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9. CULTURAL HERITAGE

9.1 Introduction

9.1.1 This section presents the cultural heritage impact assessment (CHIA) which includes a Built Heritage Impact Assessment (BHIA) due to the construction of the Project.

9.2 Legislative Requirements and Evaluation Criteria

General

9.2.1 The following legislation, standards, guidelines and requirements are applicable to the cultural heritage impact assessment in the Project:

- Environmental Impact Assessment Ordinance (Cap. 499) (EIAO) and the associated Technical Memorandum on the EIA Process (EIAO-TM);
- Antiquities and Monuments Ordinance (Cap. 53) (A&M Ordinance);
- Hong Kong Planning Standards and Guidelines (HKPSG);
- Requirements for Built Heritage Impact Assessment under Cultural Heritage Impact Assessment from Appendix H of EIA Study Brief (ESB-334/2020); and
- Guidelines for Cultural Heritage Impact Assessment.

Environmental Impact Assessment Ordinance (Cap 499)

9.2.2 Annex 10 of the EIAO-TM outlines the criteria for assessment of impact on sites of cultural heritage. The general presumption is in favour of the protection and conservation of all sites of cultural heritage. In addition, adverse impacts on sites of cultural heritage shall be kept to the absolute minimum.

9.2.3 Annex 19 of the EIAO-TM outlines the approaches required in investigating and assessing the impacts on sites of cultural heritage. There is no quantitative standard in deciding the relative importance of these sites, but in general, sites of unique archaeological, historical or architectural value will be considered as highly significant. Preservation in totality is preferred. If, due to site constraints and other factors, only preservation in part is possible, this must be fully justified with alternative proposals or layout designs, which confirm the impracticability of total preservation.

Antiquities and Monuments Ordinance (Cap. 53)

9.2.4 The Antiquities and Monuments Ordinance (Cap. 53) (A&M Ordinance) provides statutory protection against the threat of development on Declared Monuments to enable their preservation for posterity. The A&M Ordinance also establishes the statutory procedures to be followed in making such a declaration.

9.2.5 Any person who discovers an antiquity, or supposed antiquity, is required to report the discovery to the Antiquities Authority.

Hong Kong Planning Standards and Guidelines (HKPSG)

- 9.2.6 The Chapter 10, Conservation, of the HKPSG provides general guidelines and measures for the conservation of historical buildings, sites of archaeological interest and other antiquities.

Requirements for Built Heritage Impact Assessment under Cultural Heritage Impact Assessment

- 9.2.7 Appendix H of EIA Study Brief (ESB-334/2020) provides requirements on conducting Built Heritage Impact Assessment under Cultural Heritage Impact Assessment for the Project.

Guidelines for Cultural Heritage Impact Assessment

- 9.2.8 The Guidelines for Cultural Heritage Impact Assessment provide guidelines to assist the understanding of requirements in assessing impact(s) on Site of Cultural Heritage.

9.3 Assessment Methodology

- 9.3.1 According to Clause 3.4.10.2 of the EIA Study Brief No. ESB-334/2020, the CHIA shall include a BHIA for the construction of the Project and the assessment area for CHIA (CHAA) is defined as an area within 300m from the boundary of the Project area (see **Figure 9.1** for the CHAA). The CHIA comprises the following tasks:

a) Baseline Study

- 9.3.2 A desktop review was conducted based on best available information such as relevant previous studies and background of the site held by Government departments, public libraries and the Hong Kong Heritage Discovery Centre Reference Library to identify the known and unknown built heritage items including declared monuments, proposed monuments, sites/buildings/structures graded by the Antiquities Advisory Board (AAB) and Government historic sites identified by AMO; and sites of archaeological interest within the CHAA. The Bibliography is provided in **Section 9.10**.

b) Built Heritage Survey

- 9.3.3 A built heritage survey was conducted to identify known and unknown built heritage items in the CHAA that may be affected by the Project and its associated works. The findings are summarized in **Section 9.5** and detailed in **Appendix 9.1**.

- 9.3.4 The coding method for the recording of built heritage resources used is as follows:

- Graded historic sites/buildings/structures by the AAB and new items for grading assessment (GB);
- Additional surveyed Built Heritage Items including buildings, structures, features and sites. (HB); and
- Cultural Landscape Features (CL).

Impact Assessment

- 9.3.5 Based on the findings and analysis from baseline study and built heritage survey, a CHIA including Built Heritage Impact Assessment (BHIA) for the construction of the project was conducted to assess the direct and indirect impacts on the known and unknown built heritage items. Impact on built heritage items was identified, appropriate practicable mitigation measures and monitoring to avoid or keep the adverse impact to the minimum have been recommended. A checklist including all the affected archaeological resources, impacts identified, recommended measures as well as the implementation agent and period were included in the EM&A section of the EIA report. The BHIA was conducted according to Annexes 10 and 19 of the TM and the Requirements for CHIA in Appendix H of the EIA Study Brief No. ESB-334/2020.

9.4 Baseline Condition

Topographical Background

- 9.4.1 The CHAA is situated in Mui Wo in the eastern part of Lantau Island. It is located on alluvium and debris flow deposits which is a result of aggradation of deposit from Silver Mine Bay in the East. At the heart of Mui Wo, Luk Tei Tong River, Tai Tei Tong River and Pak Ngan Heung River discharge water to River Silver towards Silver Mine Bay. The CHAA is also protected from hill areas from the north, south and west.

Geological Background

- 9.4.2 The superficial geology of the area is underlain by alluvium and debris flow deposits. The inferred solid geology of the general area comprises fine- to medium-grained granite and minor intrusion of feldsparphyric rhyolite. At Luk Tei Tong River, the inferred solid geology is fine-grained quartz syenite. Based on the results of site investigations, the sub-soil conditions are found to comprise the following strata included fill, debris flow deposit, alluvium, decomposed Granite, and bedrock. A thick debris flow deposit is locally found in Tai Tei Tong River. Details are shown in **Figure 9.2**.

Historical Background

General History

- 9.4.3 In the period between 6,000 and 2,000 years ago, Yue people, also called the “Hundreds Yue” (百越) people, were scattered across the coastal areas of Southeast China. They comprised different tribes and had different surnames. This is recorded in AD first to second century Chinese history book such as Shiji (History Record 史記) and Hanshu (Book of Han Dynasty 漢書). In terms of language, folklore and physical characteristics, there were differences between Yue people and Han people whom inhabited northern and central China.
- 9.4.4 When south China became an administrative territory of the Chinese central government in 221 BC, the Yue people began to share the Han culture and language and became Han people. In 208 BC, Han people from northern China and Yue people

from south China established the state of Canton, the name of this southern state was Nan Yue (Southern Yue). No detailed historical records for the Assessment Area can be found for the period from the Han Dynasty to the Tang Dynasty (206 BC to AD 907).

- 9.4.5 Hong Kong including Lantau Island was governed by the Chinese Emperor from the Qin Dynasty (221 - 206 BC) onwards. Initially, it was governed by the Panyu (番禺) County. Up until the Han Dynasty (206 BC - AD 220), it was governed by Bolaw (博羅) County. Later, it was governed by the Bao'an (寶安) County during the Sui Dynasty (AD 581 - 618) and then by the Dongguan (東莞) County from AD 757 - 1572.
- 9.4.6 In the 9th Century, Hong Kong established itself as a major salt production centre. Salt production fields were distributed all around Hong Kong and the west bank of Pearl River such as Tai O. The study of local genealogy indicates that five major clan groups, the Pangs, the Lius, the Haus, the Mans and the Tangs, were believed to be the first settlers in the northern New Territories since the southern Song Dynasty area. However, not much historical record is available for the outlying Islands, including Lantau Island.
- 9.4.7 During the 15th century the coastal areas of Dongguan County were attacked by marauding bandits and pirates. In order to protect against the bandits and pirates, Xin'an County (新安縣) was set up in 1573. According to the record of the Xin'an Gazetteer (新安縣志), Hong Kong was zoned within the Xin'an County. This area covered two fifths of the County. In 1586 and 1643 two editions of the Xin'an Gazetteer were published but both of them were lost.
- 9.4.8 In 1661, the Coastal Evacuation was promulgated by the Qing Dynasty Emperor in order to stifle the supply of the Anti-Manchu troops in Taiwan, people living along the coast of Guangdong were moved 50 li (里) inland. The Hong Kong settlers were forced to move back to China until 1669 when the Boundary Extension was promulgated and the Hong Kong settlers moved back to their villages.
- 9.4.9 The population and economy of Xin'an County was strongly affected by the Coastal Evacuation. It is recorded that about 16,000 persons from Xin'an were driven inland but only 1648 of those who left are said to have returned. When the Boundary Extension was promulgated, newcomers, in particular the Hakka people, were encouraged to immigrate to the Hong Kong and they did so during the late 17th and early 18th century.

Historical Background of Mui Wo

- 9.4.10 The recorded history of Mui Wo dates back to the Southern Song dynasty, settlement and villages had been established, and also served as a site for salt production. Legend also says that the Southern Song imperial court fled south from the invading Mongols, sought refuge for several months in Silvermine Bay (at that time known as Mei Yu or 梅蔚) in the end of 13th Century.
- 9.4.11 Within the CHAA, there are a number of historical villages which are established over hundred years including Luk Tei Tong, Tai Tei Tong, Mui Wo Kau Tsuen, Chung Hau,

and villages established by mainland refugees after the WWII, for example, Tsoi Yuen Tsuen, Sun Lung Wai, Nim Po Tsuen, Ma Po Tsuen, Ha Tsuen Long and Nam Bin Wai.

Built Heritage

9.4.12 Baseline review identified no declared monuments, proposed monuments and Government historic site/buildings identified by Antiquities and Monuments Office (AMO) within the CHAA.

9.4.13 Six grade 2 historic sites/buildings/structures within Yuen’s Mansion and one grade 3 historic site/building/structure are identified within the CHAA. They are listed in **Table 9.1** below and their locations, detailed descriptions and photographic records are shown in **Appendix 9.1**.

Table 9.1 - Identified Historic Sites/Buildings/Structures

Site Code	Name	Figure no. reference in Appendix 9.1	Page no. reference in Appendix 9.1	Approximate Closest Distance to Works Area (m)
Grade 2 Historic sites/Buildings/Structures				
GB-01	Yuen's Mansion, West Watchtower, Chung Hau, Mui Wo, Lantau Island	12	20-22	75
GB-02	Yuen's Mansion, Main House, Chung Hau, Mui Wo, Lantau Island	12	23-26	80
GB-03	Yuen's Mansion, Front House, Chung Hau, Mui Wo, Lantau Island	12	27-31	85
GB-04	Yuen's Mansion, East Watchtower, Chung Hau, Mui Wo, Lantau Island	12	32-33	95
GB-05	Yuen's Mansion, Small House attached to East Watchtower, Chung Hau, Mui Wo, Lantau Island	12	34-35	100
GB-06	Yuen's Mansion, Barn, Chung Hau, Mui Wo, Lantau Island	12	36-37	85
Grade 3 Historic Site/Building/Structure				
GB-07	Watchtower, Luk Tei Tong, Mui Wo, Lantau Island	3	38-39	135

9.4.14 In addition to the graded historic sites/buildings/structures, 78 Built Heritage Items (BH-01 to BH-78) and 5 Cultural Landscape Features (CL-01 to CL-06) are identified within the CHAA. They are listed in **Table 9.2**. Their locations, detailed descriptions and photographic records are shown in **Appendix 9.1**.

Table 9.2 - Identified Built Heritage Items and Cultural Landscape Features

Site Code	Name	Identification	Figure no. reference in Appendix 9.1	Page no. reference in Appendix 9.1	Approximate Closest Distance to Works Area (m)
Built Heritage Items					
Luk Tei Tong					
HB-01	Village House, No.3 Luk Tei Tong	Village House	2	40-42	150
HB-02	Village Houses, Nos.36-37 Luk Tei Tong	Village Houses	3	43-46	150
HB-03	Tsang Ancestral Hall, No.42 Luk Tei Tong	Ancestral Hall	3	47-49	145
HB-04	Tai Shan Sek Gam Dong Shrine, Luk Tei Tong	Village Shrine	2	50-51	60
HB-05	Tai Shan Sek Gam Dong Shrine, Luk Tei Tong	Village Shrine	3	52-53	75
HB-06	Village God Shrine, Luk Tei Tong	Village Shrines	3	54-55	85
HB-07	Banyan tree and Associated Shrine, Luk Tei Tong	Banyan tree and associated shrine	3	56-57	65
HB-08	Fuk Tak Shrine, Luk Tei Tong	Fuk Tak Shrine	4	58	230
HB-09	Village God Shrine, Luk Tei Tong	Village God Shrine	4	59-60	250
HB-10	Fuk Tak Kung and Village God Shrine, Luk Tei Tong	Fuk Tak Shrine	2 and 13	61-63	45
HB-11	Village God Shrine	Village God Shrine	2 and 5	64-65	110
Tai Tei Tong					
HB-12	Village House, No.3 Tai Tei Tong	Village house	6	66-67	40
HB-13	Village House, No.8B Tai Tei Tong	Village house	6	68-69	30
HB-14	Village House, No.38 Tai Tei Tong	Village house	6	70-71	55

Site Code	Name	Identification	Figure no. reference in Appendix 9.1	Page no. reference in Appendix 9.1	Approximate Closest Distance to Works Area (m)
HB-15	Village House, Tai Tei Tong (behind No.41 Tai Tei Tong)	Village house	6	72-73	65
HB-16	Village Well with Associated Shrine	Village Well with Associated Shrine	6	74-75	30
HB-17	Tai Wong Yeh Shrine, Tai Tei Tong	Village God Shrine	6	76-77	20
HB-18	Shrine Under An Old Tree	Old Tree and Associated Shrine	6	78-80	20
HB-19	Village God Shrine, Tai Tei Tong	Village God Shrine	6	81-82	20
HB-20	Sam Gai Yeh Shrine, Tai Tei Tong	Sam Gai Yeh Shrine / Village Boundary God Shrine	6 and 16	83-85	110
HB-21	Mui Wo School, Tai Tei Tong	Entrance Gate, Classrooms, Toilets, and Staff Office	7 and 16	86-87	20
HB-22	Weir, Tai Tei Tong	Weir	6 and 16	88-89	Located within the River Reprofilng area
Mui Wo Kau Tsuen					
HB-23	Village Houses, No.9 Mui Wo Kau Tsuen	Village houses	8	90-92	165
HB-24	Village House, No.10 Mui Wo Kau Tsuen	Village house	8	93-95	185
HB-25	Village House, Mui Wo Kau Tsuen (northwest of No.13 Mui Wo Kau Tsuen)	Village house	8	96-98	185
HB-26	Village House, No.15 Mui Wo Kau Tsuen	Village house	8	99-100	210
HB-27	Village God Shrine, Mui Wo Kau Tsuen	Village God Shrine	8	101	225

Site Code	Name	Identification	Figure no. reference in Appendix 9.1	Page no. reference in Appendix 9.1	Approximate Closest Distance to Works Area (m)
HB-28	Village God Shrine, Mui Wo Kau Tsuen	Village God Shrine	8	102	255
HB-29	Village Wall, Mui Wo Kau Tsuen	Village Wall	8	103-105	225
HB-30	Village God Shrine, Mui Wo Kau Tsuen	Village God Shrine	6 and 8	106-107	165
HB-77	Weir, Mui Wo Kau Tsuen	Agricultural Weir	8	232	205
Chung Hau					
HB-31	Keng Leng Siu Chuk, Ling Tsui Tau, Chung Hau	Village house	10	108-110	75
HB-32	Chapel of the Church of Christ in China – Mui Wo Church	Chapel	10	111-113	50
HB-33	A Building inside the Church of Christ in China – Mui Wo Church	Undetermined due to no access	10	114-115	55
HB-34	Mui Wo Rural Committee	Rural Committee	10	116-119	60
HB-35	Village God Shrine	Village God Shrine	9 to 11	120-121	165
HB-36	Shop House, Yuen Hing Woodwork Store, No. 19 Mui Wo Rural Committee Road	Shop House	10 and 11	122-124	75
HB-37	Shop House and Village House, Nos. 13 and 15 Mui Wo Rural Committee Road	Shop House and Village House	10 and 11	125-126	85
HB-38	Shop House, No.9 Mui Wo Rural Committee Road	Shop House	10 and 11	127-129	100
HB-39	Former Silver Mine Bay Free Rural Hospital, 1 Mui Wo Rural Committee Road	Hospital	10 and 11	130-134	115
HB-40	Village House, No.4 Chung	Village House	10 and 11	135-136	145

Site Code	Name	Identification	Figure no. reference in Appendix 9.1	Page no. reference in Appendix 9.1	Approximate Closest Distance to Works Area (m)
	Hau				
HB-41	Village House, No.56 Chung Hau	Village House	9	137-138	235
HB-42	Shop Houses, Nos.30-31 Mui Wo Chung Hau Street and No.12 Mui Wo Rural Committee Road	Shop Houses	10 and 11	139-141	90
HB-43	No.2 Tung Wan Tau Road	Restaurant	9	142-144	200
HB-44	Village Well, near No.67 Mui Wo Rural Committee Road	Village Well	10	145	75
HB-45	Village House, No. 71 Mui Wo Rural Committee Road	Village House	10	146-148	100
HB-46	Village God Shrine and Kwun Yam Shrine	Village God Shrine and Kwun Yam Shrine	10	149-151	10
HB-47	Old Retaining Wall, Yuen's Mansion, Chung Hau	Retaining Wall	12	152-153	45
HB-48	Animal Pens, Yuen's Mansion, Chung Hau	Animal Pens	12	154-157	45
HB-49	Fish Pond, Yuen's Mansion, Chung Hau	Fish Pond	12	158-159	50
HB-50	Room attached to northeast side of East Watchtower, Yuen's Mansion, Chung Hau	Room providing internal access to East Watchtower	12	160-161	110
HB-51	Well, Chung Hau (between Nos.58 to 59 Chung Hau)	Private Well	9	162-163	285
HB-52	Tai Wong Yeh Shrine, Northwest facing slope of Fu Kong Shan, Chung Hau	Tai Wong Yeh Shrine	15	164-166	235
HB-53	Well and Water Tank, Fu Kong Shan, Chung Hau	Private Well and Water Tank	15	167-169	185
HB-54	Shop Houses and Residential House, Nos. 1 to	Shop Houses and Residential House	14	170-173	105

Site Code	Name	Identification	Figure no. reference in Appendix 9.1	Page no. reference in Appendix 9.1	Approximate Closest Distance to Works Area (m)
	3 Mui Wo Chung Hau Street				
HB-55	Village Houses, Nos. 1 to 8 Yu Kwong Tsuen	Village Houses	14	174-177	150
HB-56	Masonry Building, East of No.7 Fu Kong Shan Road	Undetermined	15	178-180	295
HB-57	Toilets, Northeast of No.7 Fu Kong Shan Road	Toilets	15	181-182	285
HB-58	Lantau South Police Station, No.1 Fu Kong Shan Road	Police Station	15	183-184	210
HB-59	Yeung Boundary Stone	Boundary Stone	9	185-186	260
HB-78	Entrance Gate, Yuen's Mansion, Chung Hau	Entrance Gate	12	233-234	110
Tsoi Yuen Tsuen					
HB-60	Village House, No.4 Tsoi Yuen Tsuen	Village House	6, 8 and 16	187-188	110
HB-61	Village House, No.18 Tsoi Yuen Tsuen	Village House	6 and 16	189-190	85
HB-62	Village House, No.28A Tsoi Yuen Tsuen	Village House	8 and 16	191-193	95
HB-63	Village House, No.30 Tsoi Yuen Tsuen	Village House	8 and 16	194-195	110
HB-64	Village House, Tsoi Yuen, No.40 Tsoi Yuen Tsuen	Village House	16	196-198	35
HB-65	Village House, No. 41 Tsoi Yuen Tsuen	Village House	16	199-201	30
HB-66	Village House with Well, No.42 Tsoi Yuen Tsuen	Village House with Well	16	202-205	10
HB-67	Village House, Tsoi Yuen Tsuen (east of No.43 Tsoi Yuen Tsuen)	Village House	16	206-207	15
HB-68	Kwun Yam Kok, Tsoi Yuen	Kwun Yam Shrine	8 and 16	208-210	110

Site Code	Name	Identification	Figure no. reference in Appendix 9.1	Page no. reference in Appendix 9.1	Approximate Closest Distance to Works Area (m)
	Tsuen				
HB-69	Weir, Tsoi Yuen Tsuen	Agricultural Weir	16	211-212	30
Nim Po Tsuen					
HB-70	Village House, No.8 Nim Po Tsuen	Village house	17	213-215	185
HB-71	Village House, No. 14 Nim Po Tsuen	Village House	17	216-218	220
Ma Po Tsuen					
HB-72	Village House, Ma Po Tsuen (northeast of No.29 Ma Po Tsuen)	Village houses	7	219-221	10
HB-73	Village House, No.25 Ma Po Tsuen	Village House	7	222-224	45
HB-74	Village House, No. 14 Ma Po Tsuen	Village House	7	225-227	60
HB-75	Long Shed, Ma Po Tsuen (Southeast of No.14 Ma Po Tsuen)	Long Shed	7	228-230	45
HB-76	Weir near Ma Po Tsuen	Agricultural Weir	7	231	Located within the proposed fish ladder works area
Cultural Landscape Features					
CL-01	Possible Old Salt Pan, Chung Hau	Salt Pan	3, 12, and 13	235-236	10
CL-02	Fung Shui Woodland, Luk Tei Tong	Fung Shui Woodland	2 to 5	237-238	75
CL-03	Fung Shui Woodland, Tai Tei Tong	Fung Shui Woodland	6	239-240	15
CL-04	Old Nam Shan Path	Old Trail	2 and 5	241-245	115

Site Code	Name	Identification	Figure no. reference in Appendix 9.1	Page no. reference in Appendix 9.1	Approximate Closest Distance to Works Area (m)
CL-05	Battle Site at Silver Mine Beach, Chung Hau	World War II Battle Site	9 and 11	246-247	20
CL-06	Tree Fence, Mui Wo Kau Tsuen	Fung Shui or Village Fence	8 and 16	248-249	175

Archaeological Background

- 9.4.15 According to a previously approved EIA Report for Drainage Improvements in Southern Lantau (Register No.: AEIAR-093/2005), two Sites of Archaeological Interest (SAI), namely Chung Hau SAI and Mang Tong SAI are located approximately 20m and 430m away from the works area of the Project (see **Figure 9.1**). According to the Section of 3.4.10.2 of Appendix H of the EIA Study Brief, the CHIA Assessment Area is defined by a distance of 300m from the boundary of the Project area, therefore Mang Tong SAI will not be included for this CHIA.
- 9.4.16 Archaeological survey and archaeological impact assessment were conducted as part of the cultural heritage impact assessment for the EIA Report (EIAR) for Drainage Improvements in Southern Lantau Investigation approved in 2005 (Register No.: AEIAR-093/2005) (the approved EIAR). According to the approved EIAR (Maunsell, 2005), a total of 44 auger holes and 4 test pits were conducted, while 2 of the test pits were conducted within the Chung Hau SAI. Previous testing in the vicinity of the Luk Tei Tong River and Tai Tei Tong River alignments showed that the areas contained recent sterile alluvial deposits with high water table which is not favourable to archaeological resources accumulation, further testing is not required. In the vicinity of Pak Ngan Heung River, small pottery finds were identified with the auger hole tests and test pits, but the potential impacts would only be limited to the small areas of minor excavation works at Ling Tsui Tau Tsuen within the Chung Hau SAI, and they are separated with a distance of ~22m away from the proposed works.
- 9.4.17 The "Outlying Islands Sewerage Stage 2, Package 1A, Mui Wo Village Sewerage Phase 1"³ cultural heritage impact assessment included an archaeological survey in Mui Wo in 2004, which conducted sixty-five auger holes and seven test pits. The results of the survey suggested that Luk Tei Tong may have been a dwelling area during or before the late Ming dynasty. No artifacts were discovered in TP4 or the auger hole test, but a layer (C09) that can be dated back to the Late Ming Dynasty was identified in TP3, and a layer (C10) containing glazed pottery and red tile shards could even be earlier than layer C09. The location of the test pits and auger holes can be found in **Figure 9.3**. (AECOM, 2022)

³ Horizon Asia Ltd. (2007). Contract No. CM 2004/02 Outlying Islands Sewerage Stage 2, Package 1A, Mui Wo Village Sewerage Phase 1: Cultural Heritage Impact Assessment.

- 9.4.18 As part of the Archaeological Impact Assessment for the CEDD project "Agreement No. CE 63/2006 (CE) Improvement Works for Mui Wo Facelift - Feasibility Study"⁴ in 2008, an archaeological investigation was undertaken. Two test pits were conducted, one each for the proposed cycle parking areas at Luk Tong Tong and Tai Tei Tong. The excavation at Test Pit 1 (TP1) in the village of Luk Tei Tong revealed a sequence of four layers, with the lower three consisting of alluvial deposits containing 19th-century Wun Yiu ceramics. The ceramics indicated that the area may have been used as a rubbish dump during the 19th century. Since the late Qing ceramics found are of low significance, no further archaeological work is required for the proposed cycle parking area at Luk Tei Tong. The location of the test pit is depicted in **Figure 9.3**. (AECOM, 2022)
- 9.4.19 As part of the Environmental Impact Assessment (EIA) for the "Drainage Improvement in Southern Lantau Investigation"⁵, the archaeological potential of the Luk Tei Tong Bypass Channel area was assessed. The evaluation determined that no artifacts were found during the field scan in this area. (AECOM, 2022)
- 9.4.20 As part of the CHIA, under "Agreement No. CE 14/2007 (DS) - Upgrading of Mui Wo Village Sewerage Phase 2 and Mui Wo Sewage Treatment Works - Investigation, Design, and Construction," an assessment was made of the archaeological potential of Luk Tei Tong and Ma Po Tsuen. In December 2020, a field scan was conducted in the general area of Ma Po Tsuen and the joint area of Ma Po Tsuen and Luk Tei Tong, but no artifacts were found due to the low-lying lands and high water table. Another field scan was conducted at the Luk Tei Tong foothill area, revealing the presence of certain archaeological potential by the discovery of sherds of blue-and-white porcelain in the small square in front of the Watchtower. As a result, AWB is suggested to be conducted in six areas in the Luk Tei Tong foothill area, which are located within the current CHAA but are separated by a considerable distance from the works area of the current Project. The location of the field scans and proposed AWB areas are shown in **Figure 9.3**. (AECOM, 2022)
- 9.4.21 Most of the river sections of Luk Tei Tong River, Tai Tei Tong River and tributary of Tai Tei Tong River have been channelized and disturbed. Thus, the works area of the Project at the river sections mentions above are of no archaeological potential, no archaeological impacts arising from the project is anticipated. Location of archaeological investigated areas are shown in **Figure 9.3**. Besides, remaining works area of the Project at Nam Bin Wai, Chung Hau, Ling Tsui Tau and Ma Po Tsuen are mainly located in developed areas of existing impact with ground disturbance. Thus, the remaining works area of the Project are also of no archaeological potential, no archaeological impacts arising from the project is anticipated.

⁴ CEDD. (2008). Agreement No. CE 63/2006 (CE) Improvement Works for Mui Wo Facelift - Feasibility Study: Final Archaeological Impact Assessment Study Report.

⁵ DSD. (2005). Agreement No. CE 49/2002(DS), Drainage Improvement in Southern Lantau Investigation, Final Environmental Impact Assessment: Cultural Heritage Impact Assessment.

- 9.4.22 As no archaeological impact is anticipated, no mitigation measure is required. However, the Antiquities and Monuments Office (AMO) should be informed immediately in case of discovery of antiquities or supposed antiquities under the A&M Ordinance (Cap. 53) during the course of works.

9.5 Built Heritage Impact Assessment under Cultural Heritage Impact Assessment

Proposed Works of the Project

Tai Tei Tong River

- 9.5.1 Improvement of Tai Tei Tong River including construction of flood wall, reconstruction gabion walls, river reprofiling and associated works, modification of agricultural weirs and construction of fish ladder.

Nam Bin Wai, Chung Hau, Ling Tsui Tau and Ma Po Tsuen

- 9.5.2 Proposed works includes construction of cross bridge across Pak Ngan Heung River, the stormwater pumping station and the associated drainage works, the diversion box culvert from Tai Tei Tong River to Luk Tei Tong Bypass Channel, and the tide gate and the other associated works at River Silver.

Luk Tei Tong River (South) and Luk Tei Tong Bypass Channel

- 9.5.3 Proposed works includes reconstruction of gabion walls, construction of box culvert, mechanical penstocks and associated works and river revitalisation and associated works.

Built Heritage Impact Assessment

Construction Phase

- 9.5.4 As there is no declared or proposed monuments and Government historic sites identified by AMO in the CHAA, no impact to built heritage resources is anticipated.
- 9.5.5 All of the graded historic sites/buildings/structures listed in **Table 9.1** are located over 70m from the works area of the Project. Due to adequate separate distance between the proposed works (construction of proposed stormwater drain in Ma Po Tsuen and floodwall in Luk Tei Tong), Yuan's Mansion and Watchtower of Luk Tei Tong, no direct and indirect impacts are anticipated.
- 9.5.6 Potential direct impact to the majority of the built heritage items identified and listed in **Table 9.2** is not anticipated due to adequate separate distance (over 50m) between the proposed works and built heritage items.

- 9.5.7 However, 2 agricultural weirs are located within works area of the proposed river reprofiling work (HB-22) and fish ladder works (HB-76) at Tai Tei Tong River. The existing agricultural weirs are not favour for fish movement from downstream to upstream as there is significant gradient different. As such, the agricultural weir (HB-76) will be modified with consideration of fish movement based on the reprofiled level while fish ladder will be construct at the agricultural weir (HB-76) to enhance the fish movement. The works will bring direct modification to the existing agricultural weirs.
- 9.5.8 Another 18 built heritage items are located relatively closer to proposed works area. In Luk Tei Tong, Fuk Tak Shrine (HB-10) is located ~45m away from the proposed floodwall; in Tai Tei Tong, 2 village houses (HB-12 and HB-13) and 4 shrines (HB-16, HB-17, HB-18 and HB-19) are located approximately 20m to 40m away from proposed diversion drain, and Mui Wo School (HB-21) are located ~20m away from proposed floodwall; in Chung Hau, Village God Shrine and Kwun Yam Shrine (HB-46) are located ~10m away, and the old retaining wall of Yuen's Mansion (HB-47) and Animal Pens (HB-48) are located ~45m away from the proposed stormwater drain; in Tsoi Yuen Tsuen, 4 village houses (HB-64, HB-65, HB-66 and HB-67) are located approximately 10m to 35m away from the proposed floodwall, and a weir is located ~30m away from the proposed river reprofiling area; in Ma Po Tsuen, 2 villages houses (HB-72 and HB-73) and a long shed (HB-75) are located approximately 10m to 45m from proposed works areas. Due to the minor construction nature of drain construction, modification and reconstruction of flood walls, no direct impact and vibration impacts to the mentioned 18 built heritage items are anticipated.
- 9.5.9 Besides, 3 cultural landscape features including a possible old salt pan in Chung Hau (CL-01), a fung shui woodland in Tai Tei Tong (CL-03) and a battle site at Silver Mine Beach (CL-05) are located relatively close to the proposed works area, at distances of 10m to 20m. As no works are proposed within the cultural landscape features, no direct or indirect impacts are anticipated.

Operational Phase

- 9.5.10 No direct or indirect built heritage impacts are anticipated.

9.6 Mitigation Measures

Archaeological Mitigation Measures

Construction Phase

- 9.6.1 Chung Hau SAI is found within the CHAA, at a distance of about 20m from the proposed works area of the Project. No excavation works of the project will exist in or adjacent to the SAI, therefore no adverse archaeological impact due to the proposed development is anticipated and thus, no mitigation measure is required.
- 9.6.2 As mentioned in **Sections 9.4.15 to 9.4.21**, no archaeological potential area has been identified within proposed works area of the Project, no archaeological impact arising from the proposed work is anticipated. Therefore, no mitigation measure is required.

- 9.6.3 As a precautionary measure, the project proponent and his/her contractor are required to inform AMO immediately when any antiquities or supposed antiquities under the A&M Ordinance (Cap. 53) are discovered during the course of works.

Operational Phase

- 9.6.4 No excavation works of the Project will be involved in operational phase, no adverse archaeological impact is anticipated. Thus, no mitigation measure is required.

Built Heritage Mitigation Measures

Construction Phase

- 9.6.5 Since no declared or proposed monuments and Government historic sites identified by AMO has been identified, no impact to these cultural heritage resources is anticipated. Thus, no mitigation measure is required for these cultural heritage resources.

- 9.6.6 Seven (7) graded historic sites/buildings/structures identified in the CHAA are located over 70m from the boundary of Works Area. Due to adequate separate distance between the proposed works and graded historic sites/buildings/structures, no impact is anticipated. However, Special attention should be paid to avoid adverse physical impact arising from the proposed works to these graded historic sites/buildings/structures. Design proposal, method of works and choice of machinery should be targeted to minimize adverse impacts to them. Any vibration and building movement induced from the proposed works should be strictly monitored to ensure no disturbance and physical damages made to them during the course of works. Monitoring proposal for the heritage sites, including checkpoint locations, installation details, response actions for each of the Alert/ Alarm/ Action (3As) levels and frequency of monitoring should be submitted for AMO's consideration. Recommended 3As levels for these graded historic sites/buildings/structures are as shown below:

Type of Monitoring for	Alert	Alarm	Action
Vibration (PPV)	5mm/s	6mm/s	7.5mm/s
Settlement	6mm	8mm	10mm
Tilting	1/2000	1/1500	1/1000

(Note: Monitoring criteria would be subjected to review upon updates of grading status of heritage sites.)

Installation of monitoring checkpoints shall be carried out in great care and adequate protection shall be provided so as to avoid unnecessary disturbance / damage to nearby historic fabrics. Photo records of monitoring checkpoints shall be submitted upon installation for AMO's records; Monitoring records should be submitted to AMO on regular basis and alert AMO should the monitoring reach Alert/ Alarm/ Action levels; and pre and post condition survey should be carried out to record conditions of these graded historic sites/buildings/structures and survey reports should be submitted for AMO's record.

- 9.6.7 Apart from two agricultural weirs (HB- 22 and HB-76), potential direct impact to the built heritage items identified and listed in **Table 9.2** is not expected to be anticipated due to adequate separate distance between the proposed works and built heritage items. HB- 22 and HB-76 are located within works area of the proposed river reprofiling work and fish ladder works at Tai Tei Tong River. Modification of the agricultural weirs and construction of fish ladder are proposed on site in order to achieve beneficial ecological impact like improvement of the river hydraulic performance and fish movement. The existing agricultural weirs (HB-22 and HB-76) are constructed with concrete and have already undergone various modification and repair works. For instance, HB-22 was modified with wide steps at downstream in 1960s and a further modification in 1970s; while HB-76 underwent significant modification in the early of 1990s, only two concrete block and floor steps remained on site. Hence, their cultural heritage significance are considered relatively low due to high level of modifications underwent. Therefore, although the modification of the agricultural weir and construction of fish ladder of this project will bring direct impact to the weirs, the impact would be acceptable with mitigation measures. It is recommended that cartographic and photographic records be conducted to record the weirs prior to commencement of modification works.

Operational Phase

- 9.6.8 No direct and indirect impacts are anticipated from the proposed new water drains and river revitalization works in the operational phase. No mitigation measure is required.

9.7 Residual and Cumulative Impacts

- 9.7.1 With the implementation of the recommended mitigation measures, no adverse residual cultural heritage impact is anticipated.
- 9.7.2 No cumulative cultural heritage impact is anticipated.

9.8 Environmental Monitoring & Audit

Archaeology

Construction Phase

- 9.8.1 As a precautionary measure, the project proponent and his/her contractor are required to inform AMO immediately when any antiquities or supposed antiquities under the A&M Ordinance (Cap. 53) are discovered during the course of works.

Operational Phase

- 9.8.2 No excavation works of the Project will be involved in operational phase, therefore no adverse archaeological impact is anticipated. Thus, no EM&A is required.

Built Heritage

Construction Phase

- 9.8.3 Any vibration and building movement induced from the proposed works adjacent to the seven (7) graded historic sites/buildings/structures located over 70m from the boundary of Works Area should be strictly monitored to ensure no disturbance and physical damages made to them during the course of works. Monitoring proposal for them, including checkpoint locations, installation details, response actions for each of the Alert/ Alarm/ Action (3As) levels and frequency of monitoring should be submitted for AMO's consideration. Installation of monitoring checkpoints shall be carried out in great care and adequate protection shall be provided so as to avoid unnecessary disturbance / damage to nearby historic fabrics. Photo records of monitoring checkpoints shall be submitted upon installation for AMO's records; Monitoring records should be submitted to AMO on regular basis and alert AMO should the monitoring reach Alert/ Alarm/ Action levels; and pre and post condition survey should be carried out to record conditions of the heritage sites and survey reports should be submitted for AMO's record.
- 9.8.4 Apart from 2 agricultural weirs (HB- 22 and HB-76), potential direct impact to the built heritage items identified and listed in **Table 9.2** is not anticipated due to adequate separate distance between the proposed works and built heritage items. HB-22 and HB-76 are located within works area of the proposed river reprofiling work and fish ladder works at Tai Tei Tong River. Modification of the agricultural weirs and construction of fish ladder are proposed on site in order to achieve beneficial ecological impact like improvement of the river hydraulic performance and fish movement. Although the modification works will bring direct impact to the weirs, the impact would be acceptable with mitigation measures. It is recommended that cartographic and photographic records be conducted to record the weirs prior to commencement of modification works.

Operational Phase

- 9.8.5 No direct and indirect impacts are anticipated from the proposed new water drains and river revitalization works in the operational phase. No EM&A is required.

9.9 Conclusion

- 9.9.1 Chung Hau SAI is found within the CHAA, at a distance of about 20m within the works area of the Project. No excavation works of the project will exist in or adjacent to the SAI, therefore no adverse archaeological impact due to the proposed development is anticipated and thus, no mitigation measure is required.
- 9.9.2 No archaeological potential area has been identified within the works area. No archaeological impact is anticipated and thus no mitigation measures is required.
- 9.9.3 As a precautionary measure, the project proponent and his/her contractor are required to inform AMO immediately when any antiquities or supposed antiquities under the A&M Ordinance (Cap. 53) are discovered during the course of works.

- 9.9.4 Desktop review supplemented by built heritage survey identified no declared or proposed monuments and Government historic sites identified by AMO in the CHAA. No impact to these items is anticipated and thus no mitigation measures is required for these items.
- 9.9.5 Seven (7) graded historic sites/buildings/structures identified in the CHAA are located over 70m from the boundary of Works Area. Due to adequate separate distance between the proposed works and graded historic sites/buildings/structures, no impact is anticipated. However, Special attention should be paid to avoid adverse physical impact arising from the proposed works to them. Design proposal, method of works and choice of machinery should be targeted to minimize adverse impacts to them. Any vibration and building movement induced from the proposed works should be strictly monitored to ensure no disturbance and physical damages made to them during the course of works. Monitoring proposal for them, including checkpoint locations, installation details, response actions for each of the Alert/ Alarm/ Action (3As) levels and frequency of monitoring should be submitted for AMO's consideration.
- 9.9.6 Potential direct impact to the built heritage items identified and listed in **Table 9.2** except HB-22 and HB-76 (two agricultural weirs) is not anticipated due to adequate separate distance between the proposed works and the built heritage items.
- 9.9.7 Two agricultural weirs, HB- 22 and HB-76, are located within works area of the river reprofiling work and proposed fish ladder works in Tai Tei Tong River. Modification of the agricultural weirs and construction of fish ladder are proposed on site in order to achieve beneficial ecological impact like improvement of the river hydraulic performance and fish movement. The agricultural weirs (HB-22 and HB-76) are constructed with concrete and have already undergone various modification and repair works. For instance, HB-22 was modified with wide steps at downstream in 1960s and a further modification in 1970s; while HB-76 underwent significant modification in the early of 1990s, only two concrete block and floor steps remained on site. Hence, their cultural heritage significance is relatively low due to high level of modifications underwent. Therefore, although the modification of the agricultural weir and construction of fish ladder of this project will bring direct impact to the weirs, the impact would be acceptable with mitigation measures. It is recommended that cartographic and photographic records be conducted to record the weirs prior to commencement of modification works.
- 9.9.8 The operational phase of the Project involves no excavation works, no cultural heritage impact is anticipated and thus, no mitigation measure is required.

9.10 Bibliography

Chinese

- 9.10.1 甘水容,邱逸 2016 《梅窩百年：老村、荒牛、人》，中華書局

English

- 9.10.2 Horizon Asia Ltd. (2007). Contract No. CM 2004/02 Outlying Islands Sewerage Stage 2, Package 1A, Mui Wo Village Sewerage Phase 1: Cultural Heritage Impact Assessment
- 9.10.3 CEDD. (2008). Agreement No. CE 63/2006 (CE) Improvement Works for Mui Wo Facelift - Feasibility Study: Final Archaeological Impact Assessment Study Report.
- 9.10.4 AECOM. (June 2022) Supplementary Review for Cultural Heritage Impact Assessment under Agreement No. CE 14/2007 (DS) - Upgrading of Mui Wo Village Sewerage Phase 2 and Mui Wo Sewage Treatment Works – Investigation, Design and Construction

Internet

- 9.10.5 Antiquities and Monuments Office. Declared Monuments in Hong Kong (as at 20 May 2022) [available from: https://www.amo.gov.hk/filemanager/amo/common/form/DM_Mon_List_e.pdf; accessed on 20 April 2023]
- 9.10.6 Antiquities and Monuments Office. List of Sites of Archaeological Interest in Hong Kong (as at Nov 2012) [available from: https://www.amo.gov.hk/filemanager/amo/common/form/list_archaeolog_sites.pdf; accessed on 20 April 2023]
- 9.10.7 Antiquities and Monuments Office. List of the 1,444 Historic Buildings with Assessment Results (as at 9 March 2023). [available from: https://www.aab.gov.hk/filemanager/aab/en/content_29/AAB-SM-chi.pdf; accessed on 20 April 2023]
- 9.10.8 Antiquities and Monuments Office. Government Historic Sites Identified by AMO (as at May 2022). [available from: https://www.amo.gov.hk/filemanager/amo/common/form/build_hia_government_historic_sites.pdf; accessed on 22 March 2023]
- 9.10.9 Maunsell. 2005. Agreement No. CE 49/2002(DS), Drainage Improvement in Southern Lantau Investigation, Final Environmental Impact Assessment Report for Drainage Services Department [available from: https://www.epd.gov.hk/eia/register/report/eiareport/eia_1102005/eia_report/HTML/TOC.htm; accessed on 20 April 2023]
- 9.10.10 B&V, ERM, 2016. Outlying Islands Sewerage Stage 2 – South Lantau Sewerage Works: EIA report [available from: https://www.epd.gov.hk/eia/register/report/eiareport/eia_2462016/EIA%20PDF/PDF/S11.pdf; accessed on 20 April 2023]
- 9.10.11 Mui Wo Silver Mine. [available from <https://industrialhistoryhk.org/mui-wo-silver-mine-part-2-the-mine>; accessed on 20 April 2023]

Map

9.10.12 HKMS 1993, Sheet Number 10-SW-17A

9.10.13 HKMS 1987, Sheet Number 10-SW-17A