physical impact due to the proposed housing development and mitigation measure areas to some LRs are underestimated (e.g. LRs 1.1 and 1.2) in Section 11.9.1. There are errors in the measurement of the affected areas of LRs, LR1.1 and LR1.2 mapped on Figure 11.2. Para. 11.9.1.2 states, for LR1.1, ‘Total area affected is approximately 0.13 ha’ whereas 0.15 ha is measured on Figure 11.2. Similarly, para 11.9.1.3 states, for LR1.2, ‘Approximately 8% (2.82ha) will be lost due to site formation and construction of the proposed public housing development and infrastructure works’ whereas 3.09 ha is measured on Figure 11.2.

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N45	Visual resources such as key views, viewing corridors/viewing directions, harbour and ridgelines, and visual characters should also be identified on plans.	EIAO GN No. 8/2010 3.4(f)		No	Section 11.4 Section 11.7.1.4	There are description errors and assessment of LR2 Grassland is not accurate as it should be recreational grassland, hence the impact assessment is under-estimated based on incorrect assumptions in the landscape baseline study. The ‘Scale of LR/LCA Affected’ of LR2 is wrongly described as ‘Small’. On the removal of parts / sections of LR2 means a loss of function that the wider impact on the Old Course at FGC can no longer function as a 18 hole golf course. The LVIA does not provide sufficient details. There are no detailed descriptions, evaluation or assessment of the existing visual character, existing conditions or the heritage setting reported / illustrated in the existing baseline conditions. There are no plans / images / photos / any visual aids that identify and show the existing visual character of the FGC or the existing area in which the proposed housing development area in Sub-Area 1 is located.
N46	Landscape and visually sensitive receivers (SRs) should be identified. SRs with similar landscape and visual sensitivity can be grouped with their locations clearly shown on plans.	EIAO GN No. 8/2010 3.4(g)		No	Figures 11.5, 11.6	The LVIA is based on incorrect assumptions and does not provide sufficient details. Some landscape resources have not been identified / mapped with their locations clearly shown on any plans and so are missing along with their sensitivity. The PDA (including Sub-Area 1) contains significant hydrology / water features including streams, ponds, and an area of low-lying swampy ground in Sub-Area 4 that is critical to the survival of the community of critically endangered Chinese Swamp Cypress, however the swamp land is not described at all nor is it identified as a LR, so consequently the LIA fails to address any potential adverse impacts upon them and any necessary mitigation measures with consequential failure to identify and address the potential risk to the critically endangered Chinese Swamp Cypress.
N47	Annotated oblique and aerial photographs, photographs taken at key viewpoints and relevant maps/plans with short notes should be used to illustrate the existing baseline conditions.	EIAO GN No. 8/2010 3.4(h)		No	Figure 11.4	The LVIA does not provide sufficient details. There are no detailed descriptions, evaluation or assessment of the existing visual character, existing conditions or the heritage setting reported / illustrated in the existing baseline conditions. There are no plans / images / photos / any visual aids that identify and show the existing visual character of the FGC or the existing area in which the proposed housing development area in Sub-Area 1 is located.
N48	The review should cover information in the statutory plans prepared under the Town Planning Ordinance, and non-statutory plans published by the Planning Department when the EIA report is under public inspection. Planning Department can advise on the updated information in respect of planned use.	EIAO GN No. 8/2010 3.5(a)		No	Section 11.3 Review of Planning and Development Control Framework Section 11.12 Cumulative Impacts	The LVIA does not provide sufficient details. The LVIA fails to mention or consider the Government’s plan (as announced in the Chief Executive’s Policy Address in October 2021) for the Northern Metropolis in the Review of Planning and Development Control Framework, undertakes no review of it, hence there is no description of the implications for the study area which is a significant omission with consequential adverse impact on the subsequent assessment.



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N49	Planned uses shown in plans as described in paragraph 3.5a above which are within the study area should also be taken as SRs.	EIAO GN No. 8/2010 3.5(b)		No	Planned VSRs are included.	The LVIA does not provide sufficient details. The LVIA fails to mention or consider the Government's plan (as announced in the Chief Executive's Policy Address in October 2021) for the Northern Metropolis in the Review of Planning and Development Control Framework, undertakes no review of it, hence there is no description of the implications for the study area which is a significant omission with consequential adverse impact on the subsequent assessment.
N50	For areas zoned under "Undetermined" use or areas of unspecified use in the plans as detailed in paragraph 3.5a above, existing conditions should be based on for identification of SRs.	EIAO GN No. 8/2010 3.5(c)		N.A.		
N51	If plans in paragraph 3.5a above are outdated or unavailable, the LVIA should be based upon existing conditions on site.	EIAO GN No. 8/2010 3.5(d)		N.A.		
N52	Relevant planning/landscape guidelines as recommended in planning studies, planning briefs or planning documents relevant to the assessment area such as landscape/urban design strategies, frameworks and concepts, building height profiles, special design areas, landmarks, designated view corridors, open space networks, landscape links and landscape character types, etc. should also be studied and highlighted.	EIAO GN No. 8/2010 3.5(e)		No		The LVIA is based on incorrect assumptions and does not provide sufficient details. Standards and Guidelines are listed in Section 11.2 but it is questionable if these documents were all used as part of the baseline review study as it appears that the Landscape Value Mapping Study (2006) (LVMS) is listed as a LVIA reference document, however the landscape sensitivity used in the assessment Table 11.11 is not consistent with that identified in the LVMS. The LVIA failed to follow requirements and procedures in accordance with DEVB TC(W) 5/2020 'Registration and Preservation of Old and Valuable Trees' (which is listed in Section 11.2) and consequently failed to identify that the presence of 70 potentially registrable OVTs in Sub-Area 1 may preclude the development of Sub-Area 1 as a Public Housing Development. DEVB TC(W) 5/2020 Paragraph 2 states "OVTs should be given priority protection. Requirements re also stipulated in the Circular for preservation and maintenance of OVTs at different stages of government projects...". Furthermore, paragraph 6 states "It is Government policy to provide priority protection to the OVTs in the Register." Furthermore, paragraph 11 states that "For public works projects requiring tree surveys to be carried out, the responsible project departments should assist to identify potentially registrable trees in the surveys and submit relevant details to the GLTMS for assessment using the nomination form at Appendix C.". Furthermore, paragraph 20 describes what shall be done in the event of the death of an OVT and paragraph 21 states: "Except under the situation as stated in paragraph 20 above, removal of OVTs is prohibited." Thus, removal of living OVTs is prohibited. The LVIA failed to make reference to relevant important published papers on scientific research previously undertaken at the FGC including the papers on Legacy Effect of Trees in the Heritage Landscape of a peri-urban golf course, Cooling Effects in a Golf Course and Heritage Trees in FGC by Prof. Jim et al etc.
N53	Any departure from the published town plans arising from the DPs should be highlighted.	EIAO GN No. 8/2010 3.5(f)		N.A.		

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N54	<p>The study could be presented in a table form to cover:</p> <ul style="list-style-type: none"> <li>• plan title/number,</li> <li>• land use zonings,</li> <li>• approximate area of the land use zones to be affected by the DP,</li> <li>• design and conservation intention, and</li> <li>• future outlook of the area.</li> </ul>	EIAO GN No. 8/2010 3.5(g)		N.A.		
N55	LJA should comprise assessments of the impacts both on landscape resources and landscape character of the area, which is created by the combination of landscape resources and built developments.	EIAO GN No. 8/2010 3.6(a)		No	Section 11.11.1	The LVIA is based on incorrect assumptions and does not provide sufficient details. The LJA does not comprise accurate assessments of the potential impacts and impact significance both on affected LRs and LCA, arisen from the proposed housing development due to the substantively inaccurate and flawed baseline study.
N56	VIA should identify and predict the type and extent of impacts from visual obstruction, glare, changes in visual amenity and compatibility with surroundings.	EIAO GN No. 8/2010 3.6(b)		No	Section 11.11.2 11.12.4	The LVIA does not provide sufficient details. The extent of impacts from the visual obstruction of the proposed housing development is not clearly described / portrayed in the assessment. There are no clear and accurate descriptions / justifications on the compatibility of the proposed housing development for the proposed location in Sub-Area 1. There are no descriptions regarding the changes in visual amenity when viewed from within the FGC (from either east or west of Fan Kam Road) or when viewed from outside the FGC.
N57	The presentation of landscape and visual impacts in construction and operation stages should preferably be in table form covering items as specified in section 3.7 below.	EIAO GN No. 8/2010 3.6(c)		No	Table 11.11	The LVIA does not provide sufficient details. The items specified under EIAO GN No. 8/2010 Section 3.7 are not all covered / detailed in Table 11.11.
N58	Extent of work limits including temporary works areas should be presented on plan. The duration of construction impact should be stated.	EIAO GN No. 8/2010 3.6(d)		No	Timeline in Table 2.5 Section 2.12 Implementation Programme shows construction duration for Sub-Area 1. No duration information provided for Sub-Area 2-4	The LVIA does not provide sufficient details. The extent of temporary works areas / limits are not presented on any plans. The duration of the construction impacts are not clearly stated.
N59	For DPs under Schedule 3 of the EIA Ordinance, the LVIA should include a list of all DPs under Schedule 2 within the assessment area. If possible, it should contain individual LVIA for each DP under Schedule 2 or for each contract, which may consist of a number of DPs under Schedule 2, with a cumulative assessment of the potential landscape and visual	EIAO GN No. 8/2010 3.6(e)		N.A.		



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	impacts from all DPs and non-DPs within the assessment area. This may save the need to carry out further LVIA prior to the application of environmental permit (EP) for the DPs under Schedule 2. However, if detailed information for the DPs under Schedule 2 is not available, the LVIA for the DP under Schedule 3 should contain a broad assessment of the potential landscape and visual impacts arising from all DPs and non-DPs within the assessment area with a recommendation to carry out further detailed LVIAs before the application of EP for the DPs under Schedule 2.					
N60	LVIA should take into account existing/planned/approved land uses as the baseline conditions. All direct and indirect impacts on existing/planned/approved land uses, and on future outlook of the area should be discussed.	EIAO GN No. 8/2010 3.7(a)		No	Section 11.3 Review of Planning and Development Control Framework Section 11.12 Cumulative Impacts	The LVIA does not provide sufficient details. No indirect impacts are described / discussed in the LVIA.
N61	Landscape impacts should be quantified based on landscape dynamics i.e. different conditions at different planning horizons should be provided when considering the magnitude of change.	EIAO GN No. 8/2010 3.7(b)		No		The LVIA does not provide sufficient details. Landscape impacts are not quantified based on different landscape conditions and locations within the landscape study area. There are also inconsistencies in the prediction on the magnitude of change throughout the LVIA.
N62	Prediction of potential landscape and visual impacts should cover beneficial/ adverse, direct/indirect, short term/long term, reversible/irreversible and cumulative impacts.	EIAO GN No. 8/2010 3.7(c)		No	Tables 11.8, 11.11 LR&LC As Tables 11.6, 11.9, 11.12 VSRS	The LVIA is based on incorrect assumptions. The LIA does not comprise accurate assessments of the potential impacts and impact significance both on affected LR&LC and LCA, arisen from the proposed housing development due to the substantively inaccurate and flawed baseline study.
N63	Impact of the DP on landscape resources including special landscape features and on the LCAs should be assessed. Where situations warrant, it may be necessary to evaluate the merits of preservation in totality, in parts or total destruction of existing landscape and the establishment of a new landscape character area.	EIAO GN No. 8/2010 3.7(d)		No	Figures 11.13.1 to 11.13.4	The LVIA does not provide sufficient details and is not supported by adequate data and evidence. The area of direct physical impact due to the proposed housing development and mitigation measure areas to some LR&LCs are underestimated (e.g. LR&LCs 1.1 and 1.2) in Section 11.9.1. There are errors in the measurement of the affected areas of LR&LCs, LR1.1 and LR1.2 mapped on Figure 11.2. Para. 11.9.1.2 states, for LR1.1, 'Total area affected is approximately 0.13 ha' whereas 0.15 ha is measured on Figure 11.2. Similarly, para 11.9.1.3 states, for LR1.2, 'Approximately 8% (2.82ha) will be lost due to site formation and construction of the proposed public housing development and infrastructure works' whereas 3.09 ha is measured on Figure 11.2.

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N64	Impact assessment can be made for individual SR, SR group, or if appropriate for representative SRs.	EIAO GN No. 8/2010 3.7(e)		N.A.		The merits of preservation in totality are not evaluated, nor is the preservation in parts or total destruction of the existing landscape and the establishment of a new LCA.
N65	<p>L VIA should be determined in significance thresholds, which are made up of two components, namely magnitude of change to baseline conditions due to the DP and sensitivity of receivers. An evaluation matrix shall be derived for judging impact significance. Broadly speaking, magnitude of change relates to parameters of the DP in the context of baseline conditions while sensitivity of receivers refers to properties of SRs. The following are some common but non-exhaustive factors normally considered in deriving the magnitude of change and sensitivity in assessing landscape and visual impacts:</p> <p>(i) Factors affecting the magnitude of change for assessing landscape impacts include:</p> <ul style="list-style-type: none"> <li>• compatibility of the project with the surrounding landscape,</li> <li>• duration of impacts under construction and operation phases,</li> <li>• scale of development, and</li> <li>• reversibility of change.</li> </ul> <p>(ii) Factors affecting the sensitivity for evaluation of landscape impacts include:</p> <ul style="list-style-type: none"> <li>• quality of landscape characters/resources,</li> <li>• importance and rarity of special landscape elements,</li> <li>• ability of the landscape to accommodate change,</li> <li>• significance of the change in local and regional context, and</li> <li>• maturity of the landscape.</li> </ul> <p>(iii) Factors affecting the magnitude of changes for assessing visual impacts include:</p> <ul style="list-style-type: none"> <li>• compatibility of the project with the surrounding landscape,</li> <li>• duration of impacts under construction and operation phases,</li> <li>• scale of development,</li> <li>• reversibility of change,</li> <li>• viewing distance, and</li> <li>• potential blockage of view.</li> </ul> <p>(iv) Factors affecting the sensitivity of receivers for evaluation of visual impacts include:</p> <ul style="list-style-type: none"> <li>• value and quality of existing views,</li> <li>• availability and amenity alternative views,</li> <li>• type and estimated number of receiver population,</li> <li>• duration or frequency of view, and</li> <li>• degree of visibility.</li> </ul>	EIAO GN No. 8/2010 3.7(f)		No		<p>The LVIA is based on incorrect assumptions, does not provide sufficient details and is not supported by adequate data and evidence.</p> <p>The Landscape Baseline Survey is ambiguous and inaccurate, because the baseline studies failed to identify the uniqueness of the existing sensitive landscape character of FGC – the baseline landscape sensitivities used in the assessment are not consistent throughout the LVIA, as well as the assessment of the maturity, regional importance and rarity, leading to grossly inaccurate (understated) adverse impact significance predictions.</p> <p>The description of LR2 is inaccurate and assessment is incomplete, therefore the resulting impact significance is not correct. The maturity of LR2 has been wrongly assessed as 'Young' as well as the regional importance wrongly assessed as 'Medium', when this significant LR has been in existence for over 110 years during the course / over the development of the Old Course's very long history. It should be classified as being of National importance being the oldest continuously managed and maintained golf course recreational grassland in all of China and probably Asia. There is no mention of its special integrated relationship with / supportive role to the adjacent woodland and tree roots allowed to freely stretch underneath the grassland areas with no restrictions.</p> <p>The description of LCA1 is inaccurate and the assessment is incomplete, therefore the resulting impact significance is not correct.</p> <p>There are also inconsistencies in the prediction on the magnitude of change throughout the LVIA.</p>
N66	Landscape impacts should be classified depending on whether the impacts are adverse/beneficial, and irreversible/reversible. Separate assessment should be made for construction phase and operation phase impacts. Assessment of landscape impacts should include presentation of the following in a matrix format:	EIAO GN No. 8/2010 3.7(g)		No	Tables 11.8, 11.11 LR&LC As	<p>The LVIA is based on incorrect assumptions.</p> <p>There are numerous significant errors and omissions in the identification of potential sources of impact arising from the Project.</p>



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	<ul style="list-style-type: none"> <li>Landscape resources / landscape character,</li> <li>Sources of impact,</li> <li>Type of impacts: impact on landscape resources and impact on landscape character,</li> <li>Magnitude of change: negligible, small, intermediate or large with quantification if possible,</li> <li>Landscape sensitivity: low, medium or high,</li> <li>Significance thresholds of potential landscape impact (before mitigation);</li> <li>Mitigation measures, and</li> <li>Significance thresholds of residual impact (after mitigation): Operation Day 1 and Year 10.</li> </ul>					<p>The LVIA failed to correctly identify the residual adverse impacts of Substantial Significance on LRI.2, LR2 (which together cover ~67% of Sub-Area 1) and LCA1 (which covers 100% of Sub-Area 1). Table 11.7 lists "C2 – Site Formation Works and Excavation Works" as a potential source of impact however there is no elaboration of the methodologies to be adopted that enables proper assessment of the potential impacts on the existing LRs in Sub-Area 1, especially upon the trees, and no evidence is presented to explain how it is possible to retain so many trees as proposed in the EIA.</p> <p>There is no presentation of a chosen construction methodology in order to explain sources of construction impacts.</p>
N67	<p>Similarly, visual impacts should be classified depending on whether the impacts are adverse/beneficial, and irreversible/reversible. Separate assessment should be made for construction phase and operation phase impacts. Assessment of visual impacts should include presentation of the following in a matrix format:</p> <ul style="list-style-type: none"> <li>Location of visually sensitive receivers (VSR),</li> <li>Type and approximate number of VSRs,</li> <li>Description of existing view and degree of visibility of DP (such as no view, glimpse, partial view, vista, open view, and panorama view),</li> <li>Receiver sensitivity: low, medium or high,</li> <li>Source of impact,</li> <li>Minimum viewing distance of VSRs</li> <li>Magnitude of change: negligible, small, intermediate, large,</li> <li>Significance thresholds of potential visual impact (before mitigation),</li> <li>Mitigation measures, and</li> <li>Significance thresholds of residual impact (upon mitigation): Operation Day 1 and Year 10.</li> </ul>	EIAO GN No. 8/2010 3.7(h)		No	Tables 11.6, 11.9, 11.12 VSRs	<p>The LVIA does not provide sufficient details.</p> <p>There are no detailed descriptions, evaluation or assessment of the existing visual character, existing conditions or the heritage setting reported / illustrated in the existing baseline conditions.</p> <p>There is no detailed assessment on the actual effectiveness of the proposed mitigation measures during the construction and operation phases.</p>
N68	<p>For some DPs such as transport projects, different sections may create different landscape and visual impacts. The LVIA should contain assessments and mitigation measures specific to each section and the SRs affected.</p>	EIAO GN No. 8/2010 3.7(i)		N.A.		
N69	<p>In order to illustrate the landscape and visual impacts and to demonstrate the effectiveness of the proposed landscape and visual mitigation measures, photomontages at selected representative viewpoints shall be prepared to illustrate :</p> <ul style="list-style-type: none"> <li>existing conditions,</li> <li>unmitigated impacts at Operation Day 1 of the DP (may not be required for assessment of DP under Schedule 3),</li> <li>partially mitigated impacts after implementation of the proposed mitigation measures at Operation Day 1 of the DP (may not be required for assessment of DP under Schedule 3), and</li> <li>residual impacts at Year 10 of the operation stage.</li> </ul>	EIAO GN No. 8/2010 3.7(j)		No	Figures 11.10.1 to 11.10.16 VPs Photomontages	<p>The LVIA does not provide sufficient details.</p> <p>There are no detailed descriptions, evaluation or assessment of the existing visual character, existing conditions or the heritage setting reported / illustrated in the existing baseline conditions.</p> <p>There are no plans / images / photos / any visual aids that identify and show the existing visual character of the FGC or the existing area in which the proposed housing development area in Sub-Area 1 is located.</p> <p>There are no clear and accurate descriptions / justifications on the compatibility of the proposed housing development for the proposed location in Sub-Area 1.</p> <p>There are no descriptions regarding the changes in visual amenity when viewed from within the FGC (from either east or west of Fan Kam Road) or when viewed from outside the FGC.</p>

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N70	Applicants may consult Planning Department on the proposed selection of suitable representative viewpoints for the preparation of the photomontages after the preliminary assessment.	EIAO GN No. 8/2010 3.7(k)		N.A.		There is no detailed assessment on the actual effectiveness of the proposed mitigation measures during the construction and operation phases.
N71	Alternative alignment(s), design(s) and construction method(s) that would avoid or reduce the identified impacts on landscape, or that would make the DP visually more compatible with the setting shall be thoroughly examined before adopting other mitigation measures to alleviate the impacts.	EIAO GN No. 8/2010 3.8(a)		No	Section 2.6, Section 2.7	The LVIA does not provide sufficient details. No alternative design(s) that would avoid / reduce the identified impacts on the landscape or be more visually compatible with the surrounding setting is provided / examined in the LVIA.
N72	Solid mitigation measures that are practical and viable to implement rather than design intent should be proposed.	EIAO GN No. 8/2010 3.8(b)		No	Mitigation Measures Table 11.10 Figures 11.9.1, 11.9.2	The LVIA is based on incorrect assumptions. There is a lack of any evidentiary support for the effectiveness of the proposed mitigation measures. The proposed mitigation measures including preserving / retaining existing trees in-situ in Sub-Area I and transplanting TPLs to Sub-Area 3 are not practical / viable to implement as there has been no apparent detailed consideration on the proposed housing development platform levels against the existing levels of the existing trees or the route to the receptor site for the trees to be transplanted (travelling through undulating land with change in elevation and dense existing vegetation which may be impacted) – no description or details are provided. There is also no apparent rationale given for felling some trees while retaining other adjacent trees. There is no identification of any Tree Protection Areas on any plan in the LVIA to protect the trees during the Site formation and Building construction.
N73	The agreement from relevant parties should be sought in respect of the responsibility of funding, implementation, management and maintenance of the proposed mitigation measures prior to their inclusion into the LVIA. It should be noted that any “grey” areas in these aspects would affect the implementation and/or the effectiveness of the mitigation measures during the operation phase. Unless these issues have been resolved, the effects of these mitigation measures should be discounted in the LVIA.	EIAO GN No. 8/2010 3.8(c)		No	Mitigation Measures Table 11.10	The LVIA is based on incorrect assumptions and does not provide sufficient details. In the EIA LVIA Mitigation Measures Table 11.10 under both the ‘Management Agency’ and ‘Maintenance Agency’ for the Operation Phase – OM1 (Landscape Treatment in Sub-areas 2-4) and OM4 (Compensatory Tree Planting): <i>Proposed usage of Sub-areas 2-4 has not been confirmed yet, the proposed maintenance party is subject to further confirmation.</i> So therefore the 2 MMs (OM1 and OM4) must both be discounted and not included in the LVIA.
N74	Project boundaries should be clearly indicated on all scaled plans including mitigation plans, which can indicate any off-site mitigation measures. Land matters arising from such measures should be fully resolved prior to inclusion of any off-site mitigation measures into the LVIA. In addition, the locations and types of VSRs should also be annotated on mitigation plans to facilitate assessment of residual impacts.	EIAO GN No. 8/2010 3.8(d)		No		The LVIA does not provide sufficient details. No off-site mitigation measures have been identified in the EIA. VSRs are not annotated on mitigation plans to facilitate assessment of residual impacts.
N75	In addressing environmental monitoring and audit, a schedule should be prepared to show the implementation details and the parties responsible for all the mitigation measures from design stage to operation stage.	EIAO GN No. 8/2010 3.8(e)		No	EM&A Manual Section 13 Table 13.2	The LVIA does not provide sufficient details. Only vague implementation details are provided. The schedule shows the funding, implementation, management and maintenance agencies but the 2 MMs (OM1 and OM4) must both be discounted and not included in the LVIA as: <i>Proposed usage of Sub-areas 2-4 has not been confirmed yet, the proposed maintenance party is subject to further confirmation.</i>



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N76	A practical programme for implementation of the recommended mitigation measures shall be worked out to ensure timely completion of the mitigation measures.	EIAO GN No. 8/2010 3.8(f)		No	Section 11.10 Table 11.10	No practical programme and funding proposal for the implementation, management and maintenance of all the recommendation measures, and the parties responsible for all the mitigation measures from design stage to operation stage is provided. The LVIA does not provide sufficient details. There is no programme provided for implementation of the recommended mitigation measures.
N77	Noise Barriers / Enclosures (a) Given the fact that using noise barriers/enclosures as a means to reduce adverse noise impact have their own impact on the visual amenity, they should not be widely adopted as the only way to reduce traffic noise. Alternative ways for mitigation and good environmental land-use transport planning should firstly be explored. (b) The choice of colours, design and materials of the noise barriers/enclosures should be compatible with the surrounding buildings and development context. (c) If there is insufficient space to screen the noise mitigation structures by design features, integrating with boundary walls, or landscape plantings, efforts should be made in the design of the overall form and surface treatment of the structures to make them to become features of aesthetic value in order to give character to the area. (d) To ensure good and innovative design, it is advisable to seek early advice from the ACABAS and agreement with relevant implementation and maintenance departments.	EIAO GN No. 8/2010 3.9		N.A.		
N78	Presentation Materials (a) All illustration materials should be clearly annotated to facilitate understanding of the LVIA. (b) Colour photos should be used to show special landscape elements, LCAs, key views and VSRs. (c) Mapping of landscape impacts and visual impacts should be made in colour. (d) If possible, computer-generated photomontages should be prepared to illustrate LVIA and the mitigation effects. In preparing the photomontage from key viewpoints, the following should be considered : <ul style="list-style-type: none"> <li>• where necessary, it shall include photomontages to illustrate the effect of the proposed mitigation measures at close range,</li> <li>• the main associated features of the DP such as viaducts, retaining structures, noise barriers, catenary system, tunnel portals, vent shafts, cuttings, embankments, lighting poles and associated buildings, etc as in the case of road project should be reflected in the photomontages,</li> <li>• viewpoints shall be taken at practical human eye level and at representative locations,</li> <li>• the overall impact of the DP on the adjacent setting should be shown, and</li> <li>• photomontages shall be presented at a minimum of A4 size.</li> </ul> (e) Computer graphics shall be in a common format compatible with desktop computers.. In addition, technical details such as system set-up.	EIAO GN No. 8/2010 3.10		No		The LVIA does not provide sufficient details. No elevations are provided at all and no meaningful cross section drawings are included to clearly convey the findings of the LVIA or the proposed Mitigation Measures within the PDA, especially to show the landscape impact on the trees to be retained in-situ within Sub-Area 1. The information portrayed in general is very rudimentary and insufficient to be able to interpret, analyse and interrogate the findings of the LVIA, especially the feasibility / practicality of the proposed retention of existing trees within Sub-Area 1 as well as the tree transplanting proposals, which appear not feasible according to industry standards. There is no evidence / details presented to support the practicality or feasibility for the retention of 11 TPIs located within the proposed housing development in Sub-Area 1.

(1) No.	(2) Question Item	(3) Statutory Requirements & Reference in Document	(4) Remark	(5) Is the EIAO TM and ESB Fully Complied With?	(6) Relevant Section in the EIA Report	(7) Any explanations in the Report If "No", Critique and Comment on EIA's EIAO TM and/or ESB Non-compliances'
	<p>software, data files and functions in preparing the illustrations shall be recorded as these may need to be submitted for verification of the accuracy of the illustrations.</p> <p>(f) Other illustrative materials shall be legible and of suitable sizes, preferably no larger than A3 size, can be used to supplement photomontages to facilitate easy understanding of the DP by the public:</p> <ul style="list-style-type: none"> <li>• oblique and aerial photographs showing the general setting of DP in relation to the surrounding setting,</li> <li>• plans, cross-sections and elevations showing important details of the DP, and</li> <li>• physical models and computer-aided drawings.</li> </ul>					
N79	<p>The conclusion should briefly recap the impacts of the DP. Any localised areas where the residual impacts remain significantly adverse after exhaustive mitigations should be clearly highlighted and the justifications for accepting such cases should be put forward.</p>	EIAO GN No. 8/2010 3.11(a)		No	Section 11.14	<p>The LVIA does not provide sufficient details.</p> <p>The LVIA failed to correctly identify the residual adverse impacts of Substantial Significance on LRI.2, LR2 (which together cover ~67% of Sub-Area 1) and LCA1 (which covers 100% of Sub-Area 1).</p> <p>There is no overall conclusion / acceptability on landscape impacts with reference to the five criteria listed in Annex 10 of the EIAO TM – 'considered acceptable' etc included in the conclusion of the LVIA in Section 11.14 – The correct objective conclusion of the LIA should be that the landscape impacts are 'Unacceptable' in accordance with the five criteria in EIAO TM Annex 10.</p> <p>The EIA consultant has had 2.5 years to prepare the LIA which is ample time to undertake accurate detailed site surveys, identify development options, identify the potential sources of impacts predict the adverse impacts and prepare and present detailed proposals to mitigate those impacts yet, there is inadequate information on the proposed housing development, numerous significant errors and omissions in the baseline survey information, no detailed critical analysis of potential impacts of alternative construction options, and no evidentiary support for the practicality of the proposed landscape mitigation measures.</p> <p>The LVIA contains numerous significant errors and omissions in the baseline survey and identification of sensitivities to change; significant errors and omissions in the identification of sources of impact and magnitude of change; lack of any evidentiary support for the effectiveness of the proposed mitigation measures; and numerous significant errors, omissions, and deficiencies in the assessment methodology which mean that, most critically, if the baseline survey and assessment had been conducted correctly / objectively.</p> <p>There may be a lot more missing trees and more inaccuracies in tree measurements and data etc that we have been unable to identify / check via an independent checker within the short time available during the EIA public comments period.</p> <p>The LVIA does not provide sufficient details and is not supported by adequate data and evidence.</p> <p>The area loss of LRs affected by the proposed housing development and mitigation measure areas are not quantified or compared to the original area, only the number of trees proposed to be removed is quantified in the summary.</p>
N80	<p>All mitigation measures should be summarised and a comparison with quantification should be made on the net gain/loss of landscape resources affected by the DP.</p>	EIAO GN No. 8/2010 3.11(b)		No	Mitigation Measures Table 11.10	



(1) No.	(2) Question Item	(3) Statutory Requirements & Reference in Document	(4) Remark	(5) Is the EIAO TM and ESB Fully Complied With?	(6) Relevant Section in the EIA Report	(7) Any explanations in the Report If "No", Critique and Comment on EIA's EIAO TM and/or ESB Non-compliances'
N81	The impacts on individual LCAs or VSRs should be clearly stated as to how they are synthesized to arrive at the overall impact of the DP.	EIAO GN No. 8/2010 3.11(c)		No		The permanent irreversible loss of 100+ year old trees and woodland landscape cannot be adequately compensated by compensatory planting at either 'Day 1' or 'Year 10'. The area of direct physical impact due to the proposed housing development and mitigation measure areas to some LRs are underestimated (e.g. LRs 1.1 and 1.2) in Section 11.9.1. There are errors in the measurement of the affected areas of LRs, LR1.1 and LR1.2 mapped on Figure 11.2. Para. 11.9.1.2 states, for LR1.1, 'Total area affected is approximately 0.13 ha' whereas 0.15 ha is measured on Figure 11.2. Similarly, para 11.9.1.3 states, for LR1.2, 'Approximately 8% (2.82ha) will be lost due to site formation and construction of the proposed public housing development and infrastructure works' whereas 3.09 ha is measured on Figure 11.2.
N82	LVIA Conclusion	EIASB 3.4.11, EIASB Appendix J, EIAO TM, EIAO GN No. 8/2010		No		The LVIA is based on incorrect assumptions. The scale and magnitude of the impacts described are minimal, as it was not based on correct assumptions, as the baseline study had also not correctly identified the quality of the existing landscape.  The LVIA is based on incorrect assumptions, does not provide sufficient details and is not supported by adequate data and evidence. Taking all of the above points into account, to conclude and summarise, the Technical Review revealed that the LIA does not follow correctly, nor satisfy numerous requirements of, the Environmental Impact Assessment Study Brief (SB), Environmental Impact Assessment Ordinance Technical Memorandum (EIAO TM) and EIAO Guidance Note 8/2010 (EIAO GN 8/2010) and as a result, the findings and conclusions of the LIA are objectively unsustainable and therefore they should be rejected and dismissed.  The LIA contains numerous significant errors and omissions in the baseline survey and identification of sensitivities to change (e.g., fails to identify the unique, cultural, historic and nationally important nature of the Old Course recreational grassland, and associated unique landscape character comprising a matrix of grassland, ancient lowland secondary woodland, undulating topography and hydrology in the Potential Development Area (PDA); significant errors and omissions in the identification of sources of impact and magnitude of change (e.g., serious underestimation of impacts on the Trees of Particular Interest (TPIs), secondary woodland, grassland and landscape character); lack of any evidentiary support for the effectiveness of the proposed mitigation measures (e.g., tree preservation, tree transplanting, and compensatory tree planting, of which the latter actually exacerbates adverse impacts); and numerous significant errors, omissions, and deficiencies in the assessment methodology which mean that, most critically, if the baseline survey and assessment had been conducted correctly and objectively in accordance with the methodology set out in the SB, EIAO TM and EIAO GN8/2010, the assessment should have identified five Adverse Landscape Impacts of Substantial Significance, none of which can be adequately mitigated, which, in turn, means that the correct objective conclusion of the assessment, in accordance with the five criteria in EIAO TM Annex 10, should be that the landscape impacts are 'Unacceptable'.

(1) No.	(2) Question Item	(3) Statutory Requirement & Reference in Document	(4) Remark	(5) Is the EIAO TM and ESB Fully Complied With?	(6) Relevant Section in the EIA Report	(7) Any explanations in the Report If “No”, Critique and Comment on EIA’s EIAO TM and/or ESB Non-compliances’
						<p>The Technical Review also revealed that the EIA consultant has apparently failed to advise CEDD of the procedures laid down in DEVB TC(W) 5/2020 requiring submission of details of potentially registrable Old and Valuable Trees (OVTs) to the GLTMS and furthermore, that if the correct procedure is followed, there is high likelihood that identification of the presence in Sub-Area 1 of 70 potentially registrable OVTs effectively precludes the development of Sub-Area 1 as a public housing development, since removal of living OVTs is prohibited.</p>



## Appendix 3.5 - PAUL JANSEN FGC



The Hong Kong Golf Club (Old Course): A  
landmark for Golden Age Architecture in Asia

### An architect's perspective

The Old Course at the Hong Kong Golf Club (Fanling) represents the first installment of the “Golden Age” of golf course architecture in China. It’s also representative of a period in golf course Architecture (1900 - 1939) where golf courses were inspired in large by the Old Course at St Andrews, Scotland. This period also produced the greatest number of golf courses currently ranked in the top 100 across the globe.

The primary mark of a golf course designed and built during this period was to discover and then present the golfer with challenging shots inherent in the landscape. It was of the utmost importance to make the fullest use of existing features: holes were designed to possess a striking individuality though some gift of nature, anything stereotyped would be avoided and all construction work would follow the irregular lines of nature. This is evident throughout the Old Course where the land dictates the play and gives rise to a layout that is unique in style and character and different from anything else in Hong Kong and indeed China. What other golf courses in the region would you find blind shots and crossing holes that are common place at Fanling and other golden age venues?

Much of the St Andrews charm lies in its quiriness and evolution and the same can be said for the Old Course at Fanling. Like St Andrews the Old Course has been refined over the years to keep up to date with advances in technology, new infrastructure surrounding the facility and because of continual vegetation growth and expansion but very little of the quiriness and unconventional has been taken away and thus still remains a showpiece for any budding golf course architect or golf historian. The primary inspiration back when the Old Course was built in 1911 was the Scottish way of playing close to the ground which differs greatly from the modern courses built post 1950 where the layout requires the golfer to attack the target more through the air. This is evident on the Old Course where it would be possible to get around with a putter and where there is typically always an open route into a green or landing area.

During the golden period in the early twentieth century match play was the preferred format for playing golf. This allowed architects more freedom to create daring and unconventional holes that would often produce high scores. Golf is very different today. Stroke play is the primary competition where the goal is to complete a round in the fewest number of shots. Anything that is deemed too quirky or unconventional and requires an element of luck is seen in the negative because it’s possible that a player will produce a high score which will impact the end score. This is one of the reasons why there are few courses left that look and play like the Old Course at Fanling today.

During the golden age period of architecture “luck” was regarded as part of the legitimate fun of the game, without which as a sport the game would suffer. The

attraction that counted most was the test of ingenuity in getting round difficulties and overcoming new and unexpected situations. Contrary to this modern golf course architects and superintendents are asked to do everything in their power to eliminate luck, which limits more creative design concepts and unconventional golf. The outcome being that all of our modern golf courses have become relatively standardised in their demands and hazards to the point that the golfer seldom encounters a bad lie in the fairway or bunker, or a bad bounce on his approach. Today anything remotely challenging and out of the ordinary is quickly criticized as "unfair". This includes a blind tee shot or uneven lies which are all common place on the Old Course.

To go further modern architecture has had a tendency to apply so many standards of "fairness" that all holes have begun to look and play alike. One of the undeniable strengths of the Old Course is the variety of the holes. Not one hole looks or plays the same and the route constantly changes direction allowing golfers an opportunity to appreciate different views and terrain. Furthermore, the modern game has become plagued by a "mechanical number driven" mind set and as a result most golf courses are judged on mathematical lines. If a layout does not conform to a particular sequence, holes don't follow a set formula or the course does not stretch to well over 7,000 yards and play to par 70 (or more) it's not considered a worthy test. To put it simple the Old Course is one of only a few golf courses outside of Great Britain and Ireland that rebuffs this thinking. Instead the course carries a classic old school look and feel where holes are original and don't follow any formula - see for instance the green site on the Meadow (Hole No. 1) or the drive on the Twins (Hole No.2) and Tommy Tucker (Hole No. 10) and even the crossing shot on the Horizon (Hole No. 13). These are all unique golf situations you would not find anywhere else in the region.

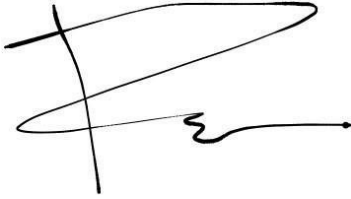
In addition to this the layout is 'out and back' (like St Andrews and so many of the other classic golf courses of the golden age era) which is also testament to its uniqueness in a day and age where the majority of golf courses return to the clubhouse and go back out again.

There is a little bit of the St Andrews Old Course strategy and nuance in every golf course of the golden age including on the Old Course at Fanling. Golfers are required to think a little as they plot their way around the course all the time aware of the beauty of the surroundings and the abundant wildlife that wanders free there. Manufactured features - prevalent on so many of the modern courses in Asia and beyond - are few and far between. Instead the principal inspiration in the design was to seize on any natural features and accentuate the best golf points on them. On the Old Course the existing ground contours, big and small, influence the play strategy from start to finish and provide worthy hazards, negating the need to build man made features at a cost and lesson for any client or budding golf architect. The original charm of golf was its simplicity and naturalness and helped by the fact that back at the turn of the twentieth century golf courses were built using horse drawn slip scrapers and man's hand, which gave rise to the notion that its best to use what is there versus create something new. So much of the quirkiness and unique character of the Old Course is as a result of the multitude of natural features that remained during the construction and continue to determine the play strategy.

The principal thought in designing and building golf courses of the golden age era was to limit the hand of man and in doing so provide a constant adventure in a natural setting like is the case at St Andrews and the Old course at Fanling. Much like what



the National Golf Links of America did for golf in the USA (and note it was also built in 1911) this was the first “great” eighteen-hole golf course built in China and testament to the achievement that a course had been produced - outside of Great Britain and Ireland - where every hole is a good one and presents a new problem. Most important, it laid the platform for the growth of the game of golf in the region.

A handwritten signature in black ink, consisting of several fluid, overlapping strokes. It starts with a vertical line on the left, crosses into a large loop at the top, and ends with a horizontal line that has a small flourish and an arrowhead pointing to the right.

Paul Jansen  
February 2021

## Appendix 3.6 - ECOLOGICAL ANNEXES

# **Annex 1. Information on Surveys conducted by AEC / HKGC on Bats, Moths and Night Sky Brightness**



## Information on Surveys conducted by AEC / HKGC on Bats, Moths and Night Sky Brightness

### 1. Bats

#### 1.1. Survey Equipment

1.1.1. The equipment used for bat surveys conducted by AEC are listed below:

**Static Recorders:**

- Wildlife Acoustics Song Meter SM4BAT FS Ultrasonic Recorder
- Wildlife Acoustics Song Meter SM4BAT ZC Ultrasonic Recorder

**Portable Hand-held Recorders:**

- Wildlife Acoustics Echo Meter Touch 2 Pro Bat Detector
- Anabat Walkabout Bat Detector

#### 1.2. Survey Location

1.2.1. A wide range of habitats are present in Fanling Golf Course, and different bat species rely on different foraging/roosting habitats. As habitat edges are important for bats, surveys were conducted at interfaces between woodland/turfgrass, pond/turfgrass, and developed area/turfgrass. Wetland habitats (such as watercourses, ponds and marshes) are also focused on since some bat species (such as the vulnerable Rickett's Big-footed Bat) feed on fish and insects associated with waterbodies.

#### 1.3. Survey Programme

1.3.1. A summary of bat surveys conducted by AEC in Fanling Golf Course focusing on Sub-Areas 1 – 4 and the area around the Clubhouse is provided in Table 1 below. These surveys are conducted mainly using static bat recorders and supplemented by portable hand-held recorders. The operating time of static bat recorders was from half an hour before sunset to half an hour after sunrise.

**Table 1. A summary of bat surveys conducted by AEC in Fanling Golf Course**

Month	Within EIA Study Period (Nov 19 – Oct 20)	Survey Effort (No. of nights)				
		Sub-Area 1	Sub-Area 2	Sub-Area 3	Sub-Area 4	Clubhouse
July 2018	No		13			
August 2018	No		11	8		
September 2018	No		5			
October 2018	No	9				15
April 2020	Yes		9		8	
May 2020	Yes		29		4	
June 2020	Yes				19	
July 2020	Yes				16	
August 2020	Yes				14	
September 2020	Yes				16	
October 2020	Yes				9	
April 2021	No	8				
May 2021	No	41*				
September 2021	No		23			
October 2021	No	11				
<b>Total number of survey nights</b>		<b>69</b>	<b>90</b>	<b>8</b>	<b>86</b>	<b>15</b>

\* Two recorders were deployed simultaneously throughout some of the survey nights at different locations within Sub-Area 1

## 1.4. Results

1.4.1. Only data obtained during the wet season (from April to October) are analysed. Data collected in the dry season (from November to March) are not included in any of the following sections. Summaries of the findings are provided in **Tables 2 and 3** below.

**Table 2. Measurement of bat activities recorded from the surveys carried out by AEC**

	Sub-Area 1	Sub-Area 2	Sub-Area 3	Sub-Area 4	Clubhouse
<b>Total no. of bat detections</b>	40,745	57,552	1,758	36,681	11,235
<b>Total no. of survey nights</b>	69	90	8	86	15
<b>Average no. of bat detections per night</b>	590.5	639.5	219.7	426.5	749.0
<b>Maximum no. of bat detections per night (Date)</b>	4,827 (6 Oct 21)	1,932 (29 May 20)	422 (27 Aug 18)	3,949 (2 Apr 20)	1,544 (10 Oct 18)

**Table 3. Species of bats recorded from the surveys carried out by AEC**

Species	Conservation and Protection Status <sup>1</sup>	Number of bat detections (Total and average per survey night)									
		Sub-Area 1		Sub-Area 2		Sub-Area 3		Sub-Area 4		Clubhouse	
		Total	Avg.	Total	Avg.	Total	Avg.	Total	Avg.	Total	Avg.
Chinese Horseshoe Bat <i>Rhinolophus sinicus</i>	Cap.170	1	0.01	11	0.12	-	-	146	1.70	-	-
Intermediate Horseshoe Bat <i>Rhinolophus affinis</i>	(LC); Cap.170	179	2.59	75	0.83	172	21.50	6,374	74.12	-	-
Least Horseshoe Bat <i>Rhinolophus pusillus</i>	PRC (RC); Cap.170	19	0.28	23	0.26	-	-	24	0.28	-	-
Himalayan Leaf-nosed Bat <i>Hipposideros armiger</i>	(LC); Cap.170	253	3.67	800	8.89	-	-	-	-	132	8.80
Chinese Myotis <i>Myotis chinensis</i>	(LC); RLCV(NT); Cap.170	-	-	1	0.01	-	-	-	-	-	-
Rickett's Big-footed Myotis <i>Myotis pilosus</i>	(LC); IUCN(VU); RLCV(NT); Cap.170	1	0.01	285	3.17	-	-	-	-	-	-
Chinese Noctule <i>Nyctalus plancyi</i>	PRC (RC); Cap.170	2,324	33.68	12,354	137.27	130	16.25	4,331	50.36	2012	134.13
Japanese Pipistrelle <i>Pipistrellus abramus</i>	Cap.170	14,550	210.87	10,354	115.04	-	-	-	-	-	-
Least Pipistrelle <i>Pipistrellus tenuis</i>	RLCV(NT); Cap.170	14,795	214.42	19,188	213.20	-	-	-	-	-	-
Pipistrelle Group <i>Pipistrellus spp.</i> <sup>2</sup>	-	50	0.72	5,338	59.31	616	77.00	23,003	267.48	7,861	524.07
Chinese Pipistrelle <i>Hypsugo pulveratus</i>	(LC); RLCV(NT); Cap.170	5,343	77.43	885	9.83	-	-	-	-	-	-
<b>Lesser Bamboo Bat <i>Tylonycteris pachyptus</i></b>	<b>(LC); Cap.170</b>	<b>1</b>	<b>0.01</b>	<b>904</b>	<b>10.04</b>	-	-	<b>31</b>	<b>0.36</b>	<b>75</b>	<b>5.00</b>
<b>Lesser Yellow Bat <i>Scotophilus kuhlii</i></b>	<b>(LC); Cap.170</b>	<b>1,438</b>	<b>20.84</b>	<b>3,608</b>	<b>40.09</b>	<b>10</b>	<b>1.25</b>	<b>723</b>	<b>8.41</b>	<b>873</b>	<b>58.20</b>
Lesser Bent-winged Bat <i>Miniopterus pusillus</i>	(LC); RLCV(NT); Cap.170	1,791	25.96	3,627	40.30	-	-	-	-	-	-
Wrinkle-lipped Free-tailed Bat <i>Chaerephon plicatus</i>	Cap.170	-	-	99	1.10	-	-	2,049	23.83	111	7.4
<b>Short-nosed Fruit Bat <i>Cyanopterus spinx</i></b> <sup>4</sup>	<b>RLCV(NT); Cap.170</b>	<b>Present</b>		-	-	-	-	-	-	<b>Present</b>	
<b>Number of bat species recorded<sup>2</sup></b>		<b>13</b>		<b>14</b>		<b>4</b>		<b>8</b>		<b>7</b>	
<b>Total number of bat species recorded</b>		<b>15</b>									

**Notes:**

- Conservation and Protection Status refers to the International Union for Conservation of Nature (IUCN) (2022), Fellowes *et al.* (2002), Red List of China's Vertebrates (RLCV) (Jiang *et al.* 2016) and Cap. 170 Wild Animals Protection Ordinance.
  - Conservation status by IUCN (2022): VU = Vulnerable.
  - Conservation status by Fellowes *et al.* (2002): LC = Local Concern, RC = Regional Concern, PRC = Potential Regional Concern, PGC = Potential Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
  - Conservation status by Red List of China's Vertebrates (RLCV) (Jiang *et al.* 2016): NT= Near Threatened.
  - Cap. 170: All wild bats species are protected under Chapter 170. Wild Animals Protection Ordinance.
- The group is not independently counted in the number of species recorded in Sub-Areas 1 and 2 as *P. abramus* and *P. tenuis* were recorded.
- Species in bold are mentioned specifically in the EIA Study Brief.
- Not detectable by bat detector; presence or absence noted only from direct sightings and observations.



1.4.2. For easy comparison, the information regarding bat species recorded from the 12-month surveys conducted as part of the EIA process has been extracted from the main text of the EIA Report. The relevant appendices are tabulated into **Table 4** below in the same format as **Table 3**.

1.4.3. According to the EIA Report, Short-nosed Fruit Bat was also recorded but not from Sub-areas 1 – 4 or the Clubhouse area. Hence, this record is not presented below.

**Table 4. Species of bats recorded from the EIA Report (No. EIA-282/2022)**

Species	Conservation and Protection Status <sup>1</sup>	Number of bat detections (Total and average per survey night)									
		Sub-Area 1		Sub-Area 2		Sub-Area 3		Sub-Area 4		Clubhouse	
		Total	Avg.	Total	Avg.	Total	Avg.	Total	Avg.	Total	Avg.
Chinese Horseshoe Bat <i>Rhinolophus sinicus</i>	Cap.170	-	-	-	-	-	-	-	-	-	-
Intermediate Horseshoe Bat <i>Rhinolophus affinis</i>	(LC); Cap.170	-	-	-	-	-	-	-	-	-	-
Least Horseshoe Bat <i>Rhinolophus pusillus</i>	PRC (RC); Cap.170	-	-	-	-	-	-	-	-	-	-
Himalayan Leaf-nosed Bat <i>Hipposideros armiger</i>	(LC); Cap.170	-	-	-	-	-	-	-	-	-	-
Chinese Myotis <i>Myotis chinensis</i>	(LC); RLCV(NT); Cap.170	-	-	-	-	-	-	-	-	-	-
Rickett's Big-footed Myotis <i>Myotis pilosus</i>	(LC); IUCN(VU); RLCV(NT); Cap.170	-	-	-	-	-	-	-	-	-	-
Chinese Noctule <i>Nyctalus plancyi</i>	PRC (RC); Cap.170	-	-	-	-	-	-	-	-	-	-
Japanese Pipistrelle <i>Pipistrellus abramus</i>	Cap.170	‘Scarce’ (from one location only)		-	-	-	-	-	-	-	-
Least Pipistrelle <i>Pipistrellus tenuis</i>	RLCV(NT); Cap.170	-	-	-	-	-	-	-	-	-	-
Pipistrelle Group <i>Pipistrellus spp.</i>	-	-	-	-	-	-	-	-	-	-	-
Chinese Pipistrelle <i>Hypsugo pulveratus</i>	(LC); RLCV(NT); Cap.170	-	-	-	-	-	-	-	-	-	-
<b>Lesser Bamboo Bat</b> <i>Tylonycteris pachypus</i>	<b>(LC); Cap.170</b>	-	-	-	-	-	-	-	-	-	-
<b>Lesser Yellow Bat</b> <i>Scotophilus kuhlii</i>	<b>(LC); Cap.170</b>	-	-	-	-	-	-	-	-	-	-
Lesser Bent-winged Bat <i>Miniopterus pusillus</i>	(LC); RLCV(NT); Cap.170	-	-	-	-	-	-	-	-	-	-
Wrinkle-lipped Free-tailed Bat <i>Chaerephon plicatus</i>	Cap.170	-	-	-	-	-	-	-	-	-	-
<b>Short-nosed Fruit Bat</b> <i>Cyanopterus spinx</i> <sup>4</sup>	<b>RLCV(NT); Cap.170</b>	-	-	-	-	-	-	-	-	-	-
<b>Number of bat species recorded<sup>2</sup></b>		<b>1</b>		<b>0</b>		<b>0</b>		<b>0</b>		<b>0</b>	
<b>Total number of bat species recorded</b>		<b>1</b>									

**Notes:**

- Conservation and Protection Status refers to IUCN (2022), Fellowes *et al.* (2002), Red List of China's Vertebrates (RLCV) (Jiang *et al.* 2016) and Cap. 170 Wild Animals Protection Ordinance.
  - Conservation status by IUCN (2022): VU = Vulnerable.
  - Conservation status by Fellowes *et al.* (2002): LC = Local Concern, RC = Regional Concern, PRC = Potential Regional Concern, PGC = Potential Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
  - Conservation status by Red List of China's Vertebrates (RLCV) (Jiang *et al.* 2016): NT= Near Threatened.
  - Cap. 170: All wild bats species are protected under Chapter 170. Wild Animals Protection Ordinance.
- The group is not independently counted in the number of species recorded in Sub-Areas 1 and 2 as *P. abramus* and *P. tenuis* were recorded.
- Species in bold are mentioned specifically in the EIA Study Brief.
- Not detectable by bat detector; presence or absence noted only from direct sightings and observations.

**2. Moths**

**2.1. Survey Methodology**

- 2.1.1. Each individual moth survey session used 3 light traps, all with 125W mercury vapour light powered from a 2kW generator, in conjunction with either a Robinson type bucket trap or a Skinner type box trap (see Fry & Waring, 2001 A Guide to Moth Traps and Their Use, Amateur Entomologists' Society. 68 pages; ISBN 9780900054679). A 8W LepiLED maxi light with sheet with 5mm x 5mm grids was also used as a supplement in some locations. Traps deployed were set between 50m and 100m apart from each other. Abiotic data recorded at the start and end of each session included temperature, relative humidity, wind direction, average wind speed and gusts (using Beaufort scale) and cloud cover. Moon phase and ground conditions (how dry or wet) were noted.
- 2.1.2. Each recording duration began from dusk and ended at 23:45, by when all three traps' contents counted and processed. The contents of each trap was documented on a digital voice recorder. Most species recorded were photographed on site, with voucher material retained for some species that were not readily identified *in situ*. The voucher material retained have been deposited at the fauna collections of Kadoorie Farm & Botanic Garden (KFBG).
- 2.1.3. Species recorded from the surveys were identified with reference to the followings: (1) Moth collections of KFBG (including those obtained during Dr. Roger Kendrick's PhD studies data and subsequent voucher material from 2002 to present), Natural History Museum, UK, and Nankai University; (2) books covering the moth fauna of Borneo, Taiwan, China, Nepal, Japan and Thailand; and (3) peer-reviewed literature for moths of the Oriental Region as will be referenced in Kendrick (in prep), An Illustrated Guide to the Moths of Hong Kong, Hong Kong Lepidopterists' Society, Tuen Mun; ~1000pp & ~100 plates.
- 2.1.4. It should be highlighted that there are no published IUCN assessments for any of Hong Kong's moths. Other conservation assessment for moths in the region is also scarce. Therefore, consideration of conservation status of moth species (for both local and global context) is based upon the assessments done for the 2016 BSAP process and expanded for the Illustrated Guide to HK Moths, as undertaken on the HK Moth Recording Database (database available on iNaturalist).
- 2.1.5. Each recorded species was assessed for its local status (including local distribution and commonness). Where significant, conservation importance at a global context was evaluated following IUCN (2001) criteria, as well as its distribution in Hong Kong: widespread, local, or restricted (Kendrick, 2002: 340). Provisional IUCN Red List ratings are given to species in accordance with the IUCN Red List Criteria.

## 2.2. Survey Dates

- 2.2.1. In the 2018 surveys, moth recording took place during the middle of wet season, whereas in 2020 the recording took place near the start and the end of the wet season. The latter periods are considered to be the most favourable for surveying adult moths in Hong Kong (Kendrick, 2002; The Moths (Insecta of Hong Kong; PhD thesis, HKU). Survey dates were targeted to avoid dates at or near full moon (+/- 4 days) and to avoid weather with heavy rain as far as possible.

**Table 5. Survey dates for moths in 2018 and 2020**

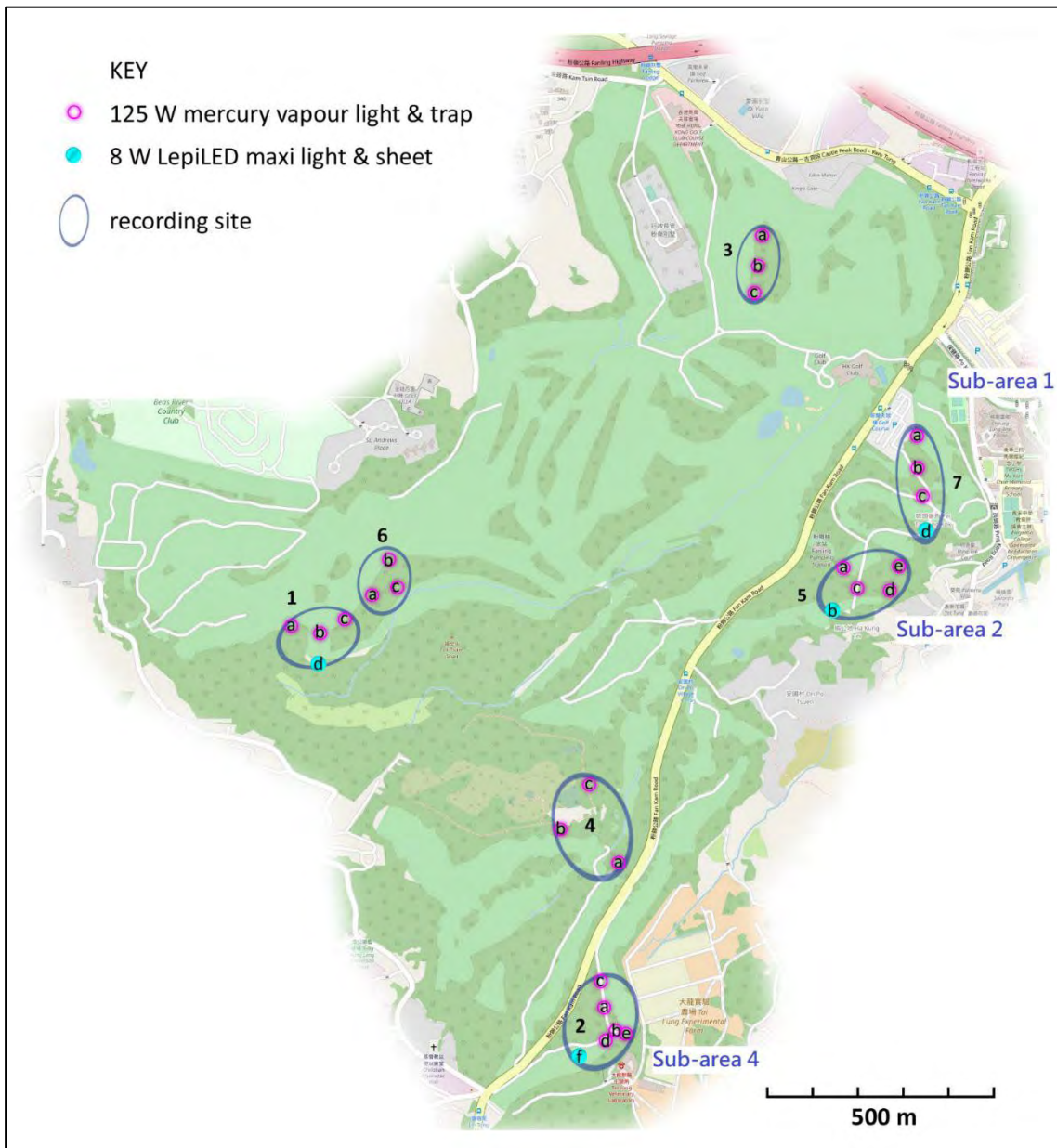
Month	2018	2020
May	-	27 <sup>th</sup> , 28 <sup>th</sup> , 29 <sup>th</sup>
June	-	-
July	19 <sup>th</sup> , 26 <sup>th</sup> , 27 <sup>th</sup> , 30 <sup>th</sup> , 31 <sup>st</sup>	-
August	3rd, 6th, 20th	-
September	-	-
October	-	16 <sup>th</sup> , 20 <sup>th</sup> , 23 <sup>rd</sup>

## 2.3. Survey Locations



2.3.1. The locations of moth surveys are presented below:

*Plate 1. Locations of moth surveys conducted by HKGC in 2018 and 2020*



## 2.4. Results

2.4.1. Results from surveys conducted by the Hong Kong Golf Club (HKGC) are presented in Tables 6 and 7 below, and are compared with the results extracted from the published EIA Report (No. EIA-282/2022).

**Table 6.** Total number of moth species recorded from the surveys

Area	Total no. of all moth species recorded		No. of species of conservation concern recorded	
	Surveys for the EIA	Surveys by HKGC	Surveys for the EIA	Surveys by HKGC
Sub-area 1	13	142	0	10
Sub-area 2	8	297	1	24
Sub-area 3*	19	-	0	-
Sub-area 4	13	249	0	12
Sub-total for Project Site	38	453	1	34
500m Assessment Area	30	329	1	23
<b>Total</b>	<b>59</b>	<b>593</b>	<b>2</b>	<b>48</b>

\* Sub-area 3 was not surveyed by HKGC

**Table 7.** No. of moth species of global conservation importance recorded from the surveys

Global Conservation Status <sup>1</sup>	No. of Species Recorded					
	Project Site <sup>2</sup>			Sub-total for Project Site	500m Assessment Area (Excluding Project Site)	Total
	Sub-area 1	Sub-area 2	Sub-area 4			
Provisional IUCN (CR)	0	1	1	2	0	2
Provisional IUCN (EN)	0	1	0	1	2	3
Provisional IUCN (VU)	4	10	4	12	7	20
Provisional IUCN (NT)	6	12	7	19	14	23
<b>Not Threatened</b>	41	66	58	93	64	108
<b>Not Assessed</b>	91	207	179	326	242	437
<b>Total</b>	<b>142</b>	<b>297</b>	<b>249</b>	<b>453</b>	<b>329</b>	<b>593</b>

**Notes:**

1. Provision IUCN Red List Status: CR = Critically Endangered; EN = Endangered; Vu = Vulnerable; NT = Near Threatened; species known to be common and widespread species were not assessed.
2. No surveys have been conducted by HKGC in Sub-area 3.

**Table 8.** No. of moth species of local conservation importance recorded from the surveys

Status in Hong Kong		No. of Species Recorded					
Distribution <sup>1</sup>	Commonness <sup>2</sup>	Project Site <sup>4</sup>			Sub-total for Project Site	500m Assessment Area (Excluding Project Site)	Total
		Sub-area 1	Sub-area 2	Sub-area 4			
Restricted	Very Rare	0	1	2	3	3	6
	Rare; Endemic to HK	0	0	0	0	1	1
	Rare	3	10	5	16	8	23
	Scarce; Endemic to HK	0	1	0	1	0	1
	Scarce	0	2	0	2	0	2
Local	Rare	6	15	6	20	10	25
	Scarce	7	9	10	22	7	28
	Uncommon	2	10	8	16	2	16
	Frequent	1	2	1	3	2	3
Widespread	Rare	0	0	0	0	2	2
	Scarce; Endemic to HK	0	2	0	2	1	2
	Scarce	4	19	14	32	23	45
	Uncommon	13	31	20	51	40	77
	Frequent; Endemic to HK	1	2	1	2	1	3
	Frequent	41	86	80	124	98	163
	Common; Endemic to HK	1	2	2	3	2	3
	Common; Near Endemic to HK	1	1	0	1	0	1
	Common	49	81	80	123	88	140
	Very Common; Near Endemic to HK	0	1	1	1	1	1
Migrant	Very Common	13	20	16	26	19	27
	Rare	0	0	1	1	0	1
<i>Data Deficient</i> <sup>3</sup>		0	2	2	4	21	23
<b>Total</b>		<b>142</b>	<b>297</b>	<b>249</b>	<b>453</b>	<b>329</b>	<b>593</b>



**Notes:**

1. Distribution follows Kendrick (2002).
2. Commonness of species in Hong Kong is defined on a seven-point scale based upon the number of observations of each species in Hong Kong: Very Rare = 1 or 2 observations of a species; Rare = 3 – 6 observations; Scarce = 7 – 13 observations; Uncommon = 14 – 27 observations; Frequent = 28 – 69 observations; Common = 70 – 229 observations; Very Common = 230 observations or more. The number of observations is based upon the percentage of recording events undertaken in Hong Kong (following Walthew (1997) for the butterflies of Hong Kong) between 2006 and 2019.
3. Data deficient represents species that are either: (1) in a complex group of externally identical or almost identical species, which are identifiable with certainty to species ranked only by dissection of the reproductive organs or molecular analysis; both approaches are beyond the scope of this study due to time constraints, or (2) species whose identity has not yet been confirmed as the species is newly or recently recorded in Hong Kong, or (3) species complex that can now be identified as species, which has previously been confused with other similar taxa and recorded as such, so that past data for the species is not reliable for the purpose of status and distribution analysis.
4. No surveys have been conducted by HKGC in Sub-area 3.

### 3. Night Sky Brightness

#### 3.1. Survey Methodology

- 3.1.1. Night-time light level measurements were taken monthly from May 2020 to March 2022. The Fanling Golf Course is divided into twelve grid zones, each of 500m x 500m in size. Measurements were taken in a standardised location within each corresponding grid (closest to the centre of the grid where practicable) under clear sky with no or very little cloud coverage, using the Dark Sky Meter Mobile Phone Application, an equivalent of Sky Quality Meters (SQMs), which is sensitive to visual light and measures the brightness of the night sky in magnitudes per square arcsecond (mag/arcsec<sup>2</sup>).
- 3.1.2. Results of the average SQM readings for each grid are compared with the Bortle Scale, a nine-level numeric scale that measures the night sky's brightness (see **Table 8**). It quantifies the astronomical observability of celestial objects and the interference caused by light pollution. The scale ranges from Class 1 (the darkest skies possible on Earth) to Class 9 (inner-city skies).

#### 3.2. Results

- 3.2.1. Results of the average SQM readings for each grid compared with the Bortle Scale (see **Table 8**) are presented in **Plate 2** below.
- 3.2.2. Comparison with data or information presented in the published EIA Report is not possible since no baseline night-time light level or sky brightness measuring were conducted in the EIA.

*Plate 2. Results of night sky brightness measurement*





**Table 8. Bortle Scale with corresponding SQM levels**

Class		Corresponding SQM level (mag/arcsec <sup>2</sup> )	General Description
1	Excellent dark sky	21.99–22.0	The zodiacal light is visible and colourful; the gegenschein, zodiacal band, and airglow are visible; many constellations are barely recognisable amid large number of stars
2	Typical truly dark	21.89–21.99	The zodiacal light is distinctly yellowish and bright enough to cast shadows at dusk/dawn; airglow may be weakly visible near horizon; clouds are only visible as dark holes against the sky; surroundings are barely visible silhouetted against the sky
3	Rural sky	21.69–21.89	The zodiacal light is striking in spring and autumn, and colour is still visible; some light pollution evident at the horizon; clouds are illuminated near the horizon, dark overhead; nearer surroundings are vaguely visible
4	Rural/suburban transition	20.49–21.69	The zodiacal light is still visible, but does not extend halfway to the zenith at dusk/dawn; light pollution domes visible in several directions; clouds are illuminated in the directions of the light sources, dark overhead; surroundings are clearly visible, even at a distance
5	Suburban sky	19.50–20.49	Only hints of zodiacal light are seen on the best nights in autumn and spring; light pollution is visible in most, if not all, directions; clouds are noticeably brighter than the sky; the Milky Way is very weak or invisible near the horizon, and looks washed out overhead
6	Bright suburban sky	18.94–19.50	The zodiacal light is invisible; light pollution makes the sky within 35° of the horizon glow greyish white; clouds anywhere in the sky appear fairly bright; surroundings are easily visible
7	Suburban/urban transition	18.38–18.94	Light pollution makes the entire sky light grey; strong light sources are evident in all directions; clouds are brightly lit; the Milky Way is nearly or totally invisible
8	City sky	Below 18.38	The sky is light grey or orange – one can easily read; stars forming familiar constellation patterns may be weak or invisible
9	Inner city sky		The sky is brilliantly lit; many stars forming constellations and many fainter constellations are invisible; the only objects to observe are the Moon, the planets, bright satellites, and a few of the brightest star clusters

**– END OF ANNEX 1 –**

## **Annex 2.**

# **Alternative Habitat Evaluation Tables Prepared by AEC**



**Table 1. Alternative evaluation for mixed woodland within Project Site**

Criteria	Mixed Woodland within Project Site (Sub-areas 1-4)	
	Evaluation by AEC	Evaluation in EcolIA (Table 9.10)
Naturalness	The presence of <i>Ardisia villosa</i> and other native flora species that are not routinely planted strongly suggests that this woodland habitat is of natural origin (i.e. not man-made). Some disturbances (e.g. presence of exotic species) are noted but are limited.	<i>Semi-natural habitat</i>
Size	7.69 ha	7.69 ha
Diversity	Low to moderate for flora; moderate for fauna	<i>Low to moderate diversity of flora; moderate diversity of fauna</i>
Rarity	<p>Mixed woodland is a common habitat type in Hong Kong.</p> <ul style="list-style-type: none"> <li>• <b>4</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. <i>Aquilaria sinensis</i></li> <li>2. <i>Ardisia villosa</i></li> <li>3. <i>Ilex graciliflora</i></li> <li>4. <i>Geodorum densiflorum</i></li> </ol> </li> <li>• <b>11</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. Masked Palm Civet</li> <li>2. Crested Goshawk</li> <li>3. Common Emerald Dove</li> <li>4. Rufous-capped Babbler</li> <li>5. Metallic Cerulean</li> <li>6. Danaid Eggfly</li> <li>7. Common Rose</li> <li>8. Common Birdwing</li> <li>9. Many-banded Krait</li> <li>10. Japanese Pipistrelle</li> <li>11. <i>Cerynea discontenta</i></li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>4</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. <i>Aquilaria sinensis</i></li> <li>2. <i>Ardisia villosa</i></li> <li>3. <i>Ilex graciliflora</i></li> <li>4. <i>Geodorum densiflorum</i></li> </ol> </li> <li>• <b>11</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. Crested Goshawk</li> <li>2. Common Emerald Dove</li> <li>3. Rufous-capped Babbler</li> <li>4. <i>Metallic Cerulean</i>,</li> <li>5. <i>Danaid Eggfly</i></li> <li>6. <i>Common Rose</i></li> <li>7. <i>Common Birdwing</i></li> <li>8. <i>Many-banded Krait</i></li> <li>9. <i>Japanese Pipistrelle</i></li> <li>10. <i>Masked Palm Civet</i></li> <li>11. <i>Cerynea discontenta</i></li> </ol> </li> </ul> <p><i>(Assessment of the rarity of the habitat itself was not given in the EcolIA)</i></p>
Re-creatability	Could be re-created given sufficient land area, although maturation of woodland would take a considerable period of time (over 30-50 years). Some trees are of notably old age (Jim <i>et al.</i> 2020) and are thus difficult to be replaced.	<i>Can be re-created</i>
Fragmentation	Although patchy, it is well connected with the adjacent secondary woodland and plantation to form a large, continuous wooded area. It also forms a mosaic with the adjacent open turfgrass habitat. Between the wooded and open habitats there are no major physical barriers; wildlife have been sighted moving freely between these habitats. Therefore, there is no major fragmentation or isolation.	<i>Isolated in patches</i>
Ecological linkage	Ecologically linked with adjacent habitats including turfgrass, secondary woodland, and plantation	<i>Connecting adjacent woodland</i>
Potential value	Moderate value given that it could further attract wildlife use as eco-friendly management practices (such as enrichment planting) are in place	<i>Low</i>
Nursery/breeding ground	Potentially nesting ground for birds and nursery for Short-nosed Fruit Bats	<i>No significant record</i>
Age	At least 50 years judging from historic aerial photographs although some trees are significantly older with an estimated age ranging from 70 to over 160 years (Jim <i>et al.</i> 2020)	<i>Not applicable</i>
Abundance/ Richness of wildlife	Moderate for moths, birds and butterflies; low to moderate for other faunal groups	<i>Moderate abundance of bird and butterfly; low to moderate abundance of odonate, herpetofauna and mammal</i>
Ecological value	<b>Moderate given the age of the woodland and presence of various species of conservation importance, in particular the very rare <i>Ardisia villosa</i></b>	<i>Low to medium</i>

**Table 2. Alternative evaluation for mixed woodland within Assessment Area**

Criteria	Mixed Woodland in 500m Assessment Area	
	Evaluation by AEC	Evaluation in EcolIA (Table 9.10)
<b>Naturalness</b>	The presence of <i>Ardisia villosa</i> and other native flora species that are not routinely planted strongly suggests that this woodland habitat is of natural origin (i.e. not man-made). Some disturbance (e.g. presence of exotic species) is noted, but limited.	<i>Semi-natural habitat</i>
<b>Size</b>	56.58	<i>56.58 ha</i>
<b>Diversity</b>	Low to moderate for flora; moderate for fauna	<i>Low to moderate diversity of flora; moderate diversity of fauna</i>
<b>Rarity</b>	<p>Mixed woodland is a common type of habitat in Hong Kong.</p> <ul style="list-style-type: none"> <li>• <b>9</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. <i>Aquilaria sinensis</i></li> <li>2. <i>Artocarpus hypargyreus</i></li> <li>3. <i>Ardisia villosa</i></li> <li>4. <i>Aristolochia tagala</i></li> <li>5. <i>Camellia crapnelliana</i></li> <li>6. <i>Geodorum densiflorum</i></li> <li>7. <i>Ilex graciliflora</i></li> <li>8. <i>Keteleeria fortune</i></li> <li>9. <i>Pyrenaria spectabilis</i></li> </ol> </li> <li>• <b>16</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. Crested Goshawk</li> <li>2. Black Kite</li> <li>3. Common Emerald Dove</li> <li>4. Greater Coucal</li> <li>5. Collared Scops Owl</li> <li>6. Rufous-capped Babbler</li> <li>7. Metallic Cerulean</li> <li>8. Danaid Eggfly</li> <li>9. Common Rose</li> <li>10. Common Birdwing</li> <li>11. Small Cabbage White,</li> <li>12. Many-banded Krait</li> <li>13. Short-nosed Fruit Bat</li> <li>14. Japanese Pipistrelle</li> <li>15. Masked Palm Civet</li> <li>16. <i>Cerynea discontenta</i></li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>9</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. <i>Aquilaria sinensis</i></li> <li>2. <i>Artocarpus hypargyreus</i></li> <li>3. <i>Ardisia villosa</i></li> <li>4. <i>Aristolochia tagala</i></li> <li>5. <i>Camellia crapnelliana</i></li> <li>6. <i>Geodorum densiflorum</i></li> <li>7. <i>Ilex graciliflora</i></li> <li>8. <i>Keteleeria fortune</i></li> <li>9. <i>Pyrenaria spectabilis</i></li> </ol> </li> <li>• <b>16</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. Crested Goshawk</li> <li>2. Black Kite</li> <li>3. Common Emerald Dove</li> <li>4. Greater Coucal</li> <li>5. Collared Scops Owl</li> <li>6. Rufous-capped Babbler</li> <li>7. Metallic Cerulean</li> <li>8. Danaid Eggfly</li> <li>9. Common Rose</li> <li>10. Common Birdwing</li> <li>11. Small Cabbage White,</li> <li>12. Many-banded Krait</li> <li>13. Short-nosed Fruit Bat</li> <li>14. Japanese Pipistrelle</li> <li>15. Masked Palm Civet</li> <li>16. <i>Cerynea discontenta</i></li> </ol> </li> </ul> <p><i>(Assessment of the rarity of the habitat itself was not given in the EcolIA)</i></p>
<b>Re-creatability</b>	Could be re-created given sufficient land area, although maturation of woodland would take a considerable period of time (60+ years). Some trees are of notably old age (Jim <i>et al.</i> 2020) and are thus difficult to replace.	<i>Can be re-created</i>
<b>Fragmentation</b>	Although patchy, it is well connected with adjacent habitats. It also forms a mosaic with the adjacent open turfgrass habitat. Between the wooded and open habitats there are no major physical barriers; wildlife have been sighted moving freely between these habitats. Therefore, there is no major fragmentation or isolation.	<i>Isolated in patches</i>
<b>Ecological linkage</b>	Ecologically linked with adjacent habitats including turfgrass, grassland/shrubland and plantation	<i>Connecting adjacent Woodland</i>
<b>Potential value</b>	Moderate value given that it could further attract wildlife use as eco-friendly management practices (such as enrichment planting) are in place	<i>Low</i>
<b>Nursery/breeding ground</b>	Potentially nesting ground for birds and nursery for Short-nosed Fruit Bats	<i>No significant record</i>
<b>Age</b>	At least 50 years judging from historic aerial photographs although some trees are significantly older with an estimated age of over 100 years (Jim <i>et al.</i> 2020)	<i>Not applicable</i>
<b>Abundance/Richness of wildlife</b>	Moderate for moths, birds and butterflies; low to moderate for other faunal groups	<i>Moderate abundance of bird and butterfly; low to moderate abundance of odonate, herpetofauna and mammal</i>
<b>Ecological value</b>	<b>Moderate</b>	<i>Low to medium</i>

**Table 3. Alternative evaluation for swampy woodland within Project Site**

Criteria	Swampy Woodland (*only present in the Assessment Area)	
	Evaluation by AEC	Evaluation in the EcolIA (Table 9.16)
Naturalness	A natural remnant of a once-widespread habitat.	<i>Largely natural</i>
Size	1.4 ha	<i>1.4 ha</i>
Diversity	Moderate diversity of flora and fauna	<i>Low diversity of flora and fauna</i>
Rarity	<p>Unique in Hong Kong and exceptional in national, regional and global contexts as it supports 10 – 30% of the global number of mature individuals of the Critically Endangered Chinese Swamp Cypress <i>Glyptostrobus pensilis</i>. 38 mature trees are present out of a Global population of 100-250. At least 50 seedlings have been recorded in this woodland.</p> <ul style="list-style-type: none"> <li><b>6</b> flora species of conservation importance: <ol style="list-style-type: none"> <li><i>Aquilaria sinensis</i></li> <li><i>Ardisia villosa</i></li> <li><i>Aristolochia tagala</i></li> <li><i>Glyptostrobus pensilis</i></li> <li><i>Gnetum luofuense</i></li> <li><i>Cibotium barometz</i></li> </ol> </li> <li><b>11</b> fauna species of conservation importance: <ol style="list-style-type: none"> <li>Pallas's Squirrel</li> <li>Crested Goshawk</li> <li>Chinese Pond Heron</li> <li>Rufous-capped Babbler</li> <li>Reeves' Turtle</li> <li>Small Snakehead</li> <li>White-spotted Walking Catfish</li> <li>Forget-me-not</li> <li>Common Birdwing</li> <li>Common Rose</li> <li><i>Somanniathelphusa zanklon</i></li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li><b>4</b> flora species of conservation importance: <ol style="list-style-type: none"> <li><i>Aquilaria sinensis</i></li> <li><i>Aristolochia tagala</i></li> <li><i>Glyptostrobus pensilis</i></li> <li><i>Cibotium barometz</i></li> </ol> </li> <li><b>3</b> fauna species of conservation importance: <ol style="list-style-type: none"> <li>Rufous-capped Babbler</li> <li>Forget-me-not</li> <li>Common Rose</li> </ol> </li> </ul> <p><i>(Assessment of the rarity of the habitat itself was not given in the EcolIA)</i></p>
Re-creatability	Impossible to re-create due to the age of the habitat, the complex hydrology of the site (and habitat requirements of Chinese Swamp Cypress) and the lack of suitable alternative sites elsewhere.	<i>Difficult to re-create</i>
Fragmentation	Considered to be a relict of a historically more widespread habitat; small size and proximity to Fan Kam Road renders it sensitive to disturbance.	<i>Occurs as an isolated stand</i>
Ecological linkage	Ecologically and hydrologically linked to the marsh, stream and turf grass within its catchment.	<i>Hydrologically linked to Marsh</i>
Potential value	High potential value in terms of the long-term conservation of Chinese Swamp Cypress in both regional and global perspectives.	<i>Moderate, given suitable hydrology</i>
Nursery/ ground breeding	Seedlings of Chinese Swamp Cypress are present; highly significant given that very few trees of this species have been known to produce viable seed or to reproduce vegetatively, and seedlings of this species have been rarely found within its global core area of occupancy (Zhang and Fischer 2021). Other fauna species of conservation importance (e.g. Common Rose, Common Birdwing, <i>Somanniathelphusa zanklon</i> , Small Snakehead) also breed in this habitat.	<i>No significant record</i>
Age	Ancient in a Hong Kong context; the oldest individual is estimated to be over 211 years old.	<i>Over 100 years</i>
Abundance/ Richness of wildlife	Moderate diversity of terrestrial fauna	<i>Low abundance of terrestrial fauna</i>
Ecological value	<b>Very high</b>	<i>Medium to high (due to high conservation importance and old age of <i>Glyptostrobus pensilis</i>)</i>



**Table 4. Alternative evaluation for turfgrass within Project Site**

Criteria	Turfgrass within Project Site (Sub-areas 1-4)	
	Evaluation by AEC	Evaluation in the EcolIA (Table 9.17)
Naturalness	Open habitat covered in turf grasses managed for golf play. Subject to regular management (with eco-friendly practices) and human presence in the day-time, but is largely undisturbed at night.	<i>Man-made habitat</i>
Size	49.36 ha	<i>49.36 ha</i>
Diversity	Low floral diversity; moderate for bat diversity; low to moderate for other faunal groups	<i>Low diversity of flora, low to moderate diversity of fauna</i>
Rarity	<p>Turfgrass managed in an eco-friendly approach which is not uncommon in Hong Kong.</p> <ul style="list-style-type: none"> <li>• <b>2</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. Aquilaria sinensis</li> <li>2. Glyptostrobus pensilis</li> </ol> </li> <li>• <b>32</b> fauna species of conservation importance: <ol style="list-style-type: none"> <li>1. Chinese Pond Heron</li> <li>2. Eastern Cattle Egret</li> <li>3. Little Egret</li> <li>4. Crested Serpent Eagle</li> <li>5. Black Kite</li> <li>6. Eastern Buzzard</li> <li>7. Ryukyu Scops Owl</li> <li>8. Collared Crow</li> <li>9. Chinese Hwamei</li> <li>10. Chinese Horseshoe Bat</li> <li>11. Intermediate Horseshoe Bat</li> <li>12. Least Horseshoe Bat</li> <li>13. Himalayan Leaf-nosed Bat</li> <li>14. Rickett's Big-footed Myotis</li> <li>15. Chinese Myotis</li> <li>16. Chinese Noctule</li> <li>17. Japanese Pipistrelle</li> <li>18. Least Pipistrelle</li> <li>19. Chinese Pipistrelle</li> <li>20. Lesser Bamboo Bat</li> <li>21. Lesser Yellow Bat</li> <li>22. Lesser Bent-winged Bat</li> <li>23. Wrinkle-lipped Free-tailed Bat</li> <li>24. Metallic Cerulean</li> <li>25. Common Cerulean</li> <li>26. Swallowtail</li> <li>27. Common Rose</li> <li>28. Common Birdwing</li> <li>29. Scarlet Basker</li> <li>30. Common Rat Snake</li> <li>31. Chinese Mountain Snake</li> <li>32. Pallas's Squirrel</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>2</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. Aquilaria sinensis</li> <li>2. Glyptostrobus pensilis</li> </ol> </li> <li>• <b>16</b> fauna species of conservation importance: <ol style="list-style-type: none"> <li>1. Pallas's Squirrel</li> <li>2. Chinese Pond Heron</li> <li>3. Eastern Cattle Egret</li> <li>4. Little Egret</li> <li>5. Crested Serpent Eagle</li> <li>6. Black Kite</li> <li>7. Eastern Buzzard</li> <li>8. Ryukyu Scops-owl</li> <li>9. Collared Crow</li> <li>10. Chinese Hwamei</li> <li>11. Metallic Cerulean</li> <li>12. Common Cerulean</li> <li>13. Common Rose</li> <li>14. Common Birdwing</li> <li>15. Scarlet Basker</li> <li>16. Common Rat Snake</li> </ol> </li> </ul> <p><i>(Assessment of the rarity of the habitat itself was not given in the EcolIA)</i></p>
Re-creatability	Could be re-created given sufficient land area	<i>Easy to re-create</i>
Fragmentation	No significant fragmentation	<i>Occurs extensively within Fanling Golf Course</i>
Ecological linkage	Ecologically (and hydrologically) linked with adjacent habitats including secondary woodland, mixed woodland, plantation, ponds, marsh and swampy woodland	<i>Not functionally linked to habitats of conservation importance</i>
Potential value	Could further attract wildlife use as eco-friendly management practices are in place	<i>Low</i>
Nursery/breeding ground	Not known to be significant currently although area near waterbodies may provide nesting ground for Reeve's Turtles	<i>No significant record</i>
Age	Not applicable due to routine management	<i>N/A</i>
Abundance/ Richness of wildlife	Moderate for bats; low to moderate for other fauna groups	<i>Low to moderate abundance of bird and butterfly; low abundance of odonate, herpetofauna and mammal</i>
Ecological value	<b>Moderate given the low level of disturbances at night, its large size, and the diversity of species of conservation importance, in particular bats</b>	<i>Low, as most of the recorded species are associated to other habitats</i>

**Table 5. Alternative evaluation for turfgrass within Assessment Area**

Criteria	Turfgrass in 500m Assessment Area	
	Evaluation by AEC	Evaluation in the EcolIA (Table 9.17)
Naturalness	Open habitat covered in turf grasses managed for golf play. Subject to regular management (with eco-friendly practices) and human presence in the day-time, but is largely undisturbed at night.	<i>Man-made habitat</i>
Size	14.24 ha	<i>14.24 ha</i>
Diversity	Low floral diversity; moderate for bat diversity; low to moderate for other faunal groups	<i>Low diversity of flora, low to moderate diversity of fauna</i>
Rarity	<p>Turfgrass managed in an eco-friendly approach which is not uncommon in Hong Kong.</p> <ul style="list-style-type: none"> <li>• <b>1</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. Aquilaria sinensis</li> </ol> </li> <li>• <b>31</b> fauna species of conservation importance: <ol style="list-style-type: none"> <li>1. Pallas's Squirrel</li> <li>2. Himalayan Leaf-nosed Bat</li> <li>3. Chinese Noctule</li> <li>4. Japanese Pipistrelle</li> <li>5. Least Pipistrelle</li> <li>6. Lesser Bamboo Bat</li> <li>7. Lesser Yellow Bat</li> <li>8. Wrinkle-lipped Free-tailed Bat</li> <li>9. Short-nosed Fruit Bat</li> <li>10. Chinese Pond Heron</li> <li>11. Eastern Cattle Egret</li> <li>12. Crested Serpent Eagle</li> <li>13. Black Kite</li> <li>14. Eastern Buzzard</li> <li>15. Collared Crow</li> <li>16. Chinese Hwamei</li> <li>17. Common Rat Snake</li> <li>18. Many-banded Krait</li> <li>19. Metallic Cerulean</li> <li>20. Common Cerulean</li> <li>21. Tiny Grass Blue</li> <li>22. Chestnut Tiger</li> <li>23. Danaid Egg-fly</li> <li>24. Common Rose</li> <li>25. Swallowtail</li> <li>26. Golden Birdwing</li> <li>27. Common Birdwing</li> <li>28. Comma</li> <li>29. Small Cabbage White</li> <li>30. Dark Blue Tiger</li> <li>31. Scarlet Basker</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>1</b> flora species of conservation importance: <ol style="list-style-type: none"> <li>1. Aquilaria sinensis</li> </ol> </li> <li>• <b>13</b> fauna species of conservation importance: <ol style="list-style-type: none"> <li>1. Pallas's Squirrel</li> <li>2. Chinese Pond Heron</li> <li>3. Eastern Cattle Egret</li> <li>4. Crested Serpent Eagle</li> <li>5. Black Kite</li> <li>6. Eastern Buzzard</li> <li>7. Collared Crow</li> <li>8. Chinese Hwamei</li> <li>9. Metallic Cerulean</li> <li>10. Common Cerulean</li> <li>11. Common Rose</li> <li>12. Common Birdwing</li> <li>13. Scarlet Basker</li> </ol> </li> </ul> <p><i>(Assessment of the rarity of the habitat itself was not given in the EcolIA)</i></p>
Re-creatability	Could be re-created given sufficient land area	<i>Easy to re-create</i>
Fragmentation	Some minor fragmentation	<i>Occurs extensively within Fanling Golf Course</i>
Ecological linkage	Ecologically (and hydrologically) linked with adjacent habitats including secondary woodland, mixed woodland, plantation, ponds, marsh and swampy woodland	<i>Not functionally linked to habitats of conservation importance</i>
Potential value	Could further attract wildlife use as eco-friendly management practices are in place	<i>Low</i>
Nursery/breeding ground	Not known to be significant currently, although turf area near waterbodies may provide nesting ground for Reeve's Turtles	<i>No significant record</i>
Age	Not applicable	<i>N/A</i>
Abundance/ Richness of wildlife	Low to moderate	<i>Low to moderate abundance of bird and butterfly; low abundance of odonate, herpetofauna and mammal</i>
Ecological Value	<b>Moderate given the low level of disturbances at night, its large size, and the diversity of species of conservation importance</b>	<i>Low, as most of the recorded species are associated to other habitats</i>

**Table 6. Alternative evaluation for Sub-area 1 as a whole**

Criteria	Sub-area 1	
	Evaluation by AEC	Evaluation in the EcolIA (Table 9.20)
<b>Naturalness</b>	A mosaic of managed artificial habitats (turf and developed area) and semi-natural habitats (woodland and mixed woodland) with little disturbance. Low to moderate human disturbances in day-time and virtually no disturbance in night-time	<i>Although the dominant species Cratogeomys cochinchinense seems to be artificially planted a long time ago but also considered as natural with other native species; the mixed woodland is mixed with exotic and native plant species; while turfgrass and developed area are man-made</i>
<b>Size</b>	Woodland: 0.39 ha; Mixed woodland: 3.72ha; Turfgrass: 5.07ha; Developed area: 1.82ha	<i>Woodland: 0.39 ha; Mixed woodland: 3.72ha; Turfgrass: 5.07ha; Developed area: 1.82ha</i>
<b>Diversity</b>	Moderate diversity for bats and moths; low to moderate diversity to other flora and fauna.	<i>Low to moderate diversity of flora and low diversity of fauna</i>
<b>Rarity</b>	<p>This mosaic of open and closed/semi-closed habitat is rare in a Hong Kong's context. Turfgrass managed in an eco-friendly approach, and swampy woodland are also not common in Hong Kong</p> <ul style="list-style-type: none"> <li>• <b>4</b> flora species of conservation importance:                             <ol style="list-style-type: none"> <li>1. Aquilaria sinensis</li> <li>2. Ardisia villosa</li> <li>3. Geodorum densiflorum</li> <li>4. Ilex graciliflora</li> </ol> </li> <li>• <b>38</b> fauna species of conservation importance:                             <ol style="list-style-type: none"> <li>1. Chinese Horseshoe Bat</li> <li>2. Intermediate Horseshoe Bat</li> <li>3. Least Horseshoe Bat</li> <li>4. Himalayan Leaf-nosed Bat</li> <li>5. Rickett's Big-footed Myotis</li> <li>6. Chinese Noctule</li> <li>7. Japanese Pipistrelle</li> <li>8. Least Pipistrelle</li> <li>9. Chinese Pipistrelle</li> <li>10. Lesser Bamboo Bat</li> <li>11. Lesser Yellow Bat</li> <li>12. Lesser Bent-winged Bat</li> <li>13. Short-nosed Fruit Bat</li> <li>14. Pallas's Squirrel</li> <li>15. Masked Palm Civet</li> <li>16. Chinese Pond Heron</li> <li>17. Eastern Cattle Egret</li> <li>18. Besra</li> <li>19. Black Kite</li> <li>20. White-throated Kingfisher</li> <li>21. Grey-chinned Minivet</li> <li>22. Collared Crow</li> <li>23. Rufous-capped Babbler</li> <li>24. Common Wolf Snake</li> <li>25. Scarlet Basker</li> <li>26. <i>Stereodytis acutidens</i></li> <li>27. <i>Athetis hongkongensis</i></li> <li>28. <i>Anatrachyntis sp. B</i></li> <li>29. <i>Acidon evae</i></li> <li>30. <i>Drachmobola sp. A</i></li> <li>31. <i>Scaeosopha sp. A</i></li> <li>32. <i>Lysimelia lucida</i></li> <li>33. <i>Scopula sp. C</i></li> <li>34. <i>Spodoptera pectinicornis</i></li> <li>35. <i>Kophene sp. A nr. cuprea</i></li> <li>36. <i>Epimactis talantias</i></li> <li>37. <i>Bosara emarginaria</i></li> <li>38. <i>Phaecasiophora cornigera</i></li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>4</b> flora species of conservation importance:                             <ol style="list-style-type: none"> <li>1. <i>Aquilaria sinensis</i> (~ 38 ind.)</li> <li>2. <i>Ardisia villosa</i> (~ 25 ind.)</li> <li>3. <i>Geodorum densiflorum</i> (~32 ind.)</li> <li>4. <i>Ilex graciliflora</i> (~1 ind.)</li> </ol> </li> <li>• <b>4</b> fauna species of conservation importance:                             <ol style="list-style-type: none"> <li>1. Chinese Pond Heron</li> <li>2. Crested Serpent Eagle</li> <li>3. Japanese Pipistrelle</li> <li>4. Scarlet Basker</li> </ol> </li> </ul> <p><i>(Assessment of the rarity of the habitat itself was not given in the EcolIA)</i></p>
<b>Re-creatability</b>	Could be re-created given sufficient land area; although woodland habitats re-created would take considerable time to reach the current level of maturity.	<i>Woodland habitats can be recreated but would take time</i>
<b>Fragmentation</b>	Although the wooded areas occur as distinct stands, they form a mosaic with the adjacent open turfgrass habitat. Between the two types of habitats, there are no major physical barriers; wildlife have been sighted moving freely between these habitats. Therefore, it is not considered that any habitats within sub-area 1 is not significantly fragmented.	<i>The woodland is fragmented and the mixed woodland mostly form a thin belt</i>



Criteria	Sub-area 1	
	Evaluation by AEC	Evaluation in the EcolIA (Table 9.20)
Ecological linkage	Good ecological linkage to sub-area 2; some linkages to the golf course area west of Fan Kam Road and to the adjacent rural areas at Ping Kong	<i>Only the southern end is functionally linked to the habitats of Sub-Area 2</i>
Potential value	Good potential for enrichment planting in the wooded areas as well as other ecological management	<i>Low, due to surrounded by developed area</i>
Nursery/breeding ground	Not known to be significant	<i>No significant record</i>
Age	Old in the Hong Kong context (over 100 years)	<i>N/A</i>
Abundance/ Richness of wildlife	Moderate abundance for bats; low to moderate for other flora and fauna	<i>Low abundance of terrestrial fauna</i>
Ecological Value	<b>Moderate</b>	<i>Low to medium</i>

– END OF ANNEX 2 –

### **Appendix 3.7 - FGC's Environmental Oversight Committee ("EOC") and FGC's Certification for Audubon Cooperative Sanctuary Program for Golf ("ACSP") Certification**

The purpose of FGC's EOC is to oversee FGC's environmental and sustainability efforts, which includes the management of the rich ecology assets found at FGC, community outreach and habitat creation. These efforts have seen FGC recognised as one of the world's most environmentally friendly golf courses (HKGC has been nominated as "World's Best Eco Friendly Golf Facility" by the World Golf Awards every year since 2020).

The EOC was set up as a requirement of the ACSP, an environmental education and certification programme that helps golf courses protect the environment, preserve the natural heritage of the game of golf, promote environmental sustainability and gain recognition for their efforts. Through collaborative efforts with the United States Golf Association since 1991, membership in the ACSP has steadily grown to include approximately 2,000 golf courses in the United States and three dozen countries worldwide.

The "plan-do-check-act" approach of the ACSP mirrors that of the other environmental management systems, but also includes certification, which the FGC applied for in 2016 and was awarded in 2020, as an incentive and reward for positive environmental actions and results.

Only around 2% of the world's golf courses have this 'environmentally-friendly' certification.

The ACSP assists each golf course member to determine its environmental resources and any potential liabilities, and then develop a plan that fits its unique setting, goals, staff, budget, and schedule. Audubon International provides information and guidance to help golf course personnel with six key environmental components:

- Site Assessment/Environmental Planning
- Wildlife and Habitat Management
- Chemical Use Reduction and Safety
- Water Conservation
- Water Quality Management
- Outreach and Education

FGC's designation as a Certified Audubon Cooperative Sanctuary was awarded upon meeting the environmental management standards in each area. FGC's achievement of certification demonstrates its leadership, commitment, and high standards of environmental management.

Certification also provides an efficient way for FGC to work directly in relation to our unique property while also providing guidance and motivation to take action on key environmental components and promote environmental sustainability.

FGC has developed and implemented an environmental management plan and documented the results.

Recertification is required every three years to maintain the Certified Sanctuary designation.

**Review of the Ecological Impact Assessment in the published EIA Report for the  
Technical Study on Partial Development of Fanling Golf Course Site**

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The EOC has an independent Chairperson which includes the FGC personnel, FGC members, non-members and international technical environmental experts and consultants.



## Appendix 3.8 - FANLING GOLF COURSE PRELIMINARY INSECT SURVEY RESULTS BY HONG KONG UNIVERSITY

### Fanling Golf Course Preliminary Insect Survey Results

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#### **Summary**

A rapid insect survey focusing on four groups: ants, beetles (Ambrosia beetles), mosquitoes and non-ant Aculeata was performed at 2 sites of the Fanling Golf Course in late May 2022. Despite the limited sampling and the early period in the season, 83 species have been collected in total, with ants and beetles representing the most diverse groups with 48 and 22 species respectively. As the survey was conducted recently, a number of specimens remains to be identified and as a result, the expected number of species presented here represents an underestimation. Nonetheless, among the species identified, several represented rarely collected species, new records for Hong Kong, or even new species for science. Without doubt, with further sampling considering spatial, temporal, and ecological components, many additional records of insects over the area currently covered by the Fanling Golf Course are expected to be added.

#### **Introduction**

As part of the Environment and Conservation Fund (ECF) funded project ‘*Where the bad things are? Distribution modelling of exotic insect species and identification of hotspots of invasions in Hong Kong*’ (hereby known as the Exotic Species Project (ESP)), members of the Insect Biodiversity and Biogeography Laboratory (IBBL) from the School of Biological Sciences of The University of Hong Kong included a survey of the Fanling Golf Course to help supplement their independent environmental impact assessment (EIA) of the proposed development of the golf course south east of Fan Kam Road.

The ESP focuses on selected invertebrate groups that include ants (Hymenoptera; Formicidae), non-ant Aculeates (Hymenoptera), ambrosia beetles (Coleoptera; Scolytinae) and mosquitos (Diptera; Culicidae). Other invertebrate groups are a focus for the ESP but are not included in this report either due to the lack of processing time or that data has already been collected from site (e.g. moths).

#### Key term definitions

Native – species thought to be native to Hong Kong and its surrounding regions.

Exotic – species not native to Hong Kong and surrounding regions.

Tramp – species native to Hong Kong and surrounding regions but known to be established in other biogeographic regions.

In order to integrate records between both independent EIA and ESP, a near-identical sampling protocol was implemented. Records of both tramp and exotic invertebrate species for the ESP were obtained as well as native species for the Fanling Golf Course EIA.

## **Survey methodology**

A variety of survey methods was conducted in order to collect targeted invertebrate groups. Collection methods obtained specimens across targeted groups, with particular methods collecting more specimens of certain groups than others (Table 1). In addition to the standardised methods used by the ESP, pitfall traps and the BG sentinel traps were also deployed in order to increase the number of records.

**Table 1.** Sampling methods and target groups which each method collects.

Methods	Ants	Aculeate Hym.	Ambrosia Beetles	Mosquitos
Malaise traps	✓	✓	✓	✓
Winkler Extractor	✓		✓	
Pitfall traps	✓		✓	
Vane trap	✓	✓	✓	
Bait traps	✓			
Ovitrap				✓
BG Sentinel			✓	✓
Hand Collection	✓	✓		

### **Sampling duration**

Sampling took place on the 23<sup>rd</sup>, 25<sup>th</sup>, and 30<sup>th</sup> of May 2022. The majority of sampling methods were carried out on the 23<sup>rd</sup>, with traps collected on the 25<sup>th</sup> and 30<sup>th</sup>. Heavy rain stopped the collection of Site 2 traps until 30<sup>th</sup> (Table 2).

### **Equipment description**

#### **Malaise (Figure 1F)**

Flying insects are stopped by the mesh during their flight, then involuntarily guided to an ethanol bottle in which they fall and are collected.

#### **Winkler/Leaf litter (Figures C & D)**

There are two 50 metres transects per site, with a 50cm x 50cm of leaf litter taken every 10m. Litter is sifted using a two-handle sifter with a 5cm square mesh. The resulting filtrate is dried using a Winkler extractor where invertebrates are extracted. Specimens are then sorted in the laboratory using microscopes.

### Pitfall

There are two square grids per site, with each pitfall placed approximately 5m apart. A cup is placed into a hole and filled halfway with ethanol and a flag is placed next to the pitfall. Specimens fall into pitfall. Specimens are then sorted out of dirt/soil and identified in the laboratory.

### Vane trap (Figure G)

This trap works similarly to inception traps and utilises the tendencies for beetles to drop upon collision with objects. Two planes of clear plastic glass are slotted together so they are perpendicular to one another. They are attached to a roof to reduce water accumulation and serve as a funnel which is attached to a collection tube of ethanol. They are hung on tree branches, ideally adjacent to rotting wood or wood with obvious insect damage.

### Bait traps (Figure A)

There are two line transects per site. A small section of honey-covered sausage is pinned to a piece of plastic. They are left for 2 hours, with attracted ants collected on return.

### Ovitrap (Figure E)

A plastic container is filled with water and attached to a tree. Mosquitos are attracted to the water source and will lay their eggs into the water. Larvae are collected upon return and reared in the lab, where they will be identified.

### BG Sentinel (Figure B)

BG Sentinel Pro is a fan trap with dry ice (CO<sub>2</sub>) and an octanal essence lure. Mosquitoes are attracted by the lure and get trapped by a fan into a net inside the trap. Other insects aside of mosquitoes can also be attracted by the lure and collected in the trap (e.g. moths, beetles and flies).

### Hand collection

Specimens were collected opportunistically when encountered.

For all traps and hand collected specimens, latitude, longitude and elevation was taken either in the field using a handheld GPS system or post field work using Google Earth. To follow ESP protocol, ground temperature data was collected for Winkler/leaf litter and bait samples.

**Table 2.** Sample method duration and number of traps. OD = On day

Methods	Duration (days)		Number (#)		
	Site 1	Site 2	Site 1	Site 2	Total
Malaise	5	7	1	1	2
Winkler	OD; 7 day extraction	OD; 7 day extraction	10	10	20
Pitfall	2	2	10	10	20
Vane	5	7	2	2	4



Bait traps	OD; 2 hours	OD; 2 hours	10	10	20
Ovitrap	5	7	3	3	6
BG Sentinel	2	2	1	1	2
Hand Coll.	OD	OD	n/a	n/a	n/a

### Specimen sorting and identification

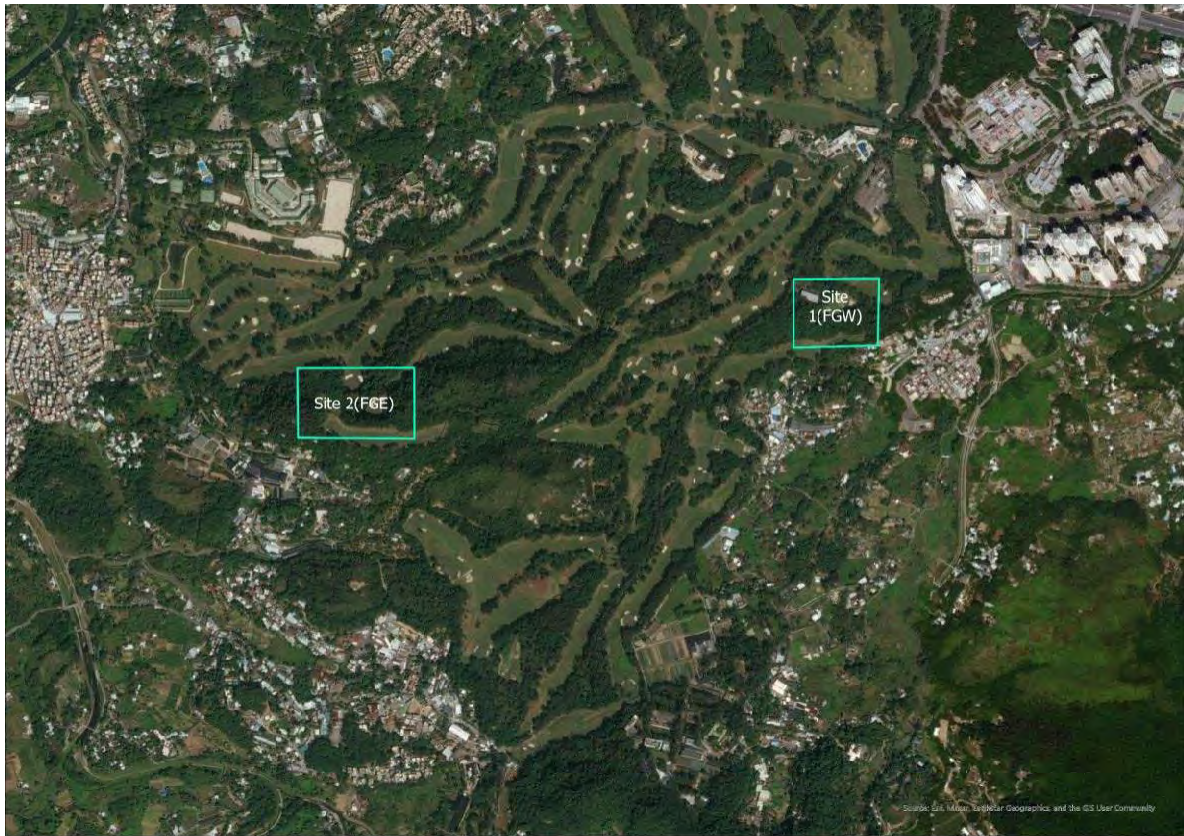
Specimens across all target taxa were sorted to morphospecies per trap, with the number of individual morphospecies counted (other than for bait traps). Morphospecies were subsequently identified to species using dissecting stereomicroscopes, dichotomous keys, comparison to voucher specimens, and specimen photographs online deemed trustworthy. Images of ambrosia beetle specimens which are hard to be determined were sent to taxonomists for identification. For ants, only worker specimens were incorporated into the final report.

### Sampling localities

Two localities were chosen for sampling, which is each side of Fang Kam Road (Figure 2). Each site was surveyed using identical surveying techniques (Figure 3), differing only in the duration of traps deployment due to heavy rain (Table 2).



**Figure 1.** Sampling methods, A: bait traps; B: BG Sentinel; C: leaf litter gathering; D: leaf litter extraction using Winklers; E: ovitrap; F: malaise trap; G: vane trap.



**Figure 2.** Survey site localities within the Fanling Golf Course.





Figure 3. Site 1 and Site 2 with localities of each sample, transects and traps.



## **Results**

A total of 83 species was recorded for both Sites 1 and 2 across all targeted groups. Overall, both sites presented rather similar species richness (Table 3), but with some variation observed between taxa.

**Table 3.** The number of species by each site, all sites and by target group.

Target group	Site 1	Site 2	Total
Ants	25	36	48
Mosquitos	6	5	6
Ambrosia beetles	12	17	22
Aculeata	10	1	7
Total	53	59	83

### Ants (Formicidae)

A total of 1019 ant specimens was collected, comprising 7 subfamilies, 29 genera and 48 ant species. The most abundant subfamilies were Myrmicinae (26 species), followed by Formicinae (10 species) and Ponerinae (6 species). Site 2 (36 species) was more diverse than Site 1 (25 species). The similar pattern was found in genera with 24 genera compared to 16 genera for Site 2 and Site 1 respectively.

The most successful trapping method in terms of highest species richness was leaf litter (25 species), followed by pitfall traps (23) and bait traps (17) (Table 4). Hand collection, malaise and vane traps collected 4, 2 and 1 species respectively (Table 3).

In terms of exotic and tramp species, Site 1 had more exotic (3) but fewer tramp species (3) as opposed to Site 2 with 2 exotic species and 4 tramp species respectively (Table 5). Only *Brachyponera obscurans* (tramp), *Nylanderia* sp. nr. *vididula* (tramp) and *Nylanderia* sp. nr. *bourbonica* (exotic) were shared between sites (Table 6, Table 7).

### Notable ant species collected

*Temnothorax* sp. new (Figure 4A): This is a new species of *Temnothorax* for science that is yet to be described. Few records (<10) of this species have been made by current IBBL members and is seemingly rare or at least infrequently collected. The record from this Fanling Golf Course was from Site 2 (Table 6). The presence of this species in Hong Kong is important as it represents one of the southernmost species record for this genus within Asia, as species of *Temnothorax* are mainly found in cooler, more temperate regions.

*Probolomyrmex* sp. nr. *vieti* (Figure 4B): It is a notoriously rare genus worldwide. In Hong Kong, IBBL members had significantly more success in collecting this genus than colleagues overseas (unpublished data). Nevertheless, this genus is not frequently

encountered relative to other genera. *Probolomyrmex* sp. nr. *vieti* seems to be more collected in disturbed sites in comparison to the only other member of the species, *P. watanabei*, that has been collected in less disturbed habitats. The record from Fanling Golf Course was from Site 1 (Table 7).

*Proceratium* sp. nr. *bruelheidei* (Figure 4C): According to the lack of records from previous IBBL lab samplings, this is a rarely collected species in Hong Kong. Little is known of its natural history. However the species likely requires at least some leaf litter accumulation in order to survive. The record from Fanling Golf Course was from Site 1 (Table 6).

**Table 4.** A breakdown of the number of ant species collected per site by trapping method.

Trap type	Site 1	Site 2	Total
Bait trap	8	11	17
Hand coll.	1	3	4
Malaise	1	2	2
Pitfalls	14	18	23
Vane	0	1	1
Winkler	15	11	25
Total	25	36	48

**Table 5.** The number of exotic, tramp and native species by site.

Status	Site 1	Site 2
Exotic	3	2
Tramp	3	4
Native	20	31
Total	25	36

**Table 6.** Taxonomic information and recorded site for each exotic and tramp species.

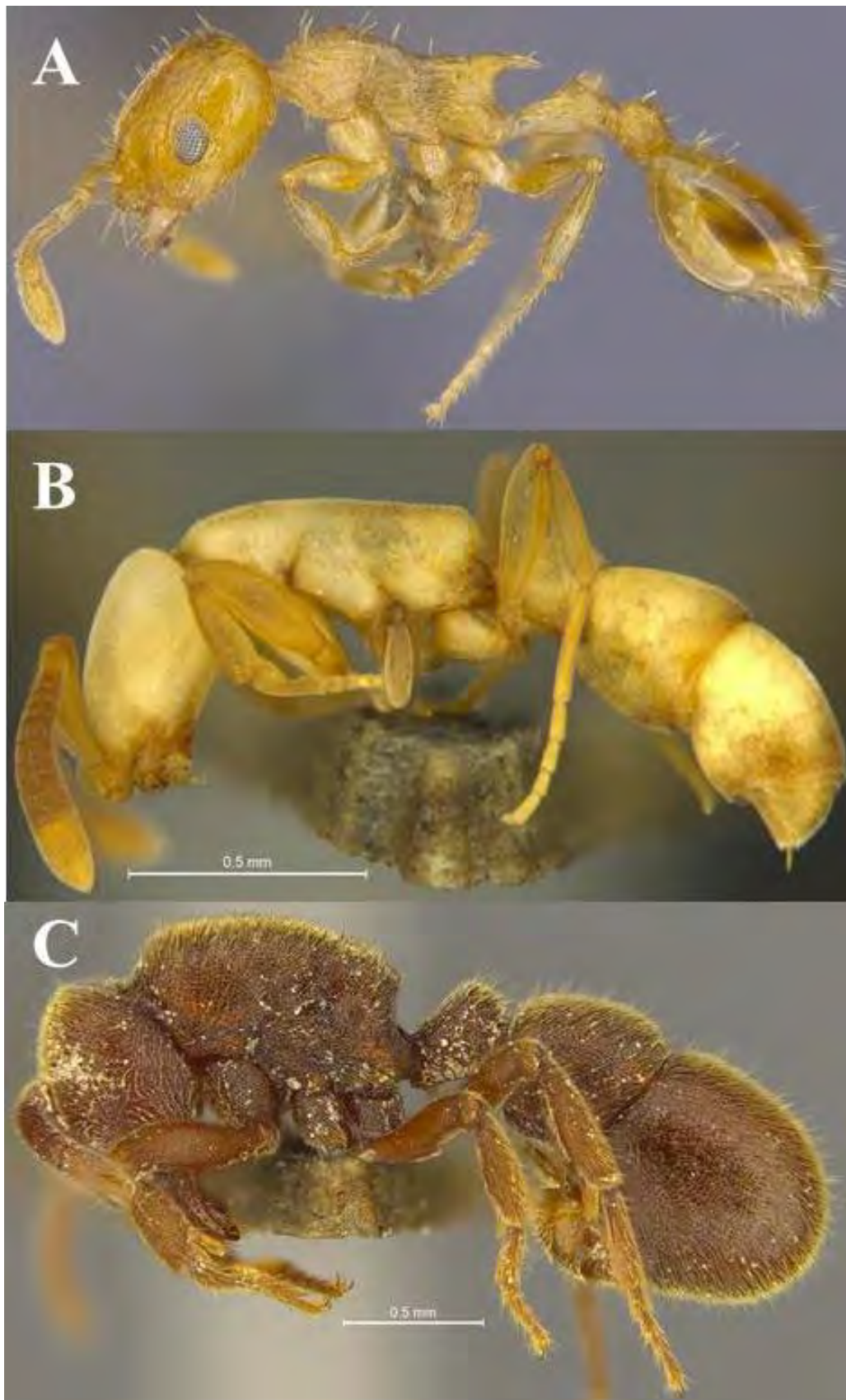
Species	Site 1	Site 2
<b>Exotic</b>		
<i>Nylanderia</i> nr. <i>vividula</i>	✓	✓
<i>Ooceraea</i> <i>biroi</i>	✓	
<i>Paratrechina</i> <i>longicornis</i>	✓	

Review of the Ecological Impact Assessment in the published EIA Report for the  
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<i>Tetramorium lanuginosum</i>		✓
<b>Tramp</b>		
<i>Brachyponera obscurans</i>	✓	✓
<i>Cardiocondyla wroughtonii</i>		✓
<i>Monomorium floricola</i>	✓	
<i>Nylanderia nr. bourbonica</i>	✓	✓
<i>Tetramorium kraepelini</i>		✓





**Figure 4.** Interesting ant specimen images. A: *Temnothorax* sp. New lateral view, B: *Probolomyrmex* sp.nr. *vietii* lateral view, C: *Proceratium* sp. nr. *bruelheidei* lateral view.

**Table 7.** Checklist of ant species by site and collection site.

	Site 1					Site 2					
	Bait	Hand coll.	Malaise	Pitfall	Winkler	Bait	Hand coll.	Malaise	Pitfall	Vane	Winkler
<b>Dolichoderinae</b>											
<i>Dolichoderus sibericus</i>									✓		
<i>Tapinoma indicum</i>	✓				✓	✓					
<b>Dorylinae</b>											
<i>Ooceraea biroi</i>					✓						
<b>Formicinae</b>											
<i>Camponotus nicobarensis</i>						✓					
<i>Gesomyrmex howardi</i>		✓									
<i>Nylanderia</i> sp. nr. <i>bourbonica</i>	✓			✓					✓		✓
<i>Nylanderia</i> sp. nr. <i>vididula</i>	✓			✓	✓				✓		
<i>Nylanderia</i> sp. 4 BG				✓	✓				✓		
<i>Paraparatrechina sauteri</i>									✓		
<i>Paraparatrechina</i> sp. 1 BG									✓		✓
<i>Paratrechina longicornis</i>					✓	✓					
<i>Polyrhachis demangei</i>							✓				
<i>Polyrhachis illaudata</i>						✓			✓		
<b>Myrmicinae</b>											
<i>Cardiocondyla wroughtonii</i>						✓					
<i>Carebara (Oligomyrmex)</i> sp. 3 BG					✓						
<i>Carebara (Oligomyrmex) wheeleri</i>				✓							
<i>Carebara (Pheidologeton)</i> sp. cf. <i>affinis</i>											✓
<i>Carebara (Pheidologeton)</i> cf. sp.1				✓					✓		
<i>Carebara (Pheidologeton) diversa</i>					✓						
<i>Crematogaster</i> sp. nr. <i>aberrans</i>								✓			
<i>Crematogaster</i> sp. nr. <i>rogenhoferi</i>	✓		✓	✓				✓			
<i>Mayriella transfuga</i>											✓
<i>Monomorium floricola</i>	✓										
<i>Monomorium</i> sp. psw-cn01					✓	✓					
<i>Pheidole hongkongensis</i>	✓			✓	✓				✓		
<i>Pheidole megacephala</i>									✓		

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	Site 1					Site 2					
	Bait	Hand coll.	Malaise	Pitfall	Winkler	Bait	Hand coll.	Malaise	Pitfall	Vane	Winkler
<i>Pheidole peili</i>	✓			✓	✓	✓			✓		
<i>Pheidole taipoana</i>			✓								
<i>Pheidole</i> sp. <i>tumida/noda/nodifera</i>	✓		✓		✓						
<i>Recurvidris recurvispinosa</i>										✓	
<i>Solenopsis jacoti</i>			✓								
<i>Solenopsis</i> sp. <i>psw-cn01</i>										✓	
<i>Strumigenys exilirhina</i>					✓						
<i>Tetramorium kraepelini</i>										✓	
<i>Tetramorium lanuginosum</i>				✓				✓		✓	
<i>Tetramorium parvispinum</i>			✓					✓			
<i>Tetramorium</i> sp. 1BG ( <i>obesum</i> group)								✓		✓	
<i>Tetramorium wroughtonii</i>				✓							
<b>Ponerinae</b>											
<i>Brachyponera obscurans</i>			✓		✓			✓		✓	
<i>Diacamma</i> sp.								✓			
<i>Euponera sharpii</i>										✓	
<i>Leptogenys peuqueti</i>								✓			
<i>Odonotoponera denticulata</i>			✓	✓			✓	✓			
<i>Pseudoneoponera rufipes</i>										✓	
<b>Proceratiinae</b>											
<i>Probolomyrmex</i> sp. nr. <i>vieti</i>					✓						
<i>Proceratium</i> sp. nr. <i>bruelheidei</i>					✓						
<b>Pseudomyrmecinae</b>											
<i>Tetraoponera microcarpa</i>							✓				



## Ambrosia beetles (Curculionidae; Scolytinae)

A total of 324 individual ambrosia beetles was collected across all sampling methods, comprising 4 Scolytinae tribes, 8 genera, and approximately 22 species (Table 10). Taxonomic resolution was low for some genera difficult to be identified (e.g. *Cryphalus*).

The most successful trapping system was vane traps, totalling 289 individuals of 18 species, with pitfall trapping, Winkler and BG sentinel collecting 7, 3 and 1 species respectively (Table 8). Vane trapping collected considerably more Xyleborini species (13) compared to other trapping methods.

Site 2 (17 species) had 5 more species compared to Site 1 (12 species), with Site 2 having 1 extra Scolytinae tribe (Hyorrhynchini). Site 1 (6 species) had half as many tramp species as Site 2 (12 species), but the only exotic ambrosia species collected in this survey was from Site 1 (*Hypothenemus javanus*) (Table 9).

### Interesting records

*Hypothenemus* sp. Unknown: a currently unknown species which was not immediately recognizable by our taxonomist collaborator, even with some distinctive morphological characters. This is potentially a new species to Science yet to be described.

*Microperus alpha*: represents a new record for Hong Kong based on the lack of Hong Kong records in Smith *et al.*, (2020), and the first record from the Eastern part of Mainland China, with previous records known only from Guizhou and Yunnan.

*Xyleborinus* sp. cf. *subgranulatus*: new record for Hong Kong (if identification is correct) based on the lack of Hong Kong records in Smith *et al.*, (2020). This will need to be double-checked in person by taxonomist collaborator. If confirmed, this will represent the first record from the Eastern part of Mainland China, with previous records known only from Yunnan.

*Sueus niisimai*: This is a new tribe for the ESP (i.e. not yet collected by investigators) and potentially a new record for Hong Kong according to immediate literature. However this was expected considering its apparently high abundance in Mainland China.

**Table 8.** A breakdown of the number of ambrosia species collected per site by trapping method.

Trap type	Site 1	Site 2	Grand Total
BG Sentinel	1	0	1
Pitfall	2	7	7
Vane	9	15	18
Winkler	1	2	3
Grand Total	12	17	22

**Table 9.** Taxonomic information and recorded site for each tramp ambrosia species. Only one exoticspecies was recorded (*Hypothenemus javanus*) from Site 1.

Species	Site 1	Site 2
<b>Cryphalini</b>		
<i>Hypothenemus eruditus complex</i>	✓	✓
<b>Dryocoetini</b>		
<i>Coccotrypes sp. cf. cyperi</i>	✓	✓
<b>Hyorrhynchini</b>		
<i>Sueus niisimai</i>		✓
<b>Xyleborini</b>		
<i>Diuncus haberkorni</i>	✓	✓
<i>Euwallacea fornicatus complex</i>		✓
<i>Xyleborinus andrewesi</i>	✓	✓
<i>Xyleborinus sp. cf. artestriatus</i>		✓
<i>Xyleborus sp. cf. perforans</i>		✓
<i>Xylosandrus compactus</i>		✓
<i>Xylosandrus crassiusculus</i>	✓	✓
<i>Xylosandrus discolor</i>		✓
<i>Xylosandrus mancus</i>	✓	✓
Grand Total	6	12

**Table 10.** Checklist of ambrosia species by site and collection site.

Species	Site 1				Site 2		
	BG Sentinel	Pitfall	Vane	Winkler	Pitfall	Vane	Winkler
<b>Cryphalini</b>							
<i>Cryphalus</i> sp.			✓		✓	✓	
<i>Hypothenemus eruditus</i> complex			✓			✓	✓
<i>Hypothenemus javanus</i>			✓				
<i>Hypothenemus</i> sp.			✓				
<i>Hypothenemus</i> sp. unknown				✓			
<b>Dryocoetini</b>							
<i>Coccotrypes</i> sp. cf. <i>cyperi</i>		✓			✓		
<i>Coccotrypes</i> sp.1					✓		
<b>Hyorrhynchini</b>							
<i>Sueus niisimai</i>						✓	
<b>Xyleborini</b>							
<i>Ambrosiodmus</i> sp.	✓						
<i>Cnestus aterrimus</i>						✓	✓
<i>Diuncus haberkorni</i>			✓			✓	
<i>Euwallacea fornicatus</i> complex						✓	
<i>Microperus alpha</i>						✓	
<i>Xyleborinus andrewesi</i>			✓			✓	
<i>Xyleborinus</i> sp. cf. <i>artestriatus</i>						✓	
<i>Xyleborinus</i> sp. cf. <i>subgranulatus</i>			✓				
<i>Xyleborus</i> sp. cf. <i>perforans</i>					✓	✓	
<i>Xylosandrus</i> sp. cf. <i>eupatorii</i>						✓	
<i>Xylosandrus compactus</i>					✓	✓	
<i>Xylosandrus crassiusculus</i>		✓	✓		✓	✓	
<i>Xylosandrus discolor</i>						✓	
<i>Xylosandrus mancus</i>			✓		✓	✓	



## Mosquitoes (Culicidae)

A total of 163 specimens was collected comprising 2 subfamilies, 4 genera and 6 species (Table 11). Species richness for both sites was similar with only one species not overlapping between the two sites (*Culex* sp. cf. *fuscans*) in Site 1 (Table 11).

The most successful trapping method was BG Sentinel with 152 specimens compared to 11 from ovitrap. Site 2 has slightly more specimens, however there is not significant difference to consider different species patterns between the two sites.

In terms of ecology, in both sites, mosquito species who naturally predate (*Toxorhynchites splendens* and *Culex* sp. cf. *fuscans*) on other mosquito species' larvae (i.e. *Aedes albopictus*, *Aedes vexans*, *Armigeres subalbatus*) are found. These species provide natural control to pest mosquito species populations.

**Table 11.** Checklist and number of specimens of Culicidae species collected by site and collection method, alongside native and tramp status per species.

	Site 1		Site 2		Status
	BG Sentinel	Ovitrap	BG Sentinel	Ovitrap	
<i>Aedes albopictus</i>	49	6	57	2	Tramp
<i>Aedes vexans</i>	12	-	6	-	Native
<i>Armigeres subalbatus</i>	11	-	7	-	Tramp
<i>Culex (Lutzia) cf. fuscans</i>	1	-	-	-	Native
<i>Culex sp1 cf. malayi</i>	2	-	6	-	Native
<i>Toxorhynchites splendens</i>	-	1	1	2	Tramp
Total	75	7	77	4	

## Non-ant Aculeates

A total of 13 specimens was collected (8 by malaise trap, 2 by vane and 3 by hand collecting), 4 families, 7 subfamilies, 7 genera and 7 species (Table 12). The number of specimens and species richness of non-ant Aculeata is greater in Site 1 compared to Site 2 with 10 and 1 species respectively.

**Table 12.** A checklist and number of specimens of non-ant aculeate species collected by site and collection method, alongside native and tramp status per species.

	Site 1			Site 2		Status
	Malaise	Vane	Hand coll.	Malaise	Hand coll.	
<b>Apidae</b>						
<i>Apis cerana</i>	1	-	-	-	-	Tramp
<b>Halictidae</b>						
<i>Nomia penangensis</i>	-	2	-	-	-	Native
<b>Scoliidae</b>						
<i>Parabatozonus</i> sp. nr. <i>maculifrons</i>	2	-	-	-	-	Native
<i>Phalerimeris phalerata</i>	3	-	-	-	1	Native
<b>Vespidae</b>						
<i>Parancistrocerus</i> <i>hongkongensis</i>	1	-	-	-	-	Native
<i>Parapolybia nodosa</i>	1	-	-	-	-	Native
<i>Sphex argentatus</i>	-	-	1	-	-	Native
Total	8	2	2	0	1	

## **Discussion**

Due to limited sampling effort (among other factors), little can be concluded about the overall biodiversity differences between Site 1 and Site 2, if any. For ants, the limited number of species of the genus *Strumigenys*, one of the most diverse genus in Hong Kong and very commonly found in leaf litter, is surprising. However this is likely to be a sampling artefact and further sampling will no doubt bring additional records. The use of pitfall traps, as an addition to the ESP protocol, undoubtedly increased the number of ant species collected.

We hope our efforts can be used as a baseline survey that will help future investigators. The diversity of the site, in particular for ants, non-ant aculeata and ambrosia beetles, is likely to be substantially higher than our current results here. Such expectations are based on the very limited sampling provided here at only 2 sites. The lack of sampling was focused on particular vegetation strata, for instance arboreal insects were not targeted and the sampling was conducted in late spring. Consequently, seasonal aspects that are paramount in the activity of many insect species were not included. Further sampling would undoubtedly reveal more records and potentially records of rarer species.

## **Acknowledgements**

We would like to thank The Hong Kong Golf Club for allowing both authors and volunteers to survey the Fanling Golf Course. We are grateful for identification help by Roger Beaver of some challenging ambrosia beetles. We would also like to thank all our volunteers who helped during the surveying, namely Carlos Neves Jr., Clara Park, Thiago S. R. Silva, Leung Chi Wing, Ho Ching Yin, and Lee JaeHyun.

## **References**

Smith, S. M., Beaver, R. A. and Cognato, A. I. (2020) A monograph of the Xyleborini (Coleoptera, Curculionidae, Scolytinae) of the Indochinese peninsula (except Malaysia) and China. ZooKeys, 2020(983), pp. 1–442. doi: 10.3897/zookeys.983.526



**Appendix 3.9 - PARTIAL DEVELOPMENT OF FANLING GOLF COURSE SITE, EIA -  
HIGH LEVEL COMPARATIVE IMPLEMENTATION PROGRAMMES ---  
PROGRAMME ACHIEVABILITY**

**Fanling Golf Course - Partial Development (FGC-PD), EIA -  
High Level Comparative Implementation Programmes**

**Programme Achievability**

**Version 6**

## **CONTENTS**

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## 1 Introduction

- 1.1 This paper reviews the project achievability of Government's proposed implementation of the Fanling Golf Course – Partial Development (FGC-PD) as recorded in the Environmental Impact Assessment Report undertaken in Agreement No. CE 17/2019 CE Technical Study on Partial Development of Fanling Golf Course, Site Feasibility Study. EIA Section 2.12, 'Table 2.5 Summary of Implementation Programme'.

## 2 Summary of the EIA Programme

- 2.1 The EIA Programme divides the work into five stages:

- Stage 1 Public Housing Development in Sub-Area 1, 2024-2029
- Stage 2 School Site Development in Sub-Area 1, 2024-2028
- Stage 3 Associated Road Works outside PDA, 2024 - 2029
- Stage 4 Associated Road Works outside PDA, 2024-2029
- Stage 5 Recreation cum Conservation Area in Sub Areas 2 to 4, (Time Line) 'To be further reviewed'.

## 3 Comments on the EIA Programme

- 3.1 There are five components of the programme for Stage 1, four for Stage 2, two for Stage 2, but none have individual details, with each component potentially taking the same time to complete.
- 3.2 The programme for stages is five to six years for Stages 1, 3, 4, four to five years for Stage 2, and undecided for Stage 5. It is not explained why the time for Stage 5 requires further review and what the intentions are with respect to those works.
- 3.3 There is no information on the steps and time required between the present and the start of the programme implementation.
- 3.4 The omission of a breakdown of each Stages time periods in the EIA Programme, and the absence of any traffic and population assumptions, in the area around FGC-PD , makes it impossible to meaningfully assesses FGC-PD's environmental impacts in an informed manner and especially the feasibility of construction timing and validation of traffic assessments for construction and operational: noise, air and waste, stormwater, traffic and sewage capacity and infrastructure assertions. [For reference, EIA Study Brief No.ESB-318/2019 requires in the first part of 3.4.2 that *"The Applicant shall include in the EIA report details of the construction programme and methodologies. The Applicant shall clearly state in the EIA report the time frame and work programmes of the Project and associated works and other concurrent projects, and assess the cumulative environmental impacts from the project and associated works with all interacting projects, including staged implementation of the Project and associated works."* The summary of Tentative Programme in Section 2.12 does not give the detail required by the ESB for assessment of impacts.
- 3.5 Suggestions on choice of construction options are made in the text of the EIA report but there is no proposal on the options to be selected. This affects both the review of the achievability of the programme and the environmental acceptability of the impacts. For example, in EIA Section 2.11.10 - 2.11.16 suggestions on construction method options (large diameter bored piles 'generally preferred' and driven H-piles) are described but no selection is made. Similarly in Section 2.11.5 to 2.11.7 for Road Works and Utilities where 'trenchless', 'mini-tunnel boring machine TBM', 'cut-and-cover', 'at-grade road



construction 'may be adopted', but the extent and location are not indicated for these extensive, multi-kilometre roadworks and utilities. These methods have substantially different environmental impacts eg. noise, vibration, dust to surrounding receivers - to residents and hospital patients, the Fan Kam Road, the 1914 Grade 2 listed HKGC Clubhouse, subterranean pollution (from bentonite) to flora and fauna, and groundwater flow constraints, e.g. upstream and downstream to Long Valley land users, flora such as the Chinese Swamp Cypress nursery in Sub-Area 4 and fauna). As there is no decision on the proposed construction options, a proper assessment of those impacts cannot be made. [For reference, EIA Study Brief No.ESB-318/2019 requires in the first part of 3.4.2 that *"The Applicant shall include in the EIA report details of the construction ... methodologies. The Applicant shall clearly state in the EIA report the time frame and work programmes of the Project and associated works and other concurrent projects, and assess the cumulative environmental impacts from the project and associated works with all interacting projects, including staged implementation of the Project and associated works."* The summary of Proposed Construction Methodologies in Section 2.11 does not give the detail required by the ESB for assessment of impacts.

- 3.6 Issues with and constraints on construction traffic: constructing 12,000 units on a site in a 5-6 year period is very ambitious, and would require, inter alia, good road access for construction vehicles, construction workmen, materials and equipment deliveries, and pre-formed or MiC items. Its accesses will be shared with North District Hospital (NDH), which itself is presently under expansion. These accesses are also required for Emergency Access to NDH which will result in constraints imposed on construction traffic. Furthermore, during the construction period the access in Ping Kong Road will be severely restricted due to required reconstruction and widening.

#### **4 Steps Required before the Commencement of the Proposed Implementation Programme**

- 4.1 Approval of EIA and ACE – this will take at least two months for assessment of comments and final review by EPD and completion of ACE review and issuance of Environmental Permit by EPD. Allowance must also be made for the Land Contamination survey – 12 months, and the Detailed Archaeological Assessment (DAIA) - 6 to 9 months.
- 4.2 Appointment of consultants: for design and construction management of civil and related works; town planning consultants for Town Planning Ordinance applications. This process may take six months.
- 4.3 For the Town Planning Application to Town Planning Board, there are many steps involved and this could take between at least 11 to 18 months.
- 4.4 Pre-construction Programme – appointment of consultants, consideration of options, design, tender preparation, tendering, approval and appointment of civil engineering contractors. This process will take longer than many other projects, say at least 24 months or more, particularly given that the details of the planning indicated in EIA do not indicate any firm plans for design approach and to the layout and design of Stages 1-4, nor of the Stage 5 Stage 5 (Recreation cum Conservation Area in Sub Areas 2 to 4). This is most critical for Stage 1, public housing.
- 4.5 For the Stage 1 works in particular, detailed design, internal approvals, tendering and appointment of building contractors by Housing Authority will be critical. This might well take 21-24 months, starting after the resolution of design and other interfacing matters.
- 4.6 Compensatory tree planting to replace trees felled – estimated at 100 days. Note that the tree replacements need to be ordered well in advance, normally from sources in Mainland who would need to grow these
- 4.7 Site formation – the extent is dependent of design, which does not yet appear to have been undertaken. This will be one of the critical items before subsequent works proceed.

- 4.8 Road and junction capacity improvements will be required.
- 4.9 Tower block construction methods will be constrained by limited podium space and building height – see comment on the possibility of use of MiC in item 5.5.4 below.
- 4.10 Offsite sewerage works downstream and capacity enhancement at Shek Wu Hui Sewage Treatment Works must be completed before the population intake.

## **5 Potential Causes of Delay or Extension of Construction Works Programme**

- 5.1 Possible delay in approvals of major statutory processes such as EIA and Town Planning Ordinance submissions will set the planned programme back.
- 5.2 Potential delays to Pre-construction Programme as described in Section 4.4 above will affect the overall programme.
- 5.3 HKHA normally opens up complete sections of new estates at one time, meaning that each opening will require a large part of the estate to be completed, serviceable and safely accessible before opening, thus constraining mitigations to make up for unexpected delays.
- 5.4 Funding delays from LegCo are critical to avoid significant delays.
- 5.5 Potential delays to Programme During Construction of this large and complex project may arise from:
  - 5.5.1 Delays to the approx. 850 m sewerage connection to San Wan Road main sewer may arise from problems with deep sewer construction, in particular from pipe-jacking, TBM or open cut construction at crossings such as the Fanling Highway / Fan Kam Road interchange roundabout;
  - 5.5.2 Delays for the main drainage construction for the site for noise and traffic reasons;
  - 5.5.3 Delays due to the extent of piling work, suggested in the EIA to be of bored pile type, but still subject to noise permit constraints because of severe noise limits due to the proximity to the adjacent Northern District Hospital, schools and residential sites.
  - 5.5.4 By reference to EIA Figures 2.2 and 2.3, it appears borderline whether the project could possibly be able to benefit in from Modular Integrated Construction (MiC) techniques for the lower three (western) blocks based on Hong Kong MiC schemes approved to date. The base level space is very constrained, restricting any advantage MiC could give. The other nine blocks exceed the height of any past BD-approved MIC project, so on present experience these blocks could not benefit from MiC techniques. In any case the base level may be too congested to efficiently build the blocks utilising MiC within the tight timeline indicated. It is noted that the success in MiC projects to date in time-saving has been mixed in Hong Kong.

## **6 Likely Programme Achievement**

- 6.1 Matters discussed in Section 5 above are likely to result in a delay in commencement of the construction contract, to say, late 2023, earliest.
- 6.2 The contractor's programme would be likely to commence immediately with site clearance of the site, starting from the northern end, forming an access from Ping Kong Road, temporary internal vehicle access roads and storage, and proceed with demolition – starting with demolition permit applications. Crushed rock can initially be laid for vehicle

access and piling equipment brought in to start from the norther end and western side after buildings cleared.

- 6.3 The Special School site, with its better access and higher levels giving advantage on wet periods, will likely become the Contractor's Works area after demolition of existing buildings.
- 6.4 As soon as possible after the site access is set up, and noise permit and other applications are obtained, work will begin on the critical path items of piling and site formation. The bored piling is likely to begin on that for three self-standing blocks adjacent to Fan Kam Road while site formation works and retaining wall are commenced on the lower level parts of the site.
- 6.5 Site formation will proceed on other areas needing to be built up, followed by piling. The piling is likely to continue over the site for up to four to five years, followed block by block with superstructure (and podium where relevant) construction), the fitting out and services, testing and commissioning.
- 6.6 Early starts will also be made to detailed construction planning and seeking construction permits for the complex stormwater and sewerage connections.
- 6.7 The first population intake timing will be constrained by the completion of noisy structural and civil works construction works on blocks adjacent or close to the first intake, and is not expected until earliest in late 2031. The remainder of the construction may be complete within 18 to 24 months, between 2032-2034.
- 6.8 The construction of the main sewerage and stormwater drainage connections (to the 1800mm trunk sewer in San Wan Road, and to Pak Wo Road main drain via Ping Kong Road respectively) will be completed within this time.
- 6.9 Envisaged Programme for Achievement for Housing Objectives
- 1/9/2023 site available after STT expiry
  - 10/2023-9/2024 land contamination assessment site investigation work, detailed archaeological impact assessment (DAIA) of Sub-Area 1 and lesser DAIA coverage of Sub-Areas 2-3 and, and ground investigation (no time has been included for any contaminated land remediation nor if DAIA reveals any precious finds requiring further works, which would materially increase time required)
  - 10/2024 -6/2026 commencement of site formation and retaining structures
  - 7/2025 bored piling and foundations commence in phases, likely starting on the three western blocks
  - 1/2027 commencement of superstructure in phases
  - 7/2029 completion of superstructure of first blocks and commencement of fitting out, M&E, testing and commissioning, etc in phases
  - 12/2031 – 6/2032 First housing phases available for residential intake.
  - The remainder of the housing construction may be complete within 2032 -2034.

## 7 Summary

- 7.1 The processes in the period to the start of the construction are very likely to run late in 2023 to 2024, putting the completion and first intake of residents in 2029 is not possible,



and likely to be at or after the end of 2031 with full FGC-PD housing project completed between 2032-2034 making;

- 7.2 Additional major road and rail transport infrastructure planned for the Northern Metropolis will not be available at the time of population intake.

## Abbreviations

ACE	Advisory Council on the Environment
EIA	Environmental Impact Assessment
EPD	Environmental Protection Department
FGC-PD	Fanling Golf Course - Partial Development
HKHA	Hong Kong Housing Authority
LegCO	Legislative Council
MiC	Modular Integrated Construction
NDH	North District Hospital
PDA	Project Development Area
TPB	Town Planning Board

## Appendix 3.9 – CONSULTANTS' BIO

### *CURRICULUM VITAE*

#### **Paul J. Leader**

Licensed Bird Ringer in Hong Kong (Cap. 170) since 1989  
Qualified Ringer under the British Trust for Ornithology since 1987



Member of the Hong Kong Institute of Environmental Impact Assessment (HKIEIA), 2015  
Professional Member of Hong Kong Institute of Qualified Environmental Professionals (HKIQEP), 2016

**Director**, AEC Ltd: Paul is an avifauna specialist with particular experience of Ecological Impact Assessment, and wetland design and management, and ecological monitoring. Paul has worked on numerous EIAs and a number of wetland design and implementation projects. Paul is currently a member of the World Wide Fund for Nature (WWF) Mai Po Nature Reserve Management Committee (since 2006) and he is a current member of the Hong Kong Bird Watching Society Records Committee and the Status and Trend and Red List Focus Group which is advising Hong Kong Government on the development of a Biodiversity Strategy and Action Plan under the Convention on Biological Diversity.

He has extensive experience of wetland design and management in Hong Kong and has worked on the mitigation areas for the MTRC Lok Ma Chau Spurline since 2001, dealing with regular monitoring and adaptive management issues. Paul has extensive experience of avifauna survey methods include bird ringing (35 years of experience) and radio-tracking (15 years).

#### **Professional Experience**

**1999 – Present**, Director, AEC Ltd.

#### **Expert Witness:**

*Environmental Impact Assessment Appeal Board*: MTRC Lok Ma Chau Spur Line Appeal - Expert Witness on Ornithology (2001).

*Town Planning Appeal Board*: Nam Sang Wai Appeal - Expert Witness on Ecology (2021-22)

#### **Projects:**

Fanling Golf Course – Services for Obtaining Audubon Cooperative Sanctuary Programme Certification and Ecological Enhancement of the Fanling Golf Courses: to assist management in obtaining Audubon Cooperative Sanctuary Programme Certification and advise on, design and oversee measures to enhance natural habitats and enrich the biodiversity of the Fanling Golf Course.

Hong Kong Jockey Club – Redevelopment of Penfold Park: Provision of Ecological Services for Section 16 and EAIO applications.

Residential Development at Sha Po: Project Director for a large-scale residential development and wetland restoration study, including the detailed design of 12 ha of wetland. Wetland restoration centres on the Sha Po marsh, which supports a globally threatened dragonfly. Responsibilities include design and supervision of wetland restoration and enhancement measures, and the design and supervision of ecologically driven landscaping.

MTRC West Rail Ecological Monitoring and Adaptive Management Advice: ecological monitoring, including radio-telemetry studies, design and supervision of wetland enhancement measures, long-term ecological monitoring and adaptive management proposals as part of a number of contracts with MTRC (2000 to present).

Proposed Residential Development at Lin Barn Tsuen: Project Director for a large scale residential development and wetland restoration study.

Field Study on Habitat Requirements of Anatidae Species in Mai Po and Inner Deep Bay Areas: studies of habitat selection and movements of duck populations utilising trapping, marking and radio-telemetry.

Focal study of Black-faced Spoonbills in the Mai Po and Inner Deep Bay areas for Agriculture, Fisheries & Conservation Department, Hong Kong SAR Government :

Radio-telemetry studies of Black-faced Spoonbills in the Deep Bay to assess day and night-time habitat use.

Hong Kong-Zhuhai-Macau Bridge: Hong Kong Section and the North Lantau Connection. Ecological Baseline Survey. Avifaunal field surveys.

## Employment History

**1996 - 1999:** ERM Hong Kong Ltd.: Ornithologist

**1997 - 1998:** World Wide Fund For Nature Hong Kong: ornithologist on the Black-faced Spoonbill Project -undertook field research, data analysis, satellite-tracking and report writing for a baseline ecological investigation of the critically endangered Black-faced Spoonbill.

**1996 - 1997:** Stanger Asia: Ornithologist carrying out post-construction monitoring for the Shenzhen River Regulation Project.

**1996 - 1997:** ERM Hong Kong: Monitoring of Chinese White Dolphin *Sousa chinensis*.

**1995 - 1996:** Aspinwall & Co. Hong Kong Ltd: Consultant Ornithologist for 'Study on the Ecological Value of Fish Ponds in the Deep Bay Area'.

**1994 - 1995:** World Wide Fund for Nature Hong Kong: Consultant Ornithologist for the Shenzhen River Regulation Project Environmental Impact Assessment.


## Key References

Leader, P. J. 2006. Habitat utilization of radio-tracked Black-faced Spoonbills in Mai Po and Inner Deep Bay, Hong Kong, winter 2002-03. Proceedings: Keeping Asia's Spoonbills Airbourne. International Symposium on Research and Conservation of Black-faced Spoonbill, Hong Kong. Hong Kong Birdwatching Society, Hong Kong.

Leader, P. J. 2009. Inland wetlands in Wong, L. C., V.W.Y. Lam and G.W.J. Ades.Eds. 2009. Ecology of the Birds of Hong Kong. Kadoorie Farm and Botanic Garden, Hong Kong Special Administration Region.

Carey, G. J., Chalmers, M. L., Diskin, D. A., Kennerley, P. R., Leader, P. J., Leven, M. R., Lewthwaite, R. W., and Young, L. 2001. The Avifauna of Hong Kong. Hong Kong: Hong Kong Birdwatching Society, Hong Kong.

Melville, D.S., Young, L. and Leader, P.J. 1994. The importance of fishponds around Deep Bay for wildlife, especially waterbirds, together with a review of potential impacts of wetland loss and mitigation measures. Unpublished report, WWF Hong Kong, Hong Kong.

<b>Name:</b>	<b>Gillian CASTKA</b>	
Years of Experience:	45 years	
Contact Details	<b>Chartered Civil Engineer</b>	
	Specialist Hydrologist	

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### Qualifications:

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B.Eng. (Hons) Civil and Structural Engineering, Sheffield University (1977)  
M.Sc. Advanced Engineering Hydraulics & Hydrology, University of Newcastle-upon-Tyne (1978)  
Chartered Civil Engineer. Member Institution of Civil Engineers (1988)  
Member, Hong Kong Institute of Hong Kong Engineers (1990)

### Key Achievements:

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Gillian Castka has more than forty years' experience in the construction industry, over thirty years of which have been spent on major infrastructure projects in Hong Kong.

Her ten years of UK experiences prior to coming to Hong Kong included river training works, flood alleviation schemes, marina and golf course developments. She was also involved in the asset management studies ahead of the privatisation of the water authorities

Her earliest experiences in Hong Kong involved preparing drainage and sewerage masters plans for Drainage Services Department. She was responsible for recommending the Weibull III rainstorm profile which was subsequently incorporated as the design standard into the DSD Stormwater Drainage Manual. As part of her contribution to the Territorial Land Drainage Studies (TEL2) covering the northern and NWNT river basins, she provided input into the drafting of the Land Drainage Ordinance (Cap 446).

Gillian worked on the extension of Happy Valley Racecourse and provided the feasibility studies for the stormwater storage scheme, that was eventually implemented twenty years later.

Gillian has been engaged on a number of private development projects including Nam Sang Wai in the NWNT. She worked with the environmental team on the Shenzhen River realignment project.

She was engaged as a consultant providing technical solutions for Town Planning Board S16 and S17 applications. She has provided drainage design for a number of golf courses in UK and Asia.

Gillian provided civil and groundwater advice on the Route 3 tunnel and the risk of water loss passing below catchwaters and Ho Pui Reservoir. She was the Project Manager responsible for the design and tender preparation for the Rural Drainage Rehabilitation Scheme (design and construction) for River Indus, River Ganges and River Beas in the northern New Territories.

She was KRCR's senior hydrologist on West Rail, (advising on the establishment of managed wetlands), and the construction of (Long Ping, Siu Hong and Tuen Mun) stations over nullahs, MOS Rail and the Lok Ma Chau Sprurline Including hydrological advice on Long Valley.

More recently Gillian has been facilitating partnering workshops and providing professional career training to the construction industry on risk management, value engineering, mediation and sustainable solutions for the built environment.

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## Alexander [Sandy] M Duggie

BSc(Hons), BPhil, FHKILA, RLA, CMLI, MHKIEIA, MHKIUD, MHKIQEP, BEAM Pro (NB, EB, ND)  
 Managing Director – URBIS Limited



Sandy is a Registered Landscape Architect, a Fellow of the Hong Kong Institute of Landscape Architects and, since 1995, the Managing Director of URBIS Limited, a Hong Kong based multi-award winning design consultancy established in 1977, and providing services in master-planning, urban design, town planning, landscape design, golf course design and environmental impact analysis. He has lived in Hong Kong and worked for URBIS since 1985, during which time he has contributed to several major territorial and strategic planning studies for the Hong Kong Government and designed a very large range of private and public sector projects from small private gardens to large scale public infrastructure works.

Under Sandy's leadership URBIS has become the pre-eminent landscape consultancy practice in Hong Kong, having won more than 200 landscape planning and design awards and competitions from local and international peer groups for projects in Hong Kong and China. The top quality of URBIS work is evidenced by the fact that since the HKILA Annual Awards were inaugurated in 1989, URBIS has won over 25% of the total awards, including over 31% of all SILVER Awards and over 36% of all GOLD awards. URBIS has won more HKILA awards than all Government Departments combined, including twice the number awarded to Architectural Services Department.

### Key Relevant Experience in Landscape and Visual Impact Assessment

Sandy has been undertaking Landscape and Visual Impact Assessments in Hong Kong since 1985, long before the EIAO became law. In the late 1980's and 1990's he developed a template for LVIAs undertaken by URBIS that became recognised as the local industry gold standard, and which subsequently was adopted as a basis of the EIAO guidelines promulgated in relation to LVIAs. In 2003-05 he directed the Landscape Value Mapping Study for PlanD that is still a critical reference point for Baseline Reviews of all LVIAs undertaken in Hong Kong. He has successfully led the LVIAs undertaken for many major infrastructure projects including the Hong Kong International Airport Third Runway Project, West Rail, the Shatin to Central Link, the North Island Line, the Kowloon Southern Link, and the Lok Ma Chau Spur Line.

### EDUCATION / PROFESSIONAL QUALIFICATIONS

BSc (Hons) in Geography (Aberdeen)	1978
B Phil in Landscape Design (Newcastle-upon-Tyne) (awarded The Brian Hackett Prize as top student)	1981
Member of Landscape Institute, UK (CMLI)	1984
Fellow of The Hong Kong Institute of Landscape Architects (FHKILA)	2008 (member since 1988)
Registered Landscape Architect (RLA)	1999
Corporate Member of Hong Kong Institute of Environmental Impact Assessment (MHKIEIA)	2002
Member of the Hong Kong Institute of Urban Design (MHKIUD)	2010
BEAM Professional (BEAM Pro (NB, EB, ND))	2016
Member of the Hong Kong Institute of Qualified Environmental Professionals (MHKIQEP)	2017

### PROFESSIONAL / INSTITUTIONAL POSTS

Chairman	Landscape Architects Registration Board	2002 - 2005
Vice Chairman	Landscape Architects Registration Board	1997 - 2002
Chairman	HKILA Board of Examiners	1996-98, 2001-03, 2004-05, 2009-2011, 2015-19
Member	HKILA Board of Examiners	1994 - 2019
Member	HKILA Executive Council	1988 - 1994
HKILA Representative	Planning Sub-committee of the Land and Development Advisory Committee	2002 - 2015, 2021-2024t
External Examiner	University of Hong Kong, Master in Landscape Architecture	2011
External Examiner	University of Hong Kong, Bachelor of Arts in Landscape Studies	2012-2016
Director	BEAM Society Limited	2014 - 2020, 2021-2023
Member	BEAM Society Limited Professional Development Committee	2014 - 2022
Chairperson	BEAM Society Limited Audit Committee	2020 - 2022
Member	Hong Kong Green Building Council Limited Green Labelling Committee	2016 - 2022
Co-opted Member	Hong Kong Green Building Council Limited Green Labelling Committee	2020 - Present
Member	Green Building Faculty, Hong Kong Green Building Council Limited	2016 - Present
Director	Professional Green Building Council	2021-2022

## **SMEC Hong Kong**

SMEC is a multidisciplinary and professional services company that delivers outstanding physical and social infrastructure services to clients and communities around the world. As part of the Singapore-based Surbana Jurong Group, SMEC can draw upon a talent pool of 16,000+ people globally in 120+ offices in 40+ countries throughout Australasia, Asia, the Middle East, Africa, Europe and the Americas. SMEC was established in Hong in 1994 and offers environmental consultancy services as well as design and construction services in civil, structural and geotechnical engineering.

### **Ir Alexi BHANJA** BSc(Hons) MSc CEnv C.WEM AMP FCIWEM MCIWM MHKIEIA MHKIE MHKIQEP

Alexi is SMEC's Regional Manager for North Asia and the Managing Director of SMEC in Hong Kong. He has 30+ years of experience in environmental consulting on projects in Hong Kong, Asia, the Middle East and Europe. Alexi has been involved in more than 450 projects to-date, covering EIAs and permit applications, sustainable development; impacts of tourism and leisure developments; solid waste management; and EM&A. Alexi has been involved in more than 40 EIAs, the most recently approved being the *Mai Po Nature Reserve Infrastructure Upgrade Project* for WWF-Hong Kong, located in one of Hong Kong's most ecologically sensitive areas. Alexi's particular skills are in waste management and contaminated land.

### **Antony WONG** BSc(Hons) MSc AMP BEAM Pro MHKIOA MIOA MHKIOEH MHKIEIA MHKIQEP

Antony is a Technical Director at SMEC and heads the Water and Environment Group. He has 25+ years of experience on projects in Hong Kong, Macau, China, Taiwan, Korea, Mongolia and Malaysia. Antony has managed more than 350 environmental studies including EIA; air and noise modelling and assessment; land contamination assessment; sewerage and drainage impact assessment; environmental health and safety audits, due diligence audits, and EM&A. Antony's particular skills are in air quality, noise and contaminated land.

### **Fred NG** BSc(Hons) MSc MHKIOA MHKIEIA MHKIQEP

Fred is an Associate in SMEC's Water and Environment Group. He has 25+ years of consultancy experience in Hong Kong, Macau and Singapore. He has been involved in more than 250 projects particularly design of noise mitigation measures for buildings, infrastructure and transportation, including noise and acoustic assessments for underground railway lines. Fred has acted as key noise specialist for a number of EIAs including those for the Airport Master Plan 2030, Kai Tak Development Engineering Study, West Kowloon Cultural District, MTRC South Island Line – East, Liantang/Heung Yuen Wai Boundary Control Point and Associated Works, Tai Shue Wan Development at Ocean Park and Shatin New Town Trunk Road T3. Fred's particular skills are in an expert in noise, vibration and acoustics.





John Berry is civil engineer whose interest and work covered the engineering side of transport and urban planning, design and design and contract management of civil engineering infrastructure projects roads, highways, railways and transport systems together with supporting systems of urban infrastructure.

Mr Berry graduated in and gained his early training and experience in civil and transportation engineering in Melbourne, Australia, then worked in London UK on UK and Africa projects, before working in UAE on a sports stadium, and a commercial development in Saudi Arabia on behalf of a Singapore company. Subsequently John worked in and from Hong Kong as with consultants to director level, principally on development, civil and transportation since the 1980s projects principally in Hong Kong, but also in Vietnam, Philippines, mainland China and Qatar.

His experience in Hong Kong includes leading large planning projects such as HK's Central and Wanchai Reclamation Feasibility Study, Central Wanchai Bypass study, Tseung Kwan O Further Development Study, Central Kowloon Bypass Investigation, and design / construction projects such as reclamations at HK Central, Tamar, Wanchai, Kwai Chung Container Port and Tseung Kwan O, Castle Peak B Power Station, construction of Tolo and Fanling Highways, project planning and design for HK railways (MTR and KCR) and HK airport theme parks, HK's Art Park's park development, most of HK Government's Greening Masterplan projects, expert witness and arbitration assignments in Singapore and HK, plus planning, design and construction of various sporting projects , and waste projects including the WEEE facility and the current Integrated Waste Management Facility (incinerator, on an artificial island) in south of HK.

Recent consulting work includes on marine and landside sporting projects for a developer, and engineering planning for projects in Guangzhou Nan Sha Wan (Bay) Urban Design and Zhuhai Hè zhōu South Development Programme, near Doumen.

Mr Berry's experience covers projects in Governments, developers, corporations and sporting and other charitable organisations. He was an officer of the HK Institution's Civil Engineering Division, is a fellow of the HK and Australian Institutions a registered professional engineer and is an active council member of a HK national sports association.

**Name**

Timothy J. PEIRSON-SMITH

**Profession**

EIA Expert and Public Engagement and Public Relations

**Year of Birth**

1962

**Current Position**

Founder and Managing Director

**Company**

Executive Counsel Limited

**Qualifications**

University of Sheffield (UK) Bachelor of Science: Natural Environmental Science (1983)

University of Aberdeen Research Assistant: Effect of Acid Rain on Upland Solids (1984-1988)

The Financial Times / Pearson Education Non-Executive Director Diploma (2017)

**Highlights**

Timothy J. Peirson-Smith has over 30 years professional PR experience and is a stakeholder engagement and public relations specialist, who has been developing major stakeholder engagement strategies and implementing them for over 30 years on large planning, development and infrastructure mega projects, such as Channel Tunnel Rail Link (UK), London Underground extensions, and some of the largest Hong Kong transport and development infrastructure projects such as HK International Airport, CLP's LNG Terminal and Offshore Wind Farm, Central and Wanchai Bypass, HK Disneyland Phase 1 and 2, and CEDD/PlanD Tung Chung Newtown. Notably, Tim is an environmental scientist and EIA expert who has led over 110 EIA projects in Hong Kong. Tim is also currently co-chair of the International Association of Impacts Assessment Public Participation (Stakeholder Engagement) section and leads the development of stakeholder engagement for this body of over 1,000+ international practitioners.

**Past most relevant projects**

Stakeholder Engagement Support for Hong Kong Golf Club (2018 to now): Devise stakeholder engagement strategy focusing on technical audiences, such as eNGOs and various professional institutes etc.

Public Engagement Support for Hong Kong Housing Society (2018 to 2019): Formulated public engagement strategy, identify and prioritise key stakeholders involved and arrange a series of open public participation activities for the Ecological and Development Feasibility Study of Identified Areas on the Periphery of Country Parks.

Stakeholder Engagement and Public Affairs Support for The Walt Disney Company (2014 to 2017): Acted as the stakeholder engagement and public affairs counsellor of Walt Disney

Company for Hong Kong Disney Resort Phase II Development. Public Engagement Support for Civil Engineering and Development Department and Planning Department, HKSAR Government (2012 to 2016): Acted as the public engagement team leader for CEDD/PlanD's Tung Chung New Town Expansion, led the three-stages of highly successful and acclaimed public engagement exercise and arranged a series of over seventy public engagement activities, such as public forums, community and roving exhibitions, and acted as facilitator for engagements.

Stakeholder Engagement Support for "3RS" Airport Authority Hong Kong (2008 to 2015): Provided strategic recommendations on the public engagement plan of "Hong Kong International Airport 2030 Strategy". In 1993-2015, Tim developed the public engagement strategy for carrying out the development and subsequent extension of Hong Kong International Airport into a two runway (1993-2007) and then a third runway system (3RS), where Tim formulated the entire 3RS stakeholder engagement strategy and implemented over a hundred engagement activities and acted as facilitator for engagements.

Strategic Communication Support for China Light and Power (CLP) (2004 to 2015): Supported stakeholder consultation of Offshore Wind Farm (OWF) Project and Liquefied Natural Gas (LNG) Project and Wind Turbine Project and devised stakeholder engagement strategies for these projects. Monitored and reviewed the relevant green and environmental issues related to CLP and provided feedback and opinions from stakeholders' groups and concerned parties. Acted as independent facilitator for regular dialogues between CLP and key stakeholders.

Stakeholder Engagement and Public Relations Support for Works Bureau, HKSAR Government (2001 to 2013): Formulated a PR, Publicity and Stakeholder Engagement Strategy for the Bureau and all of its Works Departments.

**Detailed Experience**

Stakeholder Engagement Support for Impact Electrons Development (2019 to now): Deliver professional stakeholder engagement service to a foreign investor with an aim to secure permission from Government to build and operate a large-scale solar farm (20,000 homes powered) in Hong Kong. Identify key stakeholders including government involved and garner their support through continual and persistent lobbying.

Stakeholder Engagement Support for China Coast Community (2019 to now): Engage with all government and other key stakeholders involved in CCC's redevelopment project and garner their views and opinions to formulate an impartial and professional redevelopment proposal for decision making and to secure their support towards the redevelopment.

Stakeholder Engagement Support for Discovery Bay International School (2017 to now): Formulate communications



strategy with regard to DBIS's expansion, and the strategy includes methodology of lobbying related Government Departments and community stakeholders. Draft, review and submit submissions to government.

Stakeholder Engagement Support for Hong Kong Jockey Club Kau Sai Chau Golf Academy (2012 to 2015): Formulated stakeholder engagement strategies and identified relevant stakeholders involved in the expansion of existing Golf Academy at Kau Sai Chau.

Stakeholder Engagement Support for Hong Kong Jockey Club and Hong Kong Football Association (2013): Formulated stakeholder engagement strategic recommendations for HKJC to develop Tseung Kwan O Landfill (Stage 1) into multi sports land uses including 12 football pitches.

Stakeholder Engagement Support for Highways Department, HKSAR Government (2009 to 2013): Acted as stakeholder engagement counsellor of Leighton Contractors (Asia) and identified relevant stakeholders involved in Central-Wanchai Bypass - Central Interchange development project. Facilitated Community Liaison Group Meetings

Public Engagement Support for Environmental Protection Department, HKSAR Government (2008 to 2012): Acted as the public engagement team leader for EPD's Review of Marine Water Quality Objectives' Study, formulated engagement strategy, arranged and facilitated a public seminar and a series of consultation sessions / focus group meetings to harvest opinion from a broad spectrum of community

Stakeholder Engagement Support for Swire Properties (2005-2010): Provided professional stakeholder engagement, government relations and development advisory services to Swire Properties' West Kowloon Cultural District and other residential and commercial project

Stakeholder Engagement Support for English Schools Foundation (ESF) (2007 to 2008): Devised and formulated stakeholder engagement and communication strategy to engage key stakeholders on the Kowloon Junior School's redevelopment plan and executed accordingly.

Other key Government and Statutory Bodies' Stakeholder Engagement Projects involved:

Highways Department (HyD)

- Western Harbour Crossing Environmental Review 1994-1997
- EM&A Manual Drafting: Lantau Fixed Crossing
- Lantau Toll Plaza; North Lantau Expressway
- Western Coast Road EIA
- Route 10 - North Lantau to Yuen Long Highway EIA 1998-2000

Civil Engineering Development Department (CEDD)

- Penny's Bay Reclamation Design and Construction EIA

- Preliminary Designs for Proposed Theme Park in Penny's Bay of North Lantau and Its Essential Associated Infrastructures EIA
- Northshore Lantau Development Feasibility Study for Cho Kwo Wan Link Road EIA
- Backfilling of Marine Borrow Pits, North Lantau and South Tsing Yi EIA
- Feasibility Study; Planning and Engineering Feasibility Study for Development on Sham Tseng Further Reclamation EIA

Territory Development Department (TDD)

- Central Reclamation Phase III (1993-5)
- Green Island Development: Ecological and Water Quality Impact Assessment (EWQIA and EIA)
- Green Island Development: Engineering Investigation and Planning Review, Environmental
- Effects of Sewage on Dolphins, Lantau; Territory Development Department
- Tung Chung Phase I EIA
- North Lantau Development Study EIA 1990-1992

Planning Department (PlanD)

- Hong Kong 2030 Study 2001-2003

Water Services Department (WSD)

- Submarine and Land Water Supply Pipeline to North Lantau EIA

Housing Authority

- Tung Chung Town Centre Assessments - Environmental
- Schools and Residential Property Noise Assessment, Lantau, Tung Chung

Airport Authority (HK)

- AEL Limited, New Chek Lap Kok Workshops Environmental Permits
- A Strategic Overview of Major Airport Development, The SOMAD Study (Airport Authority of Hong Kong) - Environmental
- Airport Authority (AA) of Hong Kong Contract 162: Sea Rescue Station Review -Environmental

MTRC

- Lantau and Airport Railway, Environmental Assessments
- Kennedy Town Extension, EIA