

**HERITAGE IMPACT ASSESSMENT IN RESPECT OF SITE FORMATION  
AND INFRASTRUCTURE WORKS FOR PUBLIC HOUSING  
DEVELOPMENTS AT MA ON SHAN TSUEN ROAD –  
INVESTIGATION, DESIGN AND CONSTRUCTION**

**BACKGROUND**

Civil Engineering and Development Department (CEDD) commissioned an Engineering Feasibility Study (EFS), “Site Formation and Infrastructural Works for Eight Housing Sites in Ma On Shan – Feasibility Study” (Agreement No. CE 80/2014 (CE)), in April 2015 to ascertain the technical feasibility of the potential sites for the public and private housing developments. Several sites at the mid-level of Mount Ma On Shan along the Ma On Shan Tsuen Road (MOSTR) have been identified as potential sites for public housing developments to suit the local community. Based on this result, CEDD is tasked to carry out the corresponding investigation, detailed design and implementation of site formation and infrastructure works so as to handover the sites to the implementation agents for construction of public housing and other supporting infrastructures. As such, CEDD commissioned a consultancy agreement, “Site Formation and Infrastructure Works for Public Housing Developments at Ma On Shan Tsuen Road – Investigation, Design and Construction” (Agreement No. CE20/2020(CE)) (the “Project”). The limits of works area are as shown on **Appendix A**.

2. A number of graded historic buildings and other heritage resources have been identified in close vicinity of the limits of works area. A study on potential heritage impact due to the proposed works of the Project had been conducted with a view to minimize the impact on these graded historic buildings and other heritage resources as far as possible with proposed mitigation measures.

3. Main elements of works of the Project include the followings:

- Site formation works for public housing development site in the lower portion of MOSTR;
- site formation works for the service reservoir site in the upper portion of MOSTR and the pumping station site in the lower portion of MOSTR;
- roadworks, waterworks, drainage, sewerage, necessary mitigation works and other ancillary works; and

- assessment on graded historic buildings and other heritage resources that may be affected by the construction and operation of site formation and associated infrastructure works.

4. The Heritage Impact Assessment (HIA) for this Project focused on known and associated Ma On Shan Mining features located within 50 metres (the “Assessment Area”) of the limits of works area of the Project. The recorded graded historic buildings and other heritage resources are listed in **Tables 1 and 2**.

## HERITAGE IMPACT ASSESSMENT

### A. Background

5. In accordance with the HIA Mechanism stipulated in Development Bureau Technical Circular (Works) No. 1/2022, the works agent has to confirm with the Antiquities and Monuments Office (AMO) if there are any Sites of Archaeological Interest (SAIs), declared monuments, proposed monuments, sites and buildings graded by the Antiquities Advisory Board (AAB), or Government historic sites identified by AMO (hereafter together referred to as “heritage sites”) within or in close vicinity of the project boundary.

### B. Identified Heritage Sites

#### Graded historic building

6. A summary showing the graded historic buildings within the Assessment Area of the HIA (**Figures 1-4**) is presented in **Table 1** below.

**Table 1. Summary of graded historic buildings within the Assessment Area**

HIA Report item	Heritage Site	Remarks	Mitigation Measures
GB-01 Grade 3	The Site Structures at Mining Settlement in Shun Yee San Tsuen, Ma On Shan Iron Mine, Sha Tin, New Territories ( <b>Figure 1</b> )	Outside the limits of works area.	Preserved in-situ

HIA Report item	Heritage Site	Remarks	Mitigation Measures
<b>GB-02</b> Grade 2	The Exterior Wall of 110ML (1963) part of Grade 2 Historic Structure Exterior walls of 240 ML and 110 ML, Ma On Shan Iron Mine		
	<ul style="list-style-type: none"> <li>• <b>GB-02-1</b> (110 ML exterior walls and portal) (<b>Figure 2</b>)</li> </ul>	Outside the limits of works area.	Preserved in-situ
	<ul style="list-style-type: none"> <li>• <b>GB-02-2</b> (Office) (<b>Figure 2</b>)</li> </ul>	Outside the limits of works area.	Preserved in-situ
	<ul style="list-style-type: none"> <li>• <b>GB-02-3</b> (Engine room) (<b>Figure 2</b>)</li> </ul>	Outside the limits of works area.	Preserved in-situ
	<ul style="list-style-type: none"> <li>• <b>GB-02-4</b> (Tail tracks) (<b>Figure 2</b>)</li> </ul>	Outside the limits of works area.	Preserved in-situ
<b>GB-03</b> Grade 3	Mineral Preparation Plant, Ma On Shan Iron Mine, Sha Tin, New Territories		
	<ul style="list-style-type: none"> <li>• <b>GB-03-1</b> (Main Mineral Preparation Plant (MPP) building) (<b>Figure 3</b>)</li> </ul>	Outside the limits of works area.	Preserved in-situ
	<ul style="list-style-type: none"> <li>• <b>GB-03-2</b> (Structure for stock-piles) (<b>Figure 3</b>)</li> </ul>	Outside the limits of works area.	Preserved in-situ
	<ul style="list-style-type: none"> <li>• <b>GB-03-3</b> (An office set up there to supervise the operation of the ore-dressing plant) (<b>Figure 3</b>)</li> </ul>	Outside the limits of works area.	Preserved in-situ

HIA Report item	Heritage Site	Remarks	Mitigation Measures
	<ul style="list-style-type: none"> <li><b>GB-03-4, GB-03-5</b> (Pillars forming connection between 110ML portal and MPP) (<b>Figure 3</b>)</li> </ul>	Outside the limits of works area.	Preserved in-situ
	<ul style="list-style-type: none"> <li><b>GB-03-6</b> (Water tank) (<b>Figure 4</b>)</li> </ul>	Outside the limits of works area.	Preserved in-situ

#### Other heritage resources

7. Other than graded historic buildings mentioned above, other heritage resources associated with Ma On Shan Mine are located within or in close vicinity of the Assessment Area of the HIA (**Figures 2-5**). A summary of other heritage resources is presented in **Table 2** below.

**Table 2. Summary of other heritage resources within / in close vicinity of the Assessment Area**

HIA Report item	Heritage Site	Remarks	Mitigation Measures
HB-01	Toilet marked on 1969 map ( <b>Figure 2</b> )	Within the limits of works area.	Preserved in-situ
HB-02	Remains of building/location to store or repair ore bearing carts ( <b>Figure 2</b> )	Within the limits of works area.	Preserved in-situ
HB-03	Electric transformer building ( <b>Figure 3</b> )	Within limits of works area.	Preserved in-situ
HB-04	Electric Sub-station ( <b>Figure 3</b> )	Outside the limits of works area.	Preserved in-situ

HB-05	Stone foundation of a temporary structure visible on 1963 and 1964 aerial photos <b>(Figure 3)</b>	Outside the limits of works area.	Preserved in-situ
HB-06	Collapsed building, function not known but is visible on 1963 aerial photo <b>(Figure 3)</b>	Outside the limits of works area.	Preserved in-situ
HB-07	Toilet built <b>(Figure 3)</b>	Outside the limits of works area.	Preserved in-situ
HB-08	Concrete retaining wall with buttress <b>(Figure 3)</b>	Within limits of works area.	Preserved in-situ
HB-09A	Another pillar forming connection between 110ML portal and mineral preparation plant <b>(Figure 3)</b>	Outside the limits of works area.	Preserved in-situ
HB-09B and HB-09C	Two further pillars recorded to the west of the Mineral Preparation Plant <b>(Figure 3)</b>	Outside the limits of works area.	Preserved in-situ
HB-10	Stone and concrete retaining wall <b>(Figure 3)</b>	Within limits of works area.	Preserved in-situ
HB-11	Water tank <b>(Figure 3)</b>	Outside the limits of works area	Preserved in-situ
HB-12	Former thickener tank <b>(Figure 3)</b>	Outside the limits of works area.	Preserved in-situ
HB-13	Two sets of stairs part of the main MPP <b>(Figure 3)</b>	Outside the limits of works area.	Preserved in-situ

HB-14	Transmission building connected to main MPP by overhead conveyor belt <b>(Figure 3)</b>	Outside the limits of works area.	Preserved in-situ
HB-15	Concrete solid support for rail track. <b>(Figure 3)</b>	Outside the limits of works area.	Preserved in-situ
HB-16	Concrete and stone support for rail track with stone barrier wall.  Support part of the first electric train operation in Hong Kong <b>(Figure 4)</b>	Outside the limits of works area.	Preserved in-situ
HB-17	Stone retaining wall next to main road above water tank <b>(Figure 4)</b>	Outside the limits of works area.	Preserved in-situ
HB-18	Small stone building next to water tank <b>(Figure 4)</b>	Outside the limits of works area.	Preserved in-situ
HB-19	Pipeline with retaining wall on steep slopes <b>(Figure 4)</b>	Outside the limits of works area.	Preserved in-situ
HB-20	Catchwater <b>(Figure 4)</b>	Outside the limits of works area.	Preserved in-situ
HB-21	Catchwater tank <b>(Figure 4)</b>	Outside the limits of works area.	Preserved in-situ
HB-22	Ore waste dump <b>(Figure 5)</b>	Within the limits of works area.	Preserved in-situ

HB-23a and HB-23-b	Village houses ( <b>Figure 5</b> )	Outside the limits of works area.	Preserved in-situ
HB-24	Village house ( <b>Figure 5</b> )	Outside the limits of works area.	Preserved in-situ
HB-25	Village house ( <b>Figure 5</b> )	Outside the limits of works area.	Preserved in-situ
HB-26	Village house ( <b>Figure 5</b> )	Within the works area of construction of service reservoir.	To be preserved by record before demolition
G-01	A Qing dynasty grave dated to 13 <sup>th</sup> year of Guangxu period of (1884) Yau family ( <b>Figure 5</b> )	Outside the limits of works area.	Preserved in-situ

### C. Assessment of Heritage Impact

#### Graded historic buildings

8. The impact on graded historic buildings of Ma On Shan Mine are avoided for structures located within the limits of works area or within the wider Assessment Area. Nevertheless, rail tracks (GB-02-4) belonging to the first electric train operation in Hong Kong may be indirectly affected, in addition to the potential for further track (buried for instance) cannot be discounted.

9. Indirect impact is anticipated on the following five Graded Historic Buildings:

- The Site Structures at Mining Settlement in Shun Yee San Tsuen, Ma On Shan Iron Mine, Sha Tin, New Territories (GB-01-1);
- 110 ML exterior walls and portal (GB-02-1);
- Office (GB-02-2);
- Engine Room (GB-02-3); and
- Tail Tracks (GB-02-4).

### Other heritage resources

10. Twenty-seven items of other heritage resources have been identified within the Assessment Area, of which twenty are located outside the limits of works area or at sufficient distance that will not be impacted by proposed works. The remaining items of other heritage resources may be indirectly impacted by works of the Project.

11. Direct impact is anticipated on one item of other heritage resources (HB-26 - village house), while indirect impact is anticipated on the following six items of other heritage resources:

- Toilet marked on 1969 map (HB-01);
- Remains of building/location to store or repair ore bearing carts (HB-02);
- Electric Sub-station (HB-04);
- Another pillar forming connection between 110ML portal and mineral preparation plant (HB-09A);
- Stone and concrete retaining wall (HB-10); and
- Village house (HB-25).

### **D. Mitigation Measures**

12. The HIA identifies that one item of other heritage resources (HB-26 - village house) is within the works area of construction of service reservoir and can under the current design not be preserved *in situ*. It is recommended that this village house with low heritage significance can be preserved by record, such as photographic, video and cartographic records as well as 3D scanning of the interior and exterior should be carried out prior to the site clearance/ demolition of the Project.

13. The recommended mitigation measures are condition surveys before the construction phase and monitoring of vibration, settlement and tilting, as well as setting up of buffer zones and use of protective covering for the graded historic buildings and other heritage resources near the construction works. Access to the heritage sites outside the limits of works areas should be retained and clearly marked to avoid endangering the public during the construction works.

14. It is further recommended that the design of the housing developments which currently, focuses on affordable housing supply in Hong Kong considers enhancement proposals for Ma On Shan Mine such as setting and retaining ongoing public access to the heritage sites.

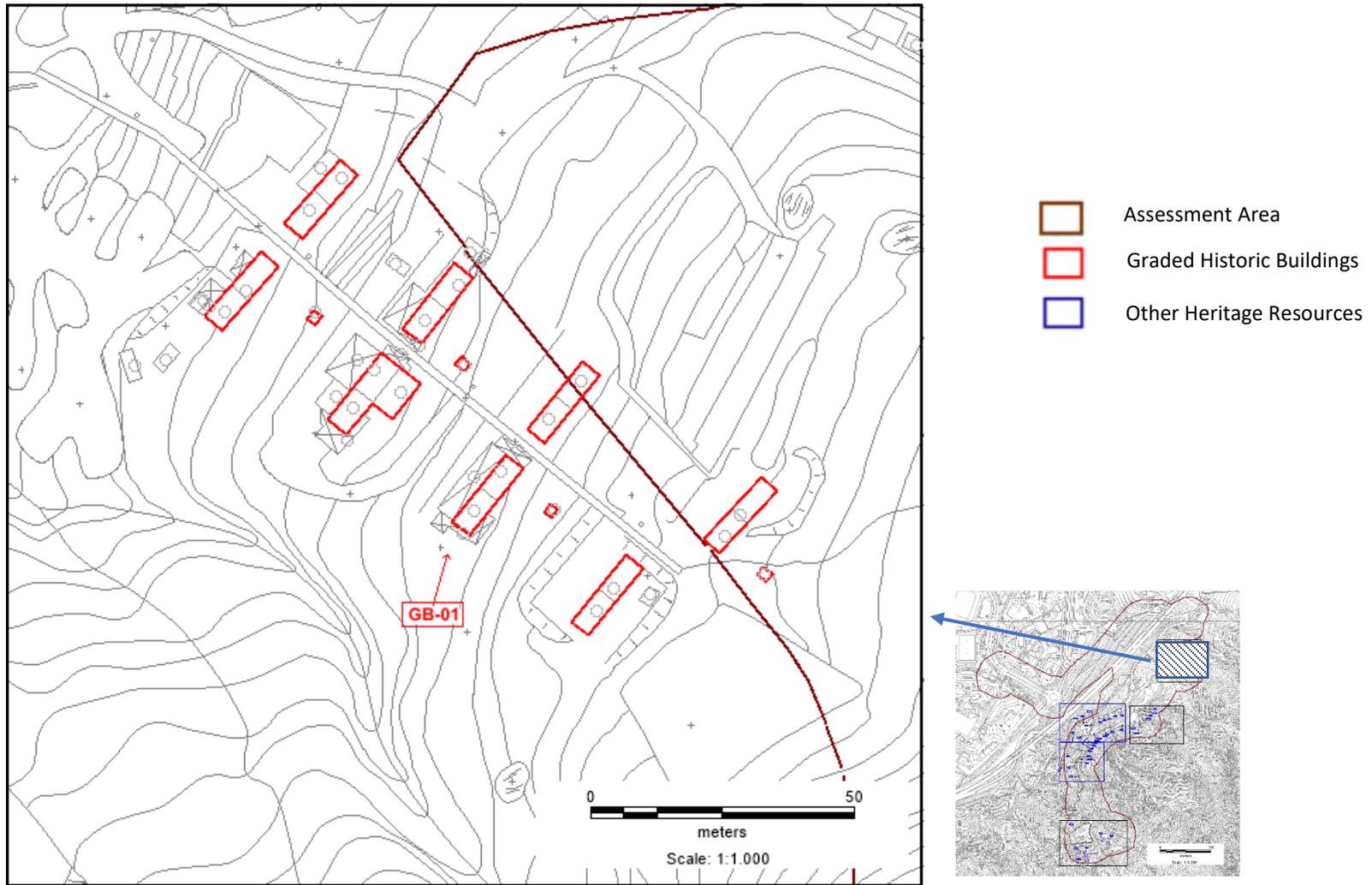
## **CONCLUSION**

15. It is considered that the Ma On Shan Mining Landscape has educational, public and historic value as it is one of the first commercial mining landscape to be developed in Hong Kong and has strong ties to the local community. Integration of the mining landscape into the public housing is encouraged.

16. With the exception of one item of other heritage resource to be demolished, no impacts are caused on the graded historic buildings and remaining items of other heritage resources. It is deemed acceptable to preserve the village house (HB-26) by record only, such as photographic, video and cartographic records as well as 3D scanning of the interior and exterior.

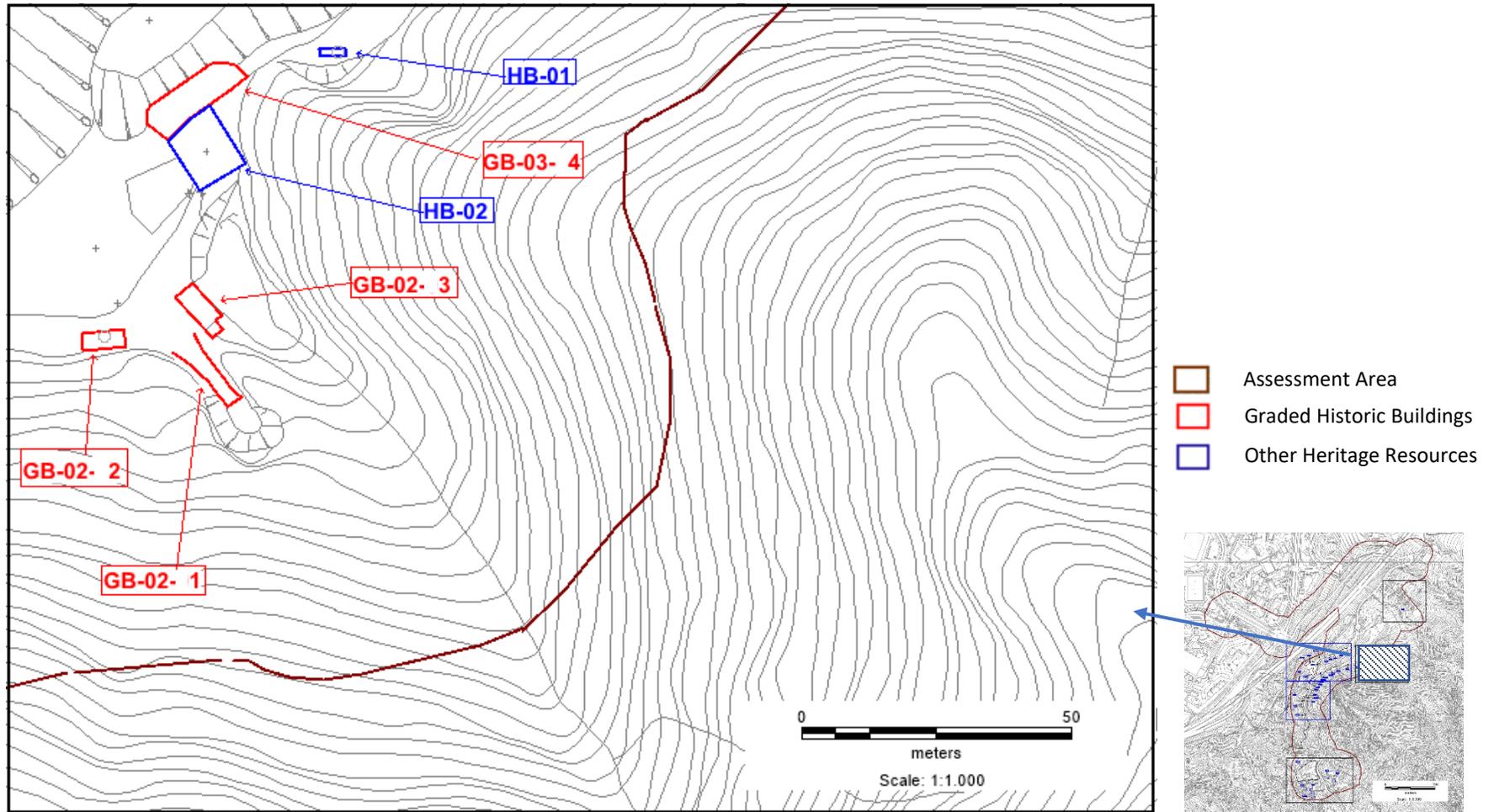
Civil Engineering Development Department

August 2023

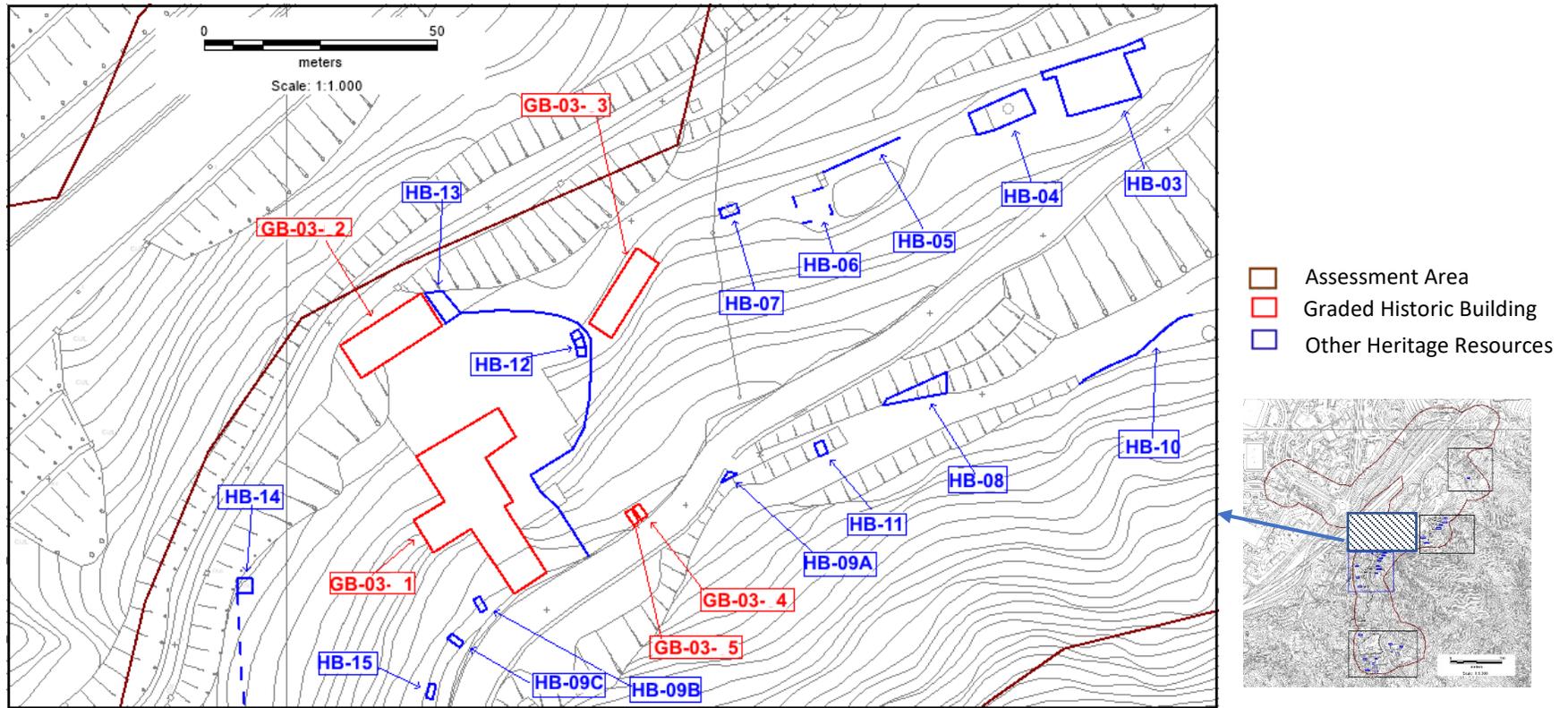


**Figure 1**  
**3 Historic Structure**

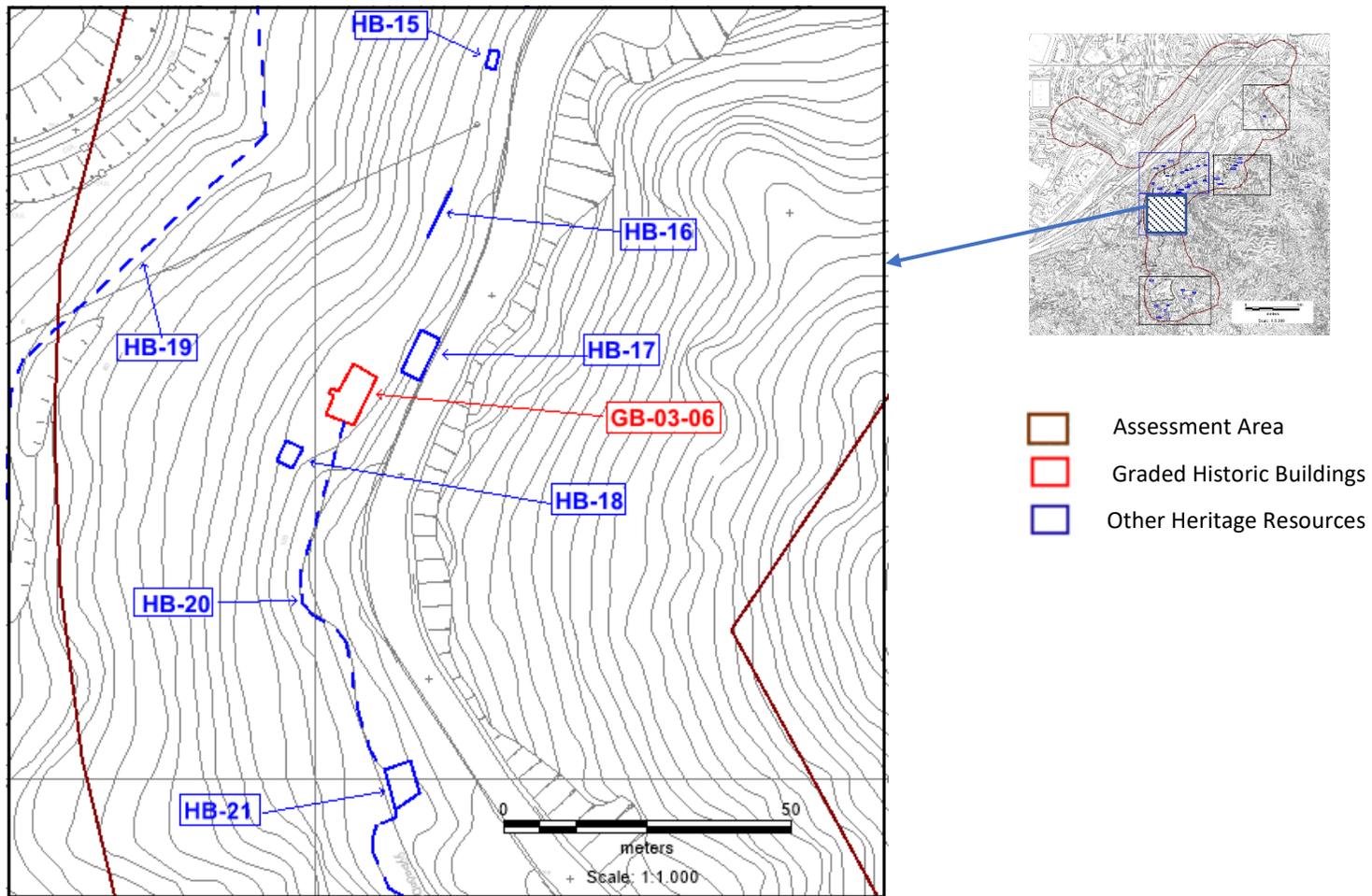
**GB-01 – the Site Structures at Mining Settlement (Shun Yee San Tsuen), Ma On Shan Iron Mine, Sha Tin, N.T. Grade**



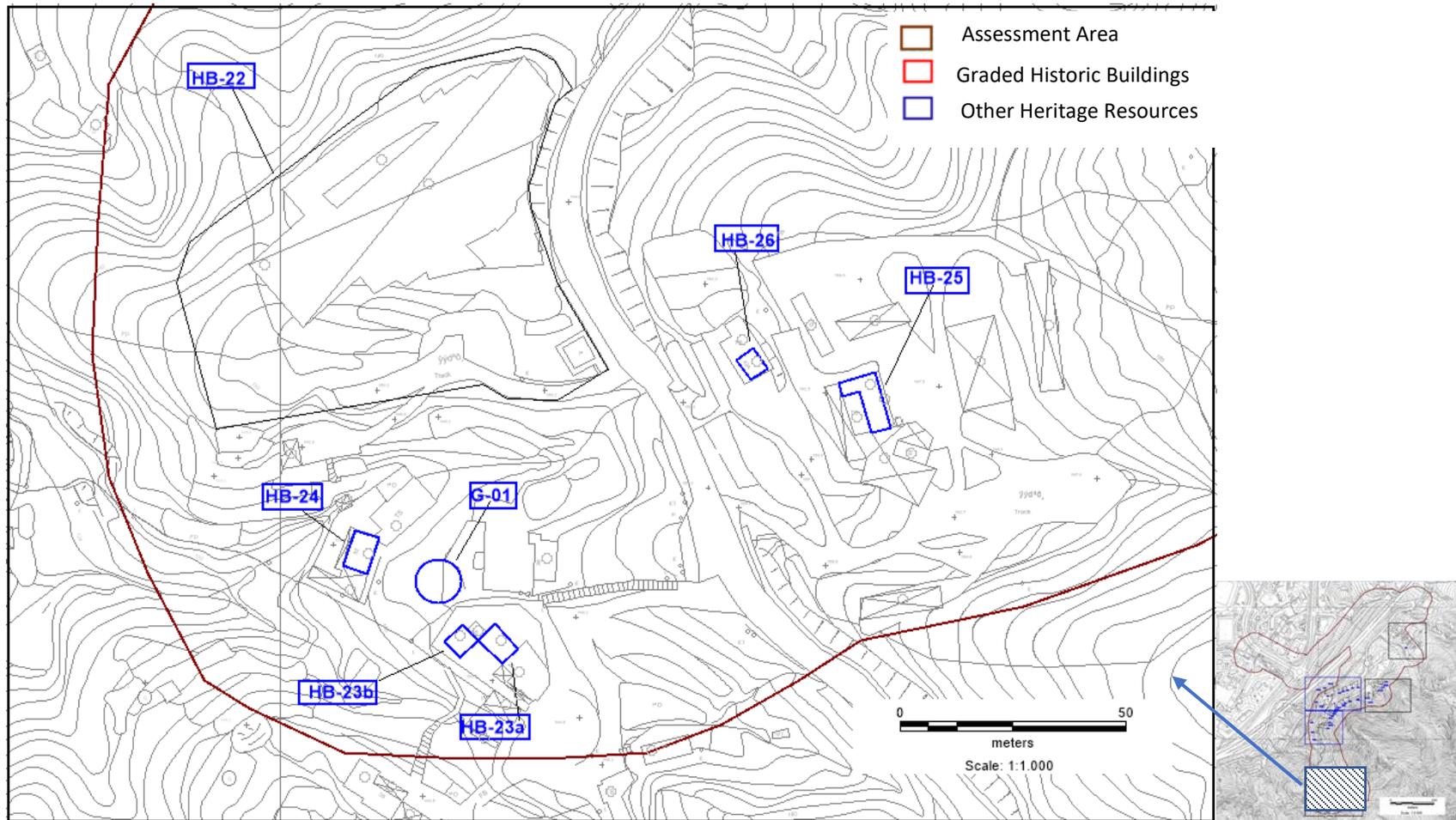
**Figure 2** *The Exterior Wall of 110ML (1963) part of Grade 2 Historic Structure Exterior walls of 240 ML and 110 ML, Ma On Shan Iron Mine, Sha Tin, N.T.; including GB-02-1: 110 ML exterior walls and portal; GB-02-2: Office; GB-02-3: Engine room; GB-02-4: Rail tracks, and other heritage resources: HB-01: Toilet building and HB-02: Remains of building/location to store or repair ore bearing carts.*



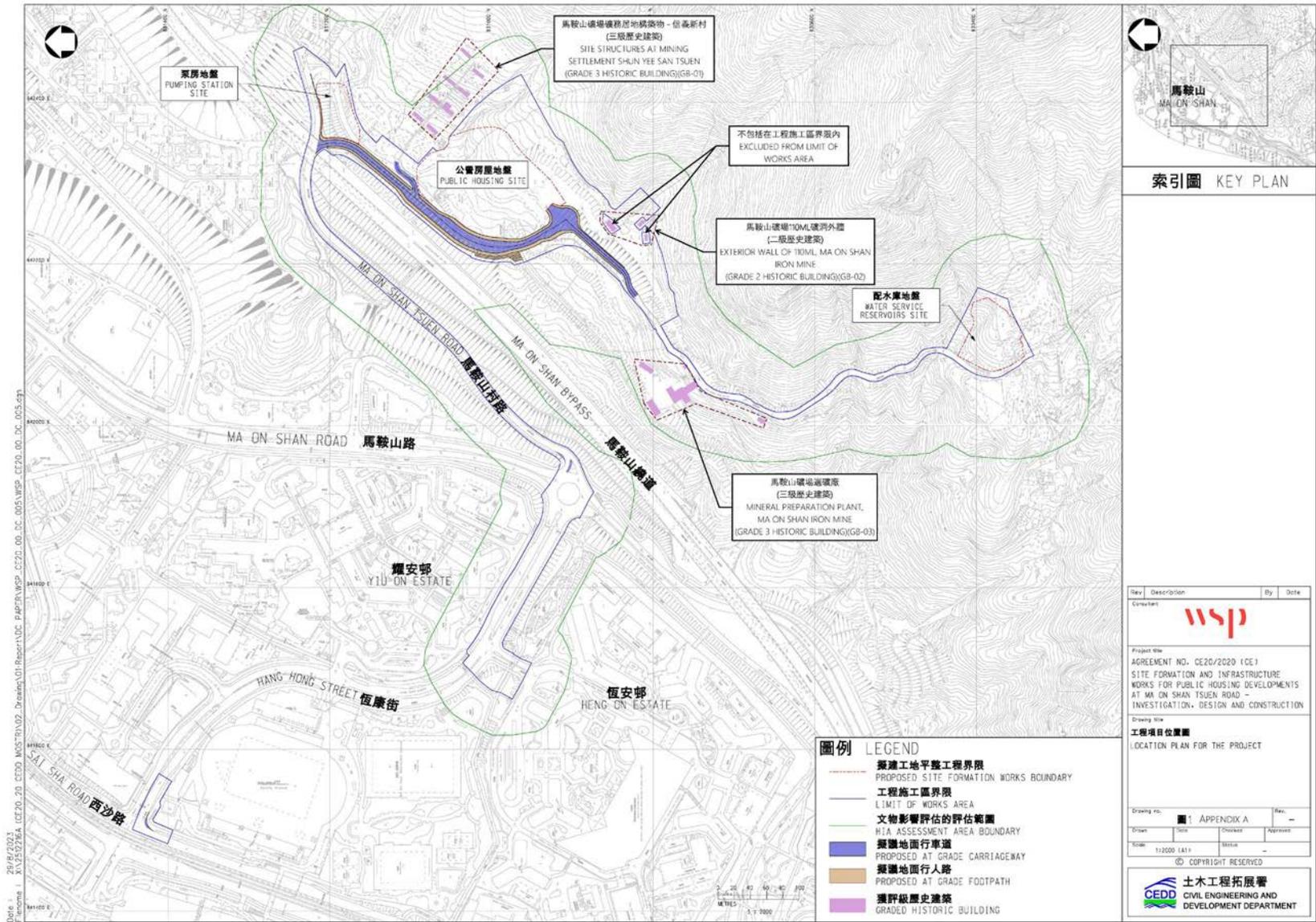
**Figure 3** *Mineral Preparation Plant (1954), Ma On Shan Iron Mine, Sha Tin, N.T. Grade 3 Historic Structure; including GB-03-1: Main Mineral Preparation Plant building; GB-03-2: Structure for Stock-piles; GB-03-3: An office set up there to supervise the operation of the ore-dressing plant; GB-03-4 and GB-03-5: Pillars forming connection between 110ML portal and mineral preparation plant, and other heritage resources: HB-03: Electric transformer platform; HB-04: Electric Sub-station; HB-05: Stone foundation of a temporary structure; HB-06: Collapsed building; HB-07: Toilet building; HB-08: Concrete retaining wall with buttress; HB-09A to 9C: pillar; HB-10: stone and concrete retaining wall; HB-11: water tank; HB-12: Thickener tank; HB-13: two sets of stairs part of the Mineral preparation plant; HB-14: Transmission building connected to main MPP by overhead conveyor belt and HB-15: Concrete solid support for rail track*



**Figure 4** *Mineral Preparation Plant (1954), Ma On Shan Iron Mine, Sha Tin, N.T. Grade 3 Historic Structure; GB-03-6: Water Tank, and other heritage resources: HB-15: concrete solid support for rail track; HB-16: concrete and stone support for rail track with stone barrier wall; HB-17: Stone retaining wall next to main road above water tank; HB-18: Small stone building next to water tank; HB-19: Pipeline with retaining wall on steep slopes, HB-20: Catch water and HB-21: Catch water tank*



**Figure 5** Other heritage resources: HB-22: ore waste dump, HB-23 to 26: residential houses and G-01: the Yau family Qing dynasty grave dated to 13<sup>th</sup> year of Guangxu period



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 Drawing No. 1 APPENDIX A



索引圖 KEY PLAN

Rev	Description	By	Date
0	Created		

**wsp**

Project Title  
 AGREEMENT NO. CE20/2020 (CE)  
 SITE FORMATION AND INFRASTRUCTURE  
 WORKS FOR PUBLIC HOUSING DEVELOPMENTS  
 AT MA ON SHAN TSUEN ROAD -  
 INVESTIGATION, DESIGN AND CONSTRUCTION

Drawing Title  
**工程項目位置圖**  
 LOCATION PLAN FOR THE PROJECT

Drawing No.	Scale	Checked	Approved
1 APPENDIX A	1:2000 (A1)		

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