



# Heritage Impact Assessment in respect of the Proposed Public Housing Development at Area 39, Hin Fat Lane, Tuen Mun

November 2019

**REVIVAL**  
Heritage Consultants Limited

Prepared for

 Hong Kong Housing Authority

# Heritage Impact Assessment in respect of the Proposed Public Housing Development at Area 39, Hin Fat Lane, Tuen Mun

November 2019

## Research Team

### Ms. HO Sum Yee, May

BSSc(AS), MArch, PDip (Cultural Heritage Management), MSc(Conservation), Registered Architect, HKIA, HKICON



### Ms. NG Wan Yee, Wendy

BA(AS), MSc(CHE), HKICON



### Prof. WONG Wai yee, Sharon

BA, Mphil(Archaeology), PhD

\* Prof. Wong is one of the current members of the Antiquities Advisory Board



## Acknowledgements

We would like to acknowledge the permission given by the following organisations and person for the use of their records, maps and photos in the report:

- Antiquities and Monuments Office
- Architectural Services Department
- Information Services Department
- Public Records Office
- The University of Hong Kong
- Mr. Leung Pak Chuen
- Aerial Photo and Map from Lands Department

© The Government of the Hong Kong SAR Reference no. GI 6/2019

Table of Contents	
Research Team .....	ii
Acknowledgements.....	ii
<b>List of Figures.....</b>	<b>ii</b>
<b>1. Introduction.....</b>	<b>1</b>
1.1 Background.....	1
1.2 Technical Assessment Report by CEDD .....	1
1.3 Objectives and Scope of the Heritage Impact Assessment .....	1
1.4 Methodology .....	2
1.4.1 Part I – baseline study.....	2
1.4.2 Part II – heritage impact assessment.....	2
1.5 Site particulars of the Project Site .....	3
1.6 Site particulars of the nearby Heritage Site .....	3
<b>2. Site and context.....</b>	<b>5</b>
2.1 Tuen Mun.....	5
2.2 The Castle Peak area .....	5
2.3 History of the Ceramic Kiln .....	7
<b>3. Architecture.....</b>	<b>9</b>
3.1 Site access.....	9
3.2 Description of the Ceramic Kiln .....	10
3.2.1 Background of Shiwan dragon kiln.....	10
3.2.2 Ceramic Kiln .....	11
3.2.3 Features associated to the manufacturing process of ceramic products	18
<b>4. Social Value .....</b>	<b>20</b>
4.1 The role of Ceramic Kiln in the art society in Hong Kong .....	20
4.2 The role of Ceramic Kiln in the manufactory industry in Hong Kong .....	20
<b>5. Statement of Significance.....</b>	<b>23</b>
5.1 Statement of Significance .....	23
5.2 Character defining elements .....	24
5.2.1 Definition of terms .....	24
5.2.2 Setting and context.....	25
5.2.3 Ceramic Kiln .....	25
<b>6. Public Housing Proposal .....</b>	<b>31</b>
6.1 Public housing proposal .....	31
6.2 Technical Assessment Report by CEDD .....	31
6.3 Architectural design .....	31
6.4 Structural design .....	32
6.5 Heritage and conservation considerations .....	32
6.5.1 Relationship with the Ceramic Kiln .....	32

6.5.2 Structural design consideration & monitoring measures.....	32
<b>7 Conservation Policies and Guidelines .....</b>	<b>38</b>
7.1 Opportunities and constraints.....	38
7.2 Conservation Goals .....	38
7.3 Conservation Principles.....	38
7.3.1 International Charters and Principles.....	38
7.4 Conservation Policies and Guidelines .....	38
7.4.1 New use and compatibility.....	38
7.4.2 Respect the Setting of the Ceramic Kiln .....	39
7.4.3 Protection of Built Fabrics.....	39
7.4.4 Documentation .....	39
7.4.5 Implementation .....	39
<b>8. Heritage Impact Assessment.....</b>	<b>41</b>
8.1 Impact Level.....	41
8.2 Impact assessment .....	42
Bibliography .....	45
Official Document .....	45
Books.....	45
Journal .....	45
Newspaper .....	45
Website .....	45
Other.....	45
Appendix I – The design of Shiwan dragon kiln .....	46
Comparative study of the Ceramic Kiln at Hin Fat Lane and in Shiwan.....	46
Appendix II – Local artists associated with the Ceramic Kiln .....	50
Chan Chung-kong (陳松江).....	50
Chan Ping-tim (陳炳添) .....	50

# LIST OF FIGURES

Fig. 1. The Project Site was previously occupied by the ex-Pui Oi School compound (demolished). .....	3
Fig. 2. External view of the Ceramic Kiln. ....	3
Fig. 3. Site plan showing the Project Site boundary of the proposed public housing development and grading boundary of the Ceramic Kiln (Not to scale).....	4
Fig. 4. Tsing Shan Monastery 青山禪院 in 2009. ....	6
Fig. 5. Castle Peak and the factories located at the foot of the mountain in 1956. ....	6
Fig. 6. The Ceramic Kiln in 1981 .....	7
Fig. 7. The ceramic mold produced by the kiln with the company name of Kung Hop Pottery Kiln.....	7
Fig. 8. Ramped slope from Hin Fat Lane.....	9
Fig. 9. Location plan showing the Project Site and the Ceramic Kiln.....	9
Fig. 10. The front furnace. ① Original west side openings being blocked by Leung Sum ② West side opening.....	11
Fig. 11. Exterior of the Ceramic Kiln fire chamber.....	11
Fig. 12. Plan and section of the Ceramic Kiln recorded in 1984 (original scale 1: 25, scale 1: 125 as shown). (adapted from a plan of the then Public Works Department).....	12
Fig. 13. Fire chamber with pottery at the Ceramic Kiln. ....	13
Fig. 14. The fire chamber of the Ceramic Kiln. ....	13
Fig. 15. Mud brick used for the construction of the Ceramic Kiln.....	14
Fig. 16. Stone rubble wall on flanking both sides of the fire chamber. ....	14
Fig. 17. The top of the fire chamber in 1981. ....	14
Fig. 18. Timber rack for the passage of potter over the Ceramic Kiln. ....	15
Fig. 19. Stroke holes on top of the fire chamber. ....	15
Fig. 20. Existing remains for the firewood at the Ceramic Kiln. ....	15
Fig. 21. The opening for the passage of smoke to the after burner at the end of the fire chamber, known as 喉嚨雞 [the throat of chicken] to the Shiwan people. ....	16
Fig. 22. The end wall above the end of the Ceramic Kiln made of pottery previously produced. ....	16
Fig. 23. Brick chimney. ....	16
Fig. 24. Aerial photo in 1964. ....	17

Fig. 25. Exterior of Ceramic Kiln shelter in the 1970s. ....	17
Fig. 26. Existing timber trusses for the original roof. ....	17
Fig. 27. Brick pillars. ....	17
Fig. 28. Site map showing the features associated to the manufacturing process at the Ceramic Kiln. (The numbering reflects the sequence of the manufacturing process.) .....	18
Fig. 29. Map showing the location of the kiln and the factories nearby in 1957. ....	21
Fig. 30. The brick produced by Castle Peak Ceramic Company which can be found in Ceramic Kiln. ....	22
Fig. 31. The ceramic mold produced by Keen Sang Brickworks which can be found in Ceramic Kiln. ....	22
Fig. 32. Site plan showing the Project Site boundary of the proposed public housing development and grading boundary of the Ceramic Kiln (not to scale). ....	33
Fig. 33. Site plan of the proposed public housing development and set back to the Ceramic Kiln (not to scale). ....	34
Fig. 34. Proposed Conceptual Layout Plan of the proposed public housing development (not to scale). ....	35
Fig. 35. Site Section B-B of the proposed public housing development (not to scale). ....	36
Fig. 36. Site section showing the relationship of the foundation construction works and the Ceramic Kiln (not to scale).....	37

# I. INTRODUCTION

## I.1 Background

The Project Site is located at Area 39, Hin Fat Lane, Tuen Mun. It is currently vacant, which was previously occupied by a 3-storey ex-Pui Oi School compound that was demolished by Architectural Services Department. Hong Kong Housing Authority (HKHA) will develop the Project Site into a public housing development. A new block with 37 domestic storeys will provide about 950 flats with carpark, welfare facility and Estate Management Office. The proposed public housing development is tentatively targeted to be completed in 2024.

The ex-Pui Oi School compound is not a declared monument or graded historic building. However, the Ceramic Kiln, Hin Fat Lane, Castle Peak Road, Tuen Mun, N.T. (Ceramic Kiln) was confirmed as Grade 3 Historic Building in 2014, which is located within 50 metres of the Project Site boundary. It is locally called “Castle Peak Pottery Kiln” or “Dragon Kiln”. The distance between the main structure of the proposed public housing development and the Ceramic Kiln is approximately 30m.

A Heritage Impact Assessment (“HIA”) was conducted by HKHA. The procedure followed the HIA mechanism introduced by the Development Bureau vide Technical Circular (Works) No. 6/2009, with a view to assessing the impact of the proposed public housing development to the Ceramic Kiln and devising monitoring and mitigation measures to avoid or minimise any adverse impact to the Grade 3 structure.

The HKHA has commissioned Revival Heritage Consultants Limited to prepare the HIA for the proposed public housing development, aiming to identify potential impacts and suggest mitigation measures to minimize the impacts of the proposed public housing development to the nearby heritage site. The HIA is subdivided into two main sections: Part 1 – Baseline Study, and Part 2 – Heritage Impact Assessment.

## I.2 Technical Assessment Report by CEDD

Before the proposed public housing development is to be executed, to ascertain the technical feasibility of the proposed public housing sites in Tuen Mun Central (where the

Project Site is located) and the related increase in plot ratio (PR), the Technical Assessment Report of the “Preliminary Development Review for Housing Sites at Tuen Mun Central – Feasibility Study” (‘the Technical Assessment Report’) was undertaken by Civil Engineering and Development Department (CEDD) for the Tuen Mun Central sites<sup>1</sup> to support the proposed amendments to the approved Tuen Mun Outline Zoning Plan (OZP) No. S/TM/33 for rezoning the Tuen Mun Central sites for the proposed public housing developments. In the Technical Assessment Report by CEDD, there are some initial assessments and proposed mitigation measures were recommended in view of the proposed public housing development adjacent to the Ceramic Kiln which is a Grade 3 Historic Building. According to the findings of this Technical Assessment Report, there is no insurmountable technical problem for the proposed public housing development. The design of the proposed public housing development has been taken into account the suggestions raised in the Technical Assessment Report. For detail please refer to Chapter 6 – Public Housing Proposal.

## I.3 Objectives and Scope of the Heritage Impact Assessment

The main objective of this HIA is to identify any potential impact arises from the proposed public housing development in the Project Site throughout different stages, including design, foundation and construction stage, as well as suggesting mitigation measures for the identified impacts.

Prior to the heritage impact assessment, a baseline study is conducted to include the heritage study of the Ceramic Kiln, with an understanding of the site and context through an outline on the history of Tuen Mun and the Castle Peak area, and will then focus on the history and development of the Ceramic Kiln, and establish its social value. Such baseline study could allow us to understand the significance of the Ceramic Kiln and establish the ground to identify its character defining elements, so that respective mitigation and monitoring measures, conservation policies and guidelines can be developed to ensure there is no adverse impact to the Ceramic Kiln.

<sup>1</sup> RNTPC Paper No. 9/17, for consideration by the Rural and New Town Planning Committee on 13.10.2017, Proposed Amendments to the Approved Tuen Mun Outline Zoning Plan NO. S/TM/33, P.2 and the Attachment V – Technical Assessment Report of the ‘Preliminary Development Review for Housing Sites at Tuen Mun Central- Feasibility Study’

prepared for CEDD by AECOM Asia Company Limited, Section 8.3. Retrieved on 4 October 2019, under Town Planning Board, website: [https://www.info.gov.hk/tpb/en/papers/RNTPC/589-mtpc\\_9-17.pdf](https://www.info.gov.hk/tpb/en/papers/RNTPC/589-mtpc_9-17.pdf).



## Part I – Baseline study

1. Identify the cultural significance of the nearby heritage site, i.e. Ceramic Kiln;
2. Develop conservation policies and guidelines;

## Part 2 – Heritage Impact Assessment

1. Assess the impacts on the Ceramic Kiln arising from the proposed public housing development so that adverse impact could be avoided and minimized with appropriate mitigation measures.

## 1.4 Methodology

### 1.4.1 Part I – baseline study

The conservation process adopted for part I generally follows the Burra Charter Process<sup>2</sup> and James Kerr's model of Conservation Plan,<sup>3</sup> which will be mainly divided into two major stages:

#### 1. Understanding of the Place

Research, analysis, survey, and investigation, collectively known as conservation-based research and analysis is carried out to understand the significance of the building and its landscape, the research and analysis will then inform decisions about repair, alteration, use and management.<sup>4</sup> The context and the essence of the Ceramic Kiln will be understood through a multi-disciplinary research, which helps to determine its cultural significance and establish the Statement of Significance.

#### 2. Developing Conservation Guidelines

Base on the Statement of Significance and other factors, such as the physical condition, statutory requirements or any other external requirements, requirements for the retention of significance, and client's requirements, further develop conservation guidelines. This

mainly includes the determination of the accepted level of intervention to the Character Defining Elements, and establishment of the conservation approach, followed by preparing detailed guidelines to the conservation of the Character Defining Elements and providing recommendations for treatments of architectural features from being affected by the proposed public housing development.

### 1.4.2 Part II – heritage impact assessment

The HIA generally follows the Heritage Impact Assessment Guidelines prepared by the Antiquities and Monuments Office (AMO)<sup>5</sup>, James Kerr's heritage impact statement as introduced in his model of Conservation Plan<sup>6</sup>, and Heritage Impact Statements – Guidelines prepared by the Australian Heritage Council.<sup>7</sup>

The baseline study mentioned above provides a general guide to the retention of the heritage values. The proposal to develop the Project Site into public housing will be examined by studying its impact on the nearby Ceramic Kiln based on the conservation policies established. Affected parts and areas of the place will be identified, direct and indirect impacts and the visual impacts on the built heritage, the surrounding landscape and context will be clearly stated. The extent and ways in which heritage values of the Ceramic Kiln are affected by the proposal will be evaluated, with the identified heritage impacts classified into different levels. Mitigation measures will be recommended for acceptance, conditional acceptance on modification, or rejection of the proposal. This includes recommendation of mitigation measures to reduce the adverse impact of the proposal on the significance of the historic place, if any, and help to improve the design in the design process.

<sup>2</sup> Australia ICOMOS, *The Burra Charter*, 2013, p. 10.

<sup>3</sup> Kerr, J.S. *Conservation Plan*. National Trust of Australia (NSW), 7<sup>th</sup> edition, 2013. Retrieved on 9 April 2013 under Australia ICOMOS, website: <http://australia.icomos.org/publications/the-conservation-plan/>.

<sup>4</sup> Kate Clark, *Informed Conservation: Understanding Historic Buildings and Their Landscapes for Conservation*, London, English Heritage, 2001, p.9.

<sup>5</sup> Development Bureau, *Technical Circular (Works) No. 6/2009 – Heritage Impact Assessment Mechanism for Capital Works Projects*, 2009.

<sup>6</sup> Kerr, J.S. *Conservation Plan*. National Trust of Australia (NSW), 6<sup>th</sup> edition, 2004, pp. 42-43 and pp. 62-63.

<sup>7</sup> See Heritage Information Series: Heritage Impact Statements Guidelines. Retrieved on 4 March 2013 under Heritage Council (Victoria), website: [http://www.dpcd.vic.gov.au/\\_data/assets/word\\_doc/0004/61789/Heritage\\_Impact\\_Statement.doc](http://www.dpcd.vic.gov.au/_data/assets/word_doc/0004/61789/Heritage_Impact_Statement.doc). See also Statements of Heritage Impact. Retrieved on 4 March 2013 under Heritage Council (NSW), website: <http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf>.

## I.5 Site particulars of the Project Site

### Proposed Public Housing Development

Address	Area 39, Hin Fat Lane, Tuen Mun, New Territories
Historic designation	N/A
Current use	Vacant site (previously occupied by a 3-storey ex-Pui Oi School compound)
Zoning	"Residential (Group A)26" <sup>8</sup>
Proposed Development	Public Housing
No. of Domestic Blocks	1
No. of Storey	About 40 storeys (including domestic storeys, carpark, welfare facility and Estate Management Office) (Subject to detailed design)

## I.6 Site particulars of the nearby Heritage Site

### Ceramic Kiln, Hin Fat Lane, Castle Peak Road, Tuen Mun, N.T.

Address	Hin Fat Lane, Castle Peak Road, Tuen Mun, New Territories
Historic designation	Grade 3 Historic Building
Completion year	1940s
Current use	Ceramic Kiln (non-functioning) at Hin Fat Lane
Materials of Construction	Mud Bricks (ceramic kiln)
Proposed Development	Not applicable



Fig. 1. The Project Site was previously occupied by the ex-Pui Oi School compound (demolished).



Fig. 2. External view of the Ceramic Kiln.

<sup>8</sup> According to the approved Tuen Mun OZP No. S/TM/35.

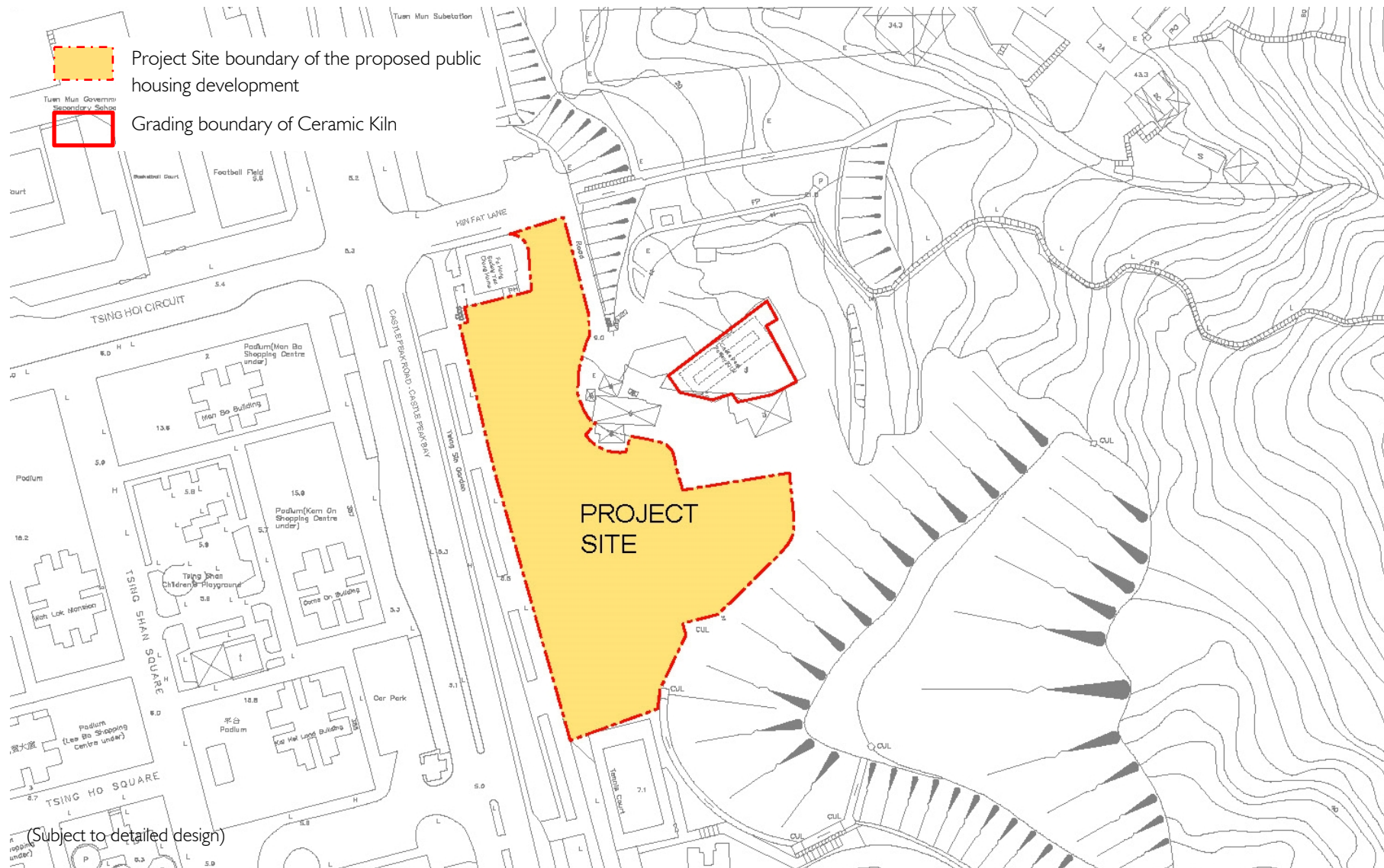


Fig. 3. Site plan showing the Project Site boundary of the proposed public housing development and grading boundary of the Ceramic Kiln (Not to scale).<sup>9</sup>

<sup>9</sup> Survey and Mapping Office, Lands Department, Hong Kong SAR Government, acc. no.: 6-SW-6D (Ed 2019) (partial). Aerial Photo and Map from Lands Department © The Government of the Hong Kong SAR Reference no. G16/2019.



## 2. SITE AND CONTEXT

### 2.1 Tuen Mun

The History of Tuen Mun can be traced back to 4000 BC. The archaeologist excavated the ancient remains in three main archaeological sites in Tuen Mun including Shek Kok Tsui, So Kwun Wat and Lung Kwn Tan which yield fundamental evidence of human activities from the prehistoric to the historic periods.

Tuen Mun had been administered by five counties in total from Qin dynasty to Qing dynasty. Due to its proximity to the sea, Tuen Mun was a port since Qin dynasty. According to the *The New Book of Tang*, Tuen Mun not only was a port, but also an area of garrison soldiers defenced. Tuen Mun literally means an entrance of garrison soldiers defenced.

The earliest record of the local industries in Tuen Mun can be traced back to the Tang dynasty. Trading industry was the main local industry in Tuen Mun during that time. Until Song dynasty, salt manufacturing industry and fishing industry gradually developed. Together with the trading industry, salt manufacturing industry and fishing industry became major local industries in Tuen Mun. After WWII, the gate had been totally opened to the industrialization in Hong Kong. Various kinds of manufacturing factories developed in Tuen Mun during the time, including brick works, textile and ceramic factories. Manufacturing industry and fishing industry thus became the two major industries in Tuen Mun in the 20th century. In the late 20th century, the government began to develop Tuen Mun as a new town. In the late 1960s, the government proposed a land reclamation plan. According to the plan, the government wanted to create new land from a part of Castle Peak Bay area and develop a new town with public housing area, industrial area and Typhoon anchorage on the new land. The new town development based on the land reclamation plan finally led to the gradual decline of the fishing industry in Tuen Mun. Since then, Tuen Mun has developed into a modern town with an industrial area.<sup>10</sup>

<sup>10</sup> Sit, F.S. Victor 薛鳳旋 and Alan Birch, *Tuen Mun-From Ancient Port To City of Future*, Hong Kong: Tai Dao Publishing Co., 1982, p. 33.

<sup>11</sup> Lau, Chi-pang 劉智鵬, *Tuen Mun Heritage*, Hong Kong: Tuen Mun District Council, 2003, p.34.

<sup>12</sup> Shu Maoguan 舒懋官, *Xin'anxianzhi 新安縣志 卷二十三藝文志二* [Xin'an County Gazetteer], juan twenty three-Yi Wen zhier [S.1: s.n.], (Qing) Kangxi wuchen 27, 1819.

### 2.2 The Castle Peak area

Castle Peak is a mountain located in Tuen Mun which is a sacred mountain to the local people, especially the Buddhist since years ago. It had various names in the past. According to *The New Book of Tang*, it was named Tuen Mun Shan.<sup>11</sup> There is a famous folktale about the elderly Buddhist monk, Pui To 杯渡 and Castle Peak. Therefore, it was more commonly known as Pui To Shan 杯渡山 during the Song dynasty.<sup>12</sup> It also had other names, such as Sui Ying Shan 瑞應山.<sup>13</sup> After Hong Kong became a Crown colony in the 19th century, the British named it as Castle Peak because of its silhouette.

Due to the folktale mentioned above, Castle Peak has become a place where the temples and monasteries were built since ancient times. Tsing Shan Monastery 青山禪院, one of the three oldest temples in Hong Kong is situated in Castle Peak.<sup>14</sup> (Fig. 4) In addition, a number of other Buddhist and Taoist temples are situated at the foot of the Castle Peak, near the Tuen Mun New Town nowadays.

<sup>13</sup> Lau, Chi-pang 劉智鵬, *Tuen Mun Heritage*, Hong Kong: Tuen Mun District Council, 2003, p.36.

<sup>14</sup> *History*, retrieved on 26th July, 2019, from Tsing Shan Monastery Website (2012), Website: [http://eng.tsm.org.hk/e\\_c\\_01.html](http://eng.tsm.org.hk/e_c_01.html).



Fig. 4. Tsing Shan Monastery 青山禪院 in 2009.<sup>15</sup>

In the early 20th century the Castle Peak area, which refers to the mountain and the market area at the foot of the mountain was gradually developed into a construction materials and pottery manufacturing hub. Castle Peak area provided fruitful resources of clay for producing bricks or pottery and attracted large scaled construction materials and pottery manufacturers to set up their factories in Castle Peak area, namely Keen Sang Brickworks 建生磚廠 and Castle Peak Ceramic Company 青山陶業有限公司. The manufacturers supplied goods to local and even overseas customers since then. These manufacturers contributed to the Castle Peak area and even Tuen Mun through creating working opportunities to the local residences and developing the area into a construction materials and pottery manufacturing hub.<sup>16</sup> (Fig. 5)

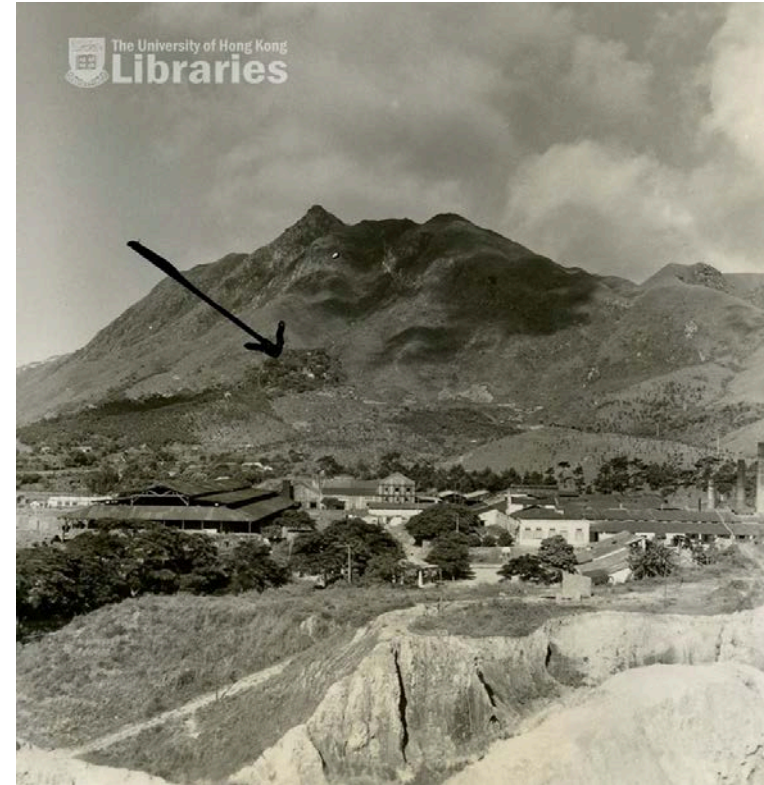


Fig. 5. Castle Peak and the factories located at the foot of the mountain in 1956.<sup>17</sup>

In the late 20th century, Hong Kong Government started to develop Tuen Mun into a new town. Nowadays, most of the area of Castle Peak is served as fringe range utilized by the military and police forces. The old Castle Peak area is part of the Tuen Mun New Town. Although there is still an industrial area in Tuen Mun, Castle Peak area is no longer famous for supplying construction materials and pottery.

<sup>15</sup> Photo credit: Ng Wan Yee Wendy.

<sup>16</sup> Wong, Wai-yee, Sharon, 'Future Cities: Preserving Dragon Kiln in Greater Bay Area', Mingpao 8 April, 2018.

<sup>17</sup> Photo credit: Lee, Mai-yee, Miranda. Retrieved from Hong Kong Image Database, Website: <https://digitalrepository.lib.hku.hk/catalog/0z708z918?locale=en>.

## 2.3 History of the Ceramic Kiln

The Ceramic Kiln is situated at Hin Fat Lane in Tuen Mun, off Castle Peak Road. It was a kiln constructed by an overseas Chinese named Szeto Nu Tao 司徒怒濤<sup>18</sup> in the 1940s.<sup>19</sup> Szeto originally constructed the kiln to produce the pottery and planned to sell the pottery to the foreign market. However, the efficiency of the kiln and the quality of the pottery produced by the kiln were not satisfactory, and thus the Ceramic Kiln was used to produce village and household pottery instead.<sup>20</sup> The 20-meter-long Ceramic Kiln was built according to the topography of the hill, of which the shape of the kiln is similar to a dragon climbing uphill. Therefore, it is also known as Castle Peak dragon kiln. The Ceramic Kiln was the third dragon kiln built in Hong Kong and it was considered to be the largest dragon kiln in Hong Kong.<sup>21</sup> (Fig. 6)



Fig. 6. The Ceramic Kiln in 1981.<sup>22</sup>

In 1951, the foreman at the kiln, named Leung Sum 梁森 bought and took over the kiln.<sup>23</sup> He realized the problem of the kiln and modified it so as to ensure a better draft.<sup>24</sup> The Ceramic Kiln is a cross draft kiln with higher efficiency since then. After the modification, the Leung family started to produce a variety of ceramic products, for example cooking utensils, male urinal bottle and burial urn (*Kam Tap* in Cantonese) and the products were sold under the company name of Kung Hop Pottery Kiln 工合陶窑 or Hong Kong Ceramic Arts Studio 香港陶瓷藝術室. (Fig. 7)



Fig. 7. The ceramic mold produced by the kiln with the company name of Kung Hop Pottery Kiln.

According to Mr. Leung Pak Chuen 梁柏泉, the son of Mr. Leung Sum, the production of Ceramic Kiln was operated as a labour-intensive industry. The workers took part in collecting firewood from the hillside nearby, firing the ceramic products and monitoring the firing, packing and delivering the ceramic products. The Ceramic Kiln had over thirty workers in its heyday. During that time, Leung Sum's compatriots from Shiwán came and produce the ceramic products with the kiln. The Ceramic Kiln also attracted famous ceramic artists, such as local artist Liu Yuan 劉垣 and Lai Chiu 黎潮 from Shiwán.<sup>25</sup>

<sup>18</sup> Szeto Nu Tao 司徒怒濤 was an overseas Chinese who originally was from Kaiping. He was a businessman and invested to construct the kiln in the 1940s. (Wong, Wai-yee, Sharon, 'Future Cities: Preserving Dragon Kiln in Greater Bay Area', Mingpao 8 April, 2018)

<sup>19</sup> Lau, Chi-pang 劉智鵬, *Tuen Mun Heritage*, Hong Kong: Tuen Mun District Council, 2003, p.66.

<sup>20</sup> Wong, Wai-yee, Sharon, 'Future Cities: Preserving Dragon Kiln in Greater Bay Area', Mingpao 8 April, 2018.

<sup>21</sup> Hong Kong Urban Council, *Hong Kong Pottery Today*, Hong Kong, the Council, 1984, p.8.

<sup>22</sup> Old photo in 1981, photo credit: Mr. Leung Pak Chuen.

<sup>23</sup> Leung Sum 梁森, a pottery craftsman, had started to make pottery in Shiwán, Guangdong province since he was eight years old. He came to Hong Kong in 1949.

<sup>24</sup> Interview with Mr. Leung Pak Chuen on 16th May 2018. Interviewer: Ng Wan-yee Wendy.

<sup>25</sup> Oral history interview with Leung Pak Chuen 梁柏泉 on 10 July 2019. Interviewers: Wong Wai-yee Sharon, Fan Tsz Kiu Kiko.

The government resumed the site including the Ceramic Kiln from the Leung family in 1982. The area of the Ceramic Kiln was marked for redevelopment and the operation of the Ceramic Kiln would have to cease at that time.<sup>26</sup> It is believed that the Ceramic Kiln was fired for the last time between 1982 to 1984. Since then, the Ceramic Kiln has no longer operated. The Ceramic Kiln was accorded a Grade 3 status in 2014. In 2018, the Government proposed to rezone Area 39, Hin Fat Lane for public housing development, which is in the vicinity of the Ceramic Kiln.<sup>27</sup>

---

<sup>26</sup> Hong Kong Urban Council, *Hong Kong Pottery Today*, Hong Kong: the Council, 1984, p.6

<sup>27</sup> Town Planning Board, Paper No. 10449, 2018.



## 3. ARCHITECTURE

### 3.1 Site access

The Ceramic Kiln is situated at a location elevated from the level of Castle Peak Road. It can be accessed by a ramped road from Hin Fat Lane. (Fig. 8) There is a slope between the Ceramic Kiln and the proposed public housing development which implies a level difference between the two sites. (Fig. 9)



Fig. 8. Ramped slope from Hin Fat Lane.

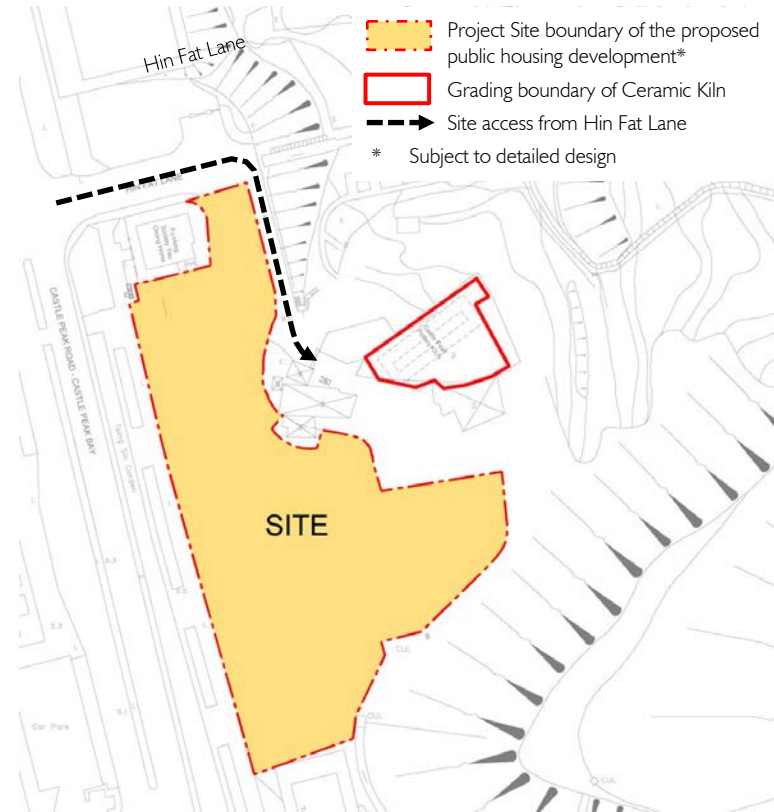


Fig. 9. Location plan showing the Project Site and the Ceramic Kiln.<sup>28</sup>

<sup>28</sup> Survey and Mapping Office, Lands Department, Hong Kong SAR Government, acc. no.: 6-SW-6D (Ed 2019) (partial). Aerial Photo and Map from Lands Department © The Government of the Hong Kong SAR Reference no. G16/2019.

## 3.2 Description of the Ceramic Kiln

### 3.2.1 Background of Shiwan dragon kiln

The Ceramic Kiln was built following some examples of ceramic kilns in Shiwan, such as Shiwan dragon kiln archaeological site at Qishi Village, Nanhai District Xiaotang (南海區小塘奇石村石灣龍窯考古遺址), Shiwan Wen Kin (石灣鎮文灶), Nanfeng Ancient Kiln (南風古灶), Gao Kiln (高灶) and Tongqing Kiln (同慶灶). Shiwan dragon kiln has a long history, with the earliest one could be traced back to the Northern Song Dynasty. The Shiwan dragon kiln before Yuan Dynasty was not performing satisfactorily. The slope of the kiln was not deep enough, while the stroke holes which allow addition of extra firewoods were located on the lateral sides of the kiln resulted in weak sucking power (抽力小), short flame (火焰短) and an uneven temperature inside the kiln. There was a breakthrough improvement to the dragon kiln during the Ming Dynasty, where the stroke holes were relocated to the top of the kiln, with five holes in each row. By doing so, the addition of firewoods could cover more areas which improved the uneven temperature issue.<sup>29</sup>

The production of Shiwan ceramics was in its heyday during the Ming and Qing Dynasty. There emerged dragon kiln builders who were specialized in the construction of dragon kiln in Shiwan. Today, only three Shiwan dragon kilns are left in Shiwan. Hong Kong is lucky enough to have one which is still in its authentic form.<sup>30</sup>

The earliest kiln that modelled after Shiwan dragon kiln could be found in Hong Kong dated back to approximately 1930 at Wing Lee Wai Wine Factory 永利威酒廠 in Tai Po Market, which was used for the production of ceramic wine vessels in the Shiwan tradition. Another one was built in 1939 at Castle Peak Road for the production of Shiwan pottery figurines owned by Keen Sang Brickworks, which was believed to have the involvement of Leung Sum during the construction of the ceramic kiln. The Ceramic Kiln built in the 1940s by Szeto Nu Tao was the third dragon kiln built in Hong Kong, and was considered to be the largest dragon kiln in Hong Kong.<sup>31</sup>

The Ceramic Kiln was built following the model of Shiwan dragon kiln after the Ming Dynasty judging from the locations of the stroke holes on top of the kiln with five holes in each row. The Ceramic Kiln is considered to be smaller in size comparing to the three present Shiwan dragon kilns and other available archaeological records, while the amount of stroke holes is considerably little as well. All these could be reflecting that the construction of the Ceramic Kiln was following the model of Shiwan dragon kiln with adaptations.

It is said that the performance of the Ceramic Kiln when it was first built by Szeto Nu Tao was not that satisfactory which was not able to produce fine pottery nor produce efficiently.<sup>32</sup> When Shiwan potter Leung Sum brought the Ceramic Kiln in 1951, he modified the kiln by making the front furnace smaller and making changes to the chimney to ensure a better draft. Thereafter, the Ceramic Kiln was able to survive.<sup>33</sup> The Ceramic Kiln is a cross draft kiln which has great efficiency such that only one-day's firing time is required for the production.

Please refer to Appendix I – The design of Shiwan dragon kiln for further details regarding to the design of Shiwan dragon kiln.

<sup>29</sup> “窯身兩旁各有一排火眼（投柴孔穴），……。這種龍窯坡度小，抽力小，火焰短，窯溫不均”（3）。

明代對龍窯進行了改革，將設在窯壁兩旁的火眼，改在窯頂之上，並增設為每行五個。這樣窯內各個不同的部位都能加進燃料，克服了過去火候不均勻的缺點，大大降低了廢品率。明代的龍窯改革，是石灣陶瓷技術史上的一次重大革新。From LI Yan-juan, 'An Exploration of Shiwan Dragon Kiln Protection', from *Journal of Foshan University (Social Science Edition)*, 2011, Vol. 29, Issue 4, pp.65-66.

<sup>30</sup> LI Yan-juan, 'An Exploration of Shiwan Dragon Kiln Protection', from *Journal of Foshan University (Social Science Edition)*, 2011, Vol. 29, Issue 4, p.65.

<sup>31</sup> Hong Kong Urban Council, *Hong Kong Pottery Today*, Hong Kong, the Council, 1984, p.8.

<sup>32</sup> When it was first built, the firing time required was three days and three nights. See 屯門唯一完整古式陶窯處於存亡, 1980s (date unknown).

<sup>33</sup> Interview with Mr. Leung Pak Chuen on 16th May 2018. Interviewer: Ng Wan-ye Wendy.



### 3.2.2 Ceramic Kiln

The Ceramic Kiln is considered to be the sole example of this design in the territory and may possibly be unique in Hong Kong.<sup>34</sup> It consists of a front furnace downhill of around 2m long, a single firing chamber of around 13.7m long, which ends with an after burner connecting to an underground flue of around 4m long which connects to the brick chimney stack. (Fig. 11 -Fig. 12)

The front furnace is a rectangular mass at the beginning of the entire ceramic kiln downhill. Originally there were two openings on the west side and two smaller openings on each side elevations, where the west side openings were blocked later and only rely on the side openings for the input of fire woods. (Fig. 10)



Fig. 10. The front furnace.

① Original west side openings being blocked by Leung Sum ② West side opening

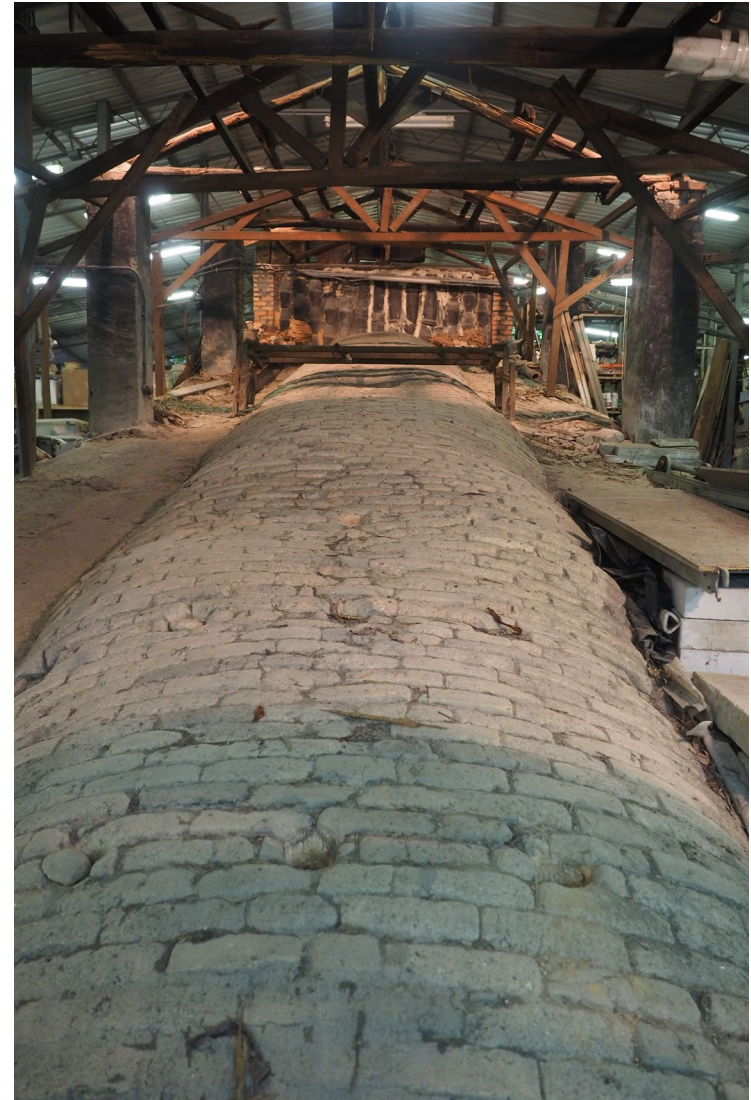


Fig. 11. Exterior of the Ceramic Kiln fire chamber.

<sup>34</sup> Bard, Solomon Matthews, *Solomon Bard's in search of the past: a guide to the antiquities of Hong Kong*, Hong Kong, the Urban Council, 1988, pp. 91-92. Dr. Solomon Bard was the first Executive Secretary of the Antiquities and Monuments Office from 1976 to 1983.

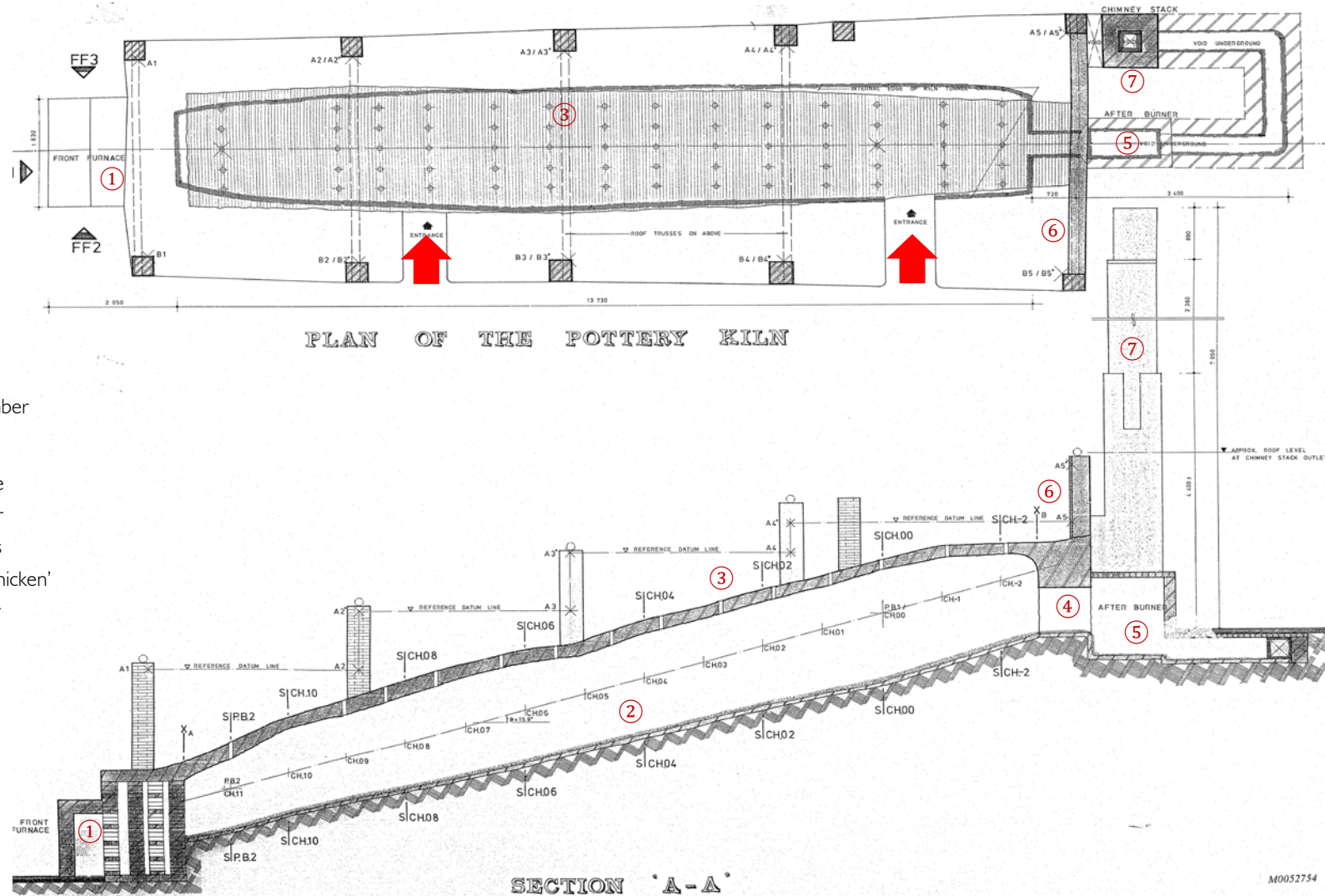


Fig. 12. Plan and section of the Ceramic Kiln recorded in 1984 (original scale 1: 25, scale 1: 125 as shown).<sup>35</sup> (adapted from a plan of the then Public Works Department)

<sup>35</sup> Public Works Department Hong Kong, *Tuen Mun Pottery Kiln – plan and section*, drawing no. A.O.M./ 5352, 1984. Retrieved from Architectural Drawing Records Unit, Architectural Services Department.



The fire chamber is a long-vaulted tunnel climbing uphill with one single chamber. There are two entrances to the south side of the fire chamber, which are basket arched doorways. Potters would fill up the entire space inside the fire chamber to get it full, known as 'full kiln' 满灶 to the Shiwan people. (Fig. 13) The arrangement of the pottery would be thoroughly done to make sure the air draft within the fire chamber, as well as to facilitate the addition of firewood branches during the firing. The two entrances would then be enclosed with bricks before starting the front furnace. The heat would be transmitted from the front furnace through a brick grille to the fire chamber. (Fig. 14) Today, the crystalline remnants known as 'kiln sweat' [窑汗] are still retained on both sides of the interior walls.



Fig. 13. Fire chamber with pottery at the Ceramic Kiln.



Fig. 14. The fire chamber of the Ceramic Kiln.

The Ceramic Kiln was built by mud bricks, with the fire chamber flanked by stone rubble walls on both sides for the protection of the kiln. (Fig. 15 - Fig. 16) The stone walls are slightly lower than the fire chamber, where the top of the walls and timber rack across the kiln allow circulation for the potters during the addition of fire woods through the stroke holes. (Fig. 17) The timber rack and some of the fire woods could still be found nowadays. (Fig. 18 - Fig. 20)



Fig. 15. Mud brick used for the construction of the Ceramic Kiln.



Fig. 16. Stone rubble wall on flanking both sides of the fire chamber.



Fig. 17. The top of the fire chamber in 1981.<sup>36</sup>

---

<sup>36</sup> Photo credit: Mr. Leung Pak Chuen.





Fig. 18. Timber rack for the passage of potter over the Ceramic Kiln.



Fig. 20. Existing remains for the firewood at the Ceramic Kiln.



Fig. 19. Stroke holes on top of the fire chamber.

At the end of the Ceramic Kiln uphill, there is an opening for the passage of smoke to the after burner, which is known as 喉嚨雞 [the throat of chicken] to the Shiwan people. (Fig. 21) A wall constructed of pottery produced previously from the Ceramic Kiln is found above the after burner. (Fig. 22) The smoke would transmit through the underground tunnel connecting from the after burner to the square brick chimney of 7.65 m high. (Fig. 23)



Fig. 21. The opening for the passage of smoke to the after burner at the end of the fire chamber, known as 喉嚨雞 [the throat of chicken] to the Shiwan people.



Fig. 22. The end wall above the end of the Ceramic Kiln made of pottery previously produced.



Fig. 23. Brick chimney.



The entire Ceramic Kiln was originally sheltered under a series of stepping-up pitched roofs following the slope of the Ceramic Kiln uphill, which are supporting on timber trusses onto five pairs of brick pillars on both sides of the Ceramic Kiln. The roofs were originally covered with four pitched roofs, but was deteriorated throughout the time and subsequently removed. Currently the Ceramic Kiln is sheltered under later-added corrugated metal roofs. (Fig. 24 - Fig. 27)



Fig. 24. Aerial photo in 1964.<sup>37</sup>



Fig. 25. Exterior of Ceramic Kiln shelter in the 1970s.<sup>38</sup>



Fig. 26. Existing timber trusses for the original roof.



Fig. 27. Brick pillars.

<sup>37</sup> Survey & Mapping Office, Lands Department. Portion enlargement of the aerial photo: P3F1800, 1964.

<sup>38</sup> Photo credit: Mr. Leung Pak Chuen.

3.2.3 Features associated to the manufacturing process of ceramic products

Apart from the Ceramic Kiln, there are features associated to the manufacturing process of ceramic products in close vicinity to the kiln. This section briefly introduces the features associated with the manufacturing process based on the oral history interview with Mr Leung Pak Chuen, although only the Ceramic Kiln remains the most intact nowadays.<sup>39</sup>

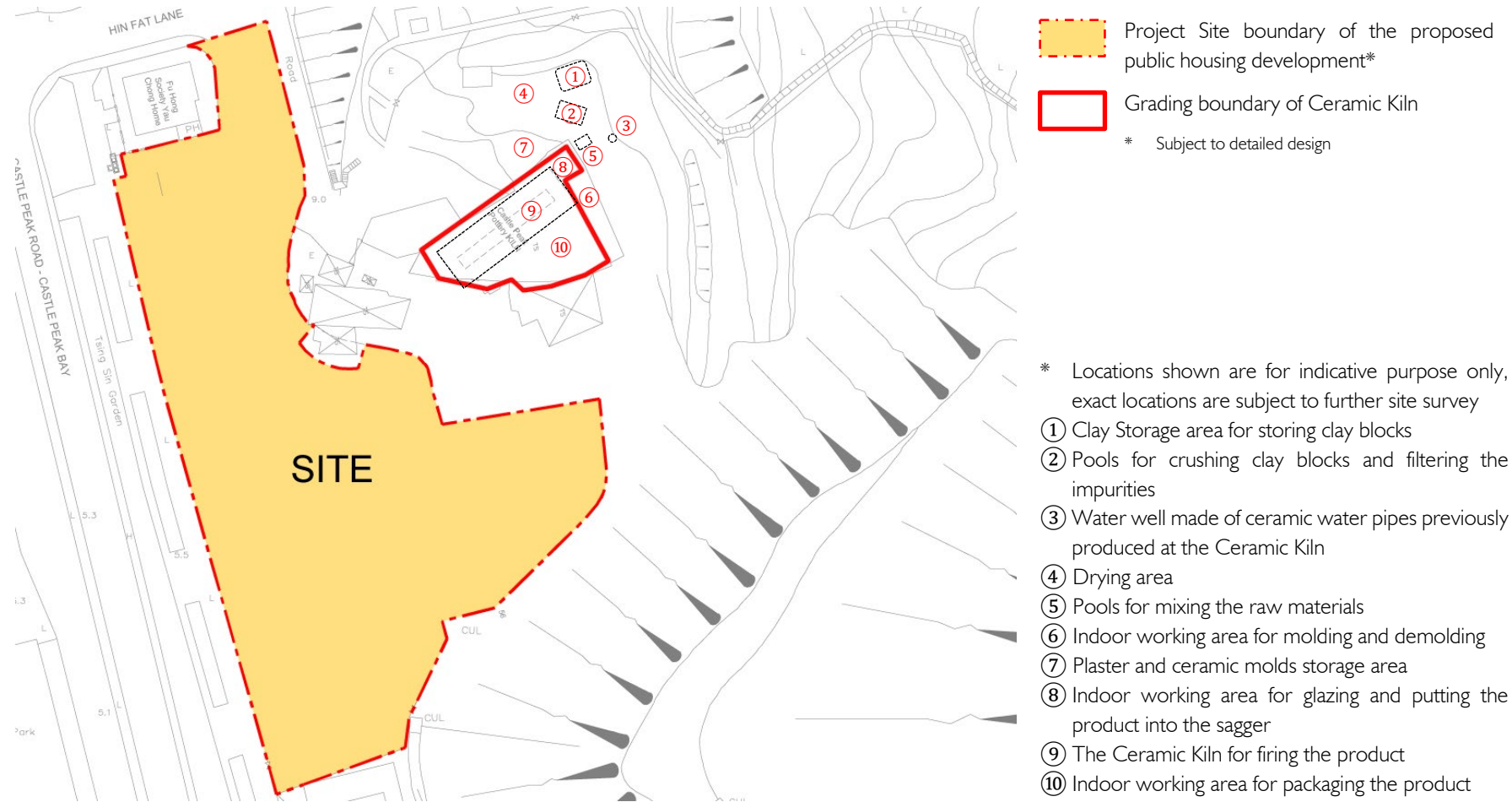


Fig. 28. Site map showing the features associated to the manufacturing process at the Ceramic Kiln. (The numbering reflects the sequence of the manufacturing process.)<sup>40</sup>

<sup>39</sup> Oral history interview with Leung Pak Chuen 梁柏泉 on 10 July 2019. Interviewers: Wong Wai-yee Sharon, Fan Tsz Kiu Kiko.

<sup>40</sup> Survey and Mapping Office, Lands Department, Hong Kong SAR Government, acc. no.: 6-SW-6D (Ed 2019) (partial). Aerial Photo and Map from Lands Department © The Government of the Hong Kong SAR Reference no. G16/2019.

Associated feature	Procedure
1. Clay storage area for storing clay blocks	First, Leung Sum prepared the raw materials. The clay sand was collected by Leung from the vicinity of Butterfly Estate which was an empty area in the past in Tuen Mun, while the clay blocks were mainly bought from the raw materials supplier in Sheung Shui. 10 tons of clay blocks will be sent to the Ceramic Kiln by a truck every time. The clay blocks were moved to the clay storage area, where the truck could berth nearby in the past. Then, a canvas is used to cover the clay blocks. Sometimes, Leung went to the vicinity of the Ceramic Kiln to find the red clay for producing related items.
2. Pools for crushing clay blocks and filtering the impurities	When the raw materials were prepared, the workers put the clay blocks into the pool next to the clay storage area and crushed the clay blocks by using the hammer. Three Tanka women stood in the pools and crushed the clay by their feet.
3. Water well made of ceramic water pipes previously produced at the Ceramic Kiln	The water well was made of the discarded water pipes produced by the Ceramic Kiln and cement. It was used to collect the water for clay preparation and forming procedures. Somehow throughout the hammering process, it is needed to add some water to the clay blocks.
4. Drying area	After the clay blocks were crushed, the workers move the crushing pieces of clay to the drying area and allowed it dry naturally. It usually took at least one day to dry. After it was dried, the workers used the canvas to cover it so as to prevent it from the rain.
5. Pools for mixing the raw materials	After drying the clay, the workers moved the crushing pieces of clay into the pool for mixing the raw materials. For the general clay, the workers needed to put the clay sand (黃花沙) and water into the pool and mixed it with the clay. For the red clay, the workers needed to put a sieve on the hole of the pool and filter the red clay because of its high sand content. After filtering the red clay, the workers poured water into the pool and mixed it with the red clay. Then, the mixture would be settled for a few days. After a few days, the workers scooped the water up from the pool and place the mixture on the drying rack.
6. Indoor working area for molding and demolding	Next, the workers start to shape the clay into the product. One way was to shape the clay by using different machines, for example jiggering machine according to the need for molding. After it was shaped, the workers put it onto the rack in the indoor working area for drying.
7. Plaster and ceramic molds storage area	Another way was to mold the clay by using the plaster mold. The workers took the plaster mold from the plaster mold storage area and put the clay into different plaster molds according to different needs. After it was molded, the workers demolded the product by using censer ash. After that, the workers put it onto the rack in the indoor working area for drying.
8. Indoor working area for glazing and putting the product into the sagger	Then, Leung mixed the glaze and pour it into a plastic bucket. The workers glazed the product according to the need. After the product was glazed, the worker put it in the indoor area and dried it. After a few days, the workers put the glazed product into the sagger.
9. The Ceramic Kiln for firing the product	After all the products were put into the saggars, the workers put the saggars into the Ceramic Kiln. Leung inserted the broken steel tiles between the saggars so as to ensure the saggars would not collapse. After that, the firing of the Ceramic Kiln started. The workers used the brick to cover the entrance of the Ceramic Kiln before firing the products. Then, the workers lit the fire. It took one day to fire the products and the temperature in the Ceramic Kiln was usually 1300 degree Celsius. After the firing was done, the workers removed the bricks at entrances and waited for the Ceramic Kiln to cool down. Then, the workers put on the labour gloves and took out the saggars.
10. Indoor working area for packaging the product	After all the saggars were taken out, the workers took out the products from the saggars. The workers checked the quality of the finished products and discarded the unqualified products onto the slope in the area of Ceramic Kiln. Broken molds and saggars will also be discarded in the vicinity of Ceramic Kiln. Finally, the workers put the products into the baskets. Leung arranged the truck to deliver the products to the customers.



## 4. SOCIAL VALUE

### 4.1 The role of Ceramic Kiln in the art society in Hong Kong

In the 1940s, the wartime just ended and the society in China and Hong Kong began the post-war recovery. The art society was less important compared with the economy and the people's livelihood during that time. Although there were different kinds of kilns, the kilns, including the Ceramic Kiln were constructed and used for manufacturing production but not for the art production. However, the construction of the kiln and the companies in the ceramic-related fields attracted a group of experienced ceramic craftsmen from Shiwan came to Hong Kong to work. It sowed a seed of the Shiwan ceramic art in the local art society.

In the 1950s, the Ceramic Kiln was managed by Leung Sum, an experienced ceramic craftsman from Shiwan. Leung allowed his compatriots, such as Liu Chuan 劉傳, Lai Chiu 黎潮 and Fok Luk 霍六 who were also experienced ceramic craftsman from Shiwan and other artists to use the kiln.<sup>41</sup> The Ceramic Kiln became a ceramic art base for the craftsmen and local artists to produce the work of art and to exchange the ideas about ceramic art. It facilitated the spread of the Shiwan ceramic techniques and art pieces in Hong Kong, which highly promoted the development of the ceramic art in Hong Kong.

One of the storage areas at the Ceramic Kiln was used by the former Tao Sing Ceramic Company which was run by Hui Brothers (since 1952) who produced Fujian archaised ceramics. The Hui also invited some ceramic artists such as Lai Chiu, Lai Pui 劉培, Fok Chiu 霍照, and Ho Ping-chung 何秉聰 to produce Shiwan ceramic figures for sale. Therefore, some Ceramic Kiln products also have 'Tao Sing' as their brand."<sup>42</sup>

According to Leung Pak Chuen, the Ceramic Kiln had produced tools and supplied raw materials for the school to provide art class. Leung Sum and his family members and workers would get the raw materials nearby or bought from other places. The Ceramic Kiln also produced the tools, such as the plaster mold for ceramic

production. In its heyday, the Ceramic Kiln provided tools and raw materials to the schools from all over Hong Kong.<sup>43</sup> It reflects the importance of the Ceramic Kiln in promoting the art development in school from the 1950s to the 1970s.

Please refer to the Appendix II – Local artists associated with the Ceramic Kiln for details on the personal experience of the local artists at the Ceramic Kiln.

### 4.2 The role of Ceramic Kiln in the manufactory industry in Hong Kong

The Ceramic Kiln supported the revival of the ceramic industry. Tuen Mun was an area in which the major economy sectors were fishing and agricultural industries, but it also has a long history of local manufactory industry with the ceramic industry being one of those. The ceramic industry in Tuen Mun started since the 19<sup>th</sup> century, which was probably one of the earliest areas with such industry in Hong Kong.<sup>44</sup> However, the ceramic industry, and even the whole manufactory industry was not valued until the establishment of Keen Sang Brickworks and Castle Peak Ceramic Company from the 1920s to the 1930s. The two companies soon became popular and their business grew significantly. The two companies brought along technologies and talented craftsmen in the field of ceramic industry from mainland China. It led to the revival of the ceramic industry in Hong Kong. During this period, the Ceramic Kiln was constructed at Hin Fat Lane. It started with producing village potteries which took part in the revival of the ceramic industry.

In the 1940s, most of the industries were severely damaged due to the Japanese Occupation. The growth of the ceramic industry ceased. The supply of the products produced from the Ceramic Kiln was limited to the villages nearby subsequently.

In the 1950s, Hong Kong transformed from an entrepôt to an industrial city. More and more manufacturing factories were constructed in Hong Kong from the 1950s to the 1970s. The Castle Peak area became one of the popular areas where other ceramic factories were built. (Fig. 29)

<sup>41</sup> Oral history interview with Leung Pak Chuen 梁柏泉 on 10 July 2019. Interviewers: Wong Wai-yee Sharon, Fan Tsz Kiu Kiko.

<sup>42</sup> Ho, Bing Chung, *Miscellaneous Studies on Ceramics*. Hong Kong: Wide Angle Press, 1978, pp. 179-188.

<sup>43</sup> Oral history interview with Leung Pak Chuen 梁柏泉 on 10 July 2019. Interviewers: Wong Wai-yee Sharon, Fan Tsz Kiu Kiko.

<sup>44</sup> Sit, F.S. Victor 薛鳳旋 and Alan Birch, *Tuen Mun-From Ancient Port To City of Future*, Hong Kong: Tai Dao Publishing Co., 1982, p. 50.



The Ceramic Kiln was taken over by Leung Sum and was modified to produce with higher quality and quantity. The Ceramic Kiln started to produce ceramic products for the local market. The products were sold under the company name of Kung Hop Pottery Kiln or Hong Kong Ceramic Arts Studio under the management of the Leung family. The scale of the company gradually became larger. It started to have business cooperation with other manufacturing factories, such as Keen Sang Brickworks.<sup>45 46</sup> The Ceramic Kiln contributed to not only the ceramic industry, but also other manufactory industries, such as building materials industry with product like bricks and roof tiles.<sup>47</sup> (Fig. 30) The Ceramic Kiln became a facilitator to foster the development of the manufactory industry in Hong Kong during the time when Hong Kong was an industrial city.

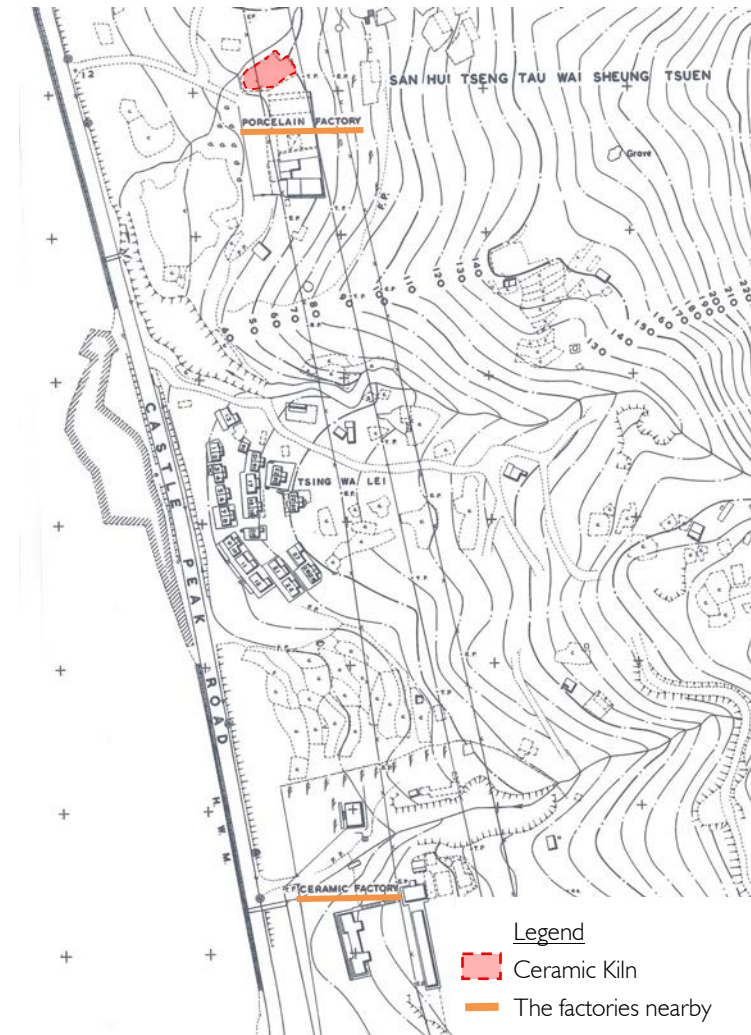


Fig. 29. Map showing the location of the kiln and the factories nearby in 1957.<sup>48</sup>

<sup>45</sup> Keen Sang Brickworks was a significant building materials manufacturer in Hong Kong, which had been produced building materials for the construction of the old Bank of China Tower and Nurses Quarters of Kwong Wah Hospital.

<sup>46</sup> Interview with Mr. Leung Pak Chuen on 16th May 2018. Interviewer: Ng Wan-ye Wendy.

<sup>47</sup> 鄉師自然學校 was found to have roof tiles produced by Keen Sang Brickworks. (Wong, Wai-ye, Sharon, 'Future Cities: Preserving Dragon Kiln in Greater Bay Area', Mingpao 8 April, 2018).

<sup>48</sup> Survey and Mapping Office, Lands Department, Hong Kong SAR Government, acc. no.: 141-NW-A (Ed 1957) (partial). Aerial Photo and Map from Lands Department © The Government of the Hong Kong SAR Reference no. G16/2019.



Fig. 30. The brick produced by Castle Peak Ceramic Company which can be found in Ceramic Kiln.

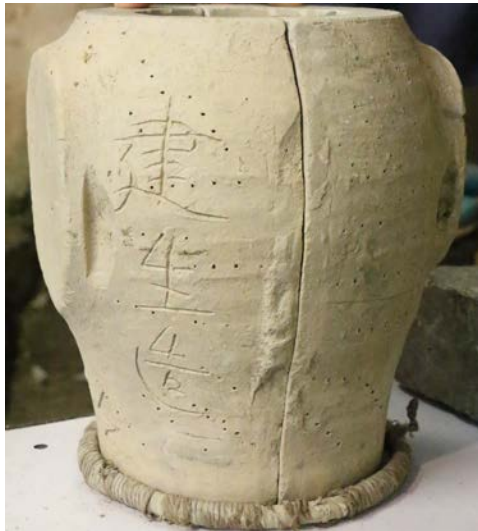


Fig. 31. The ceramic mold produced by Keen Sang Brickworks which can be found in Ceramic Kiln.

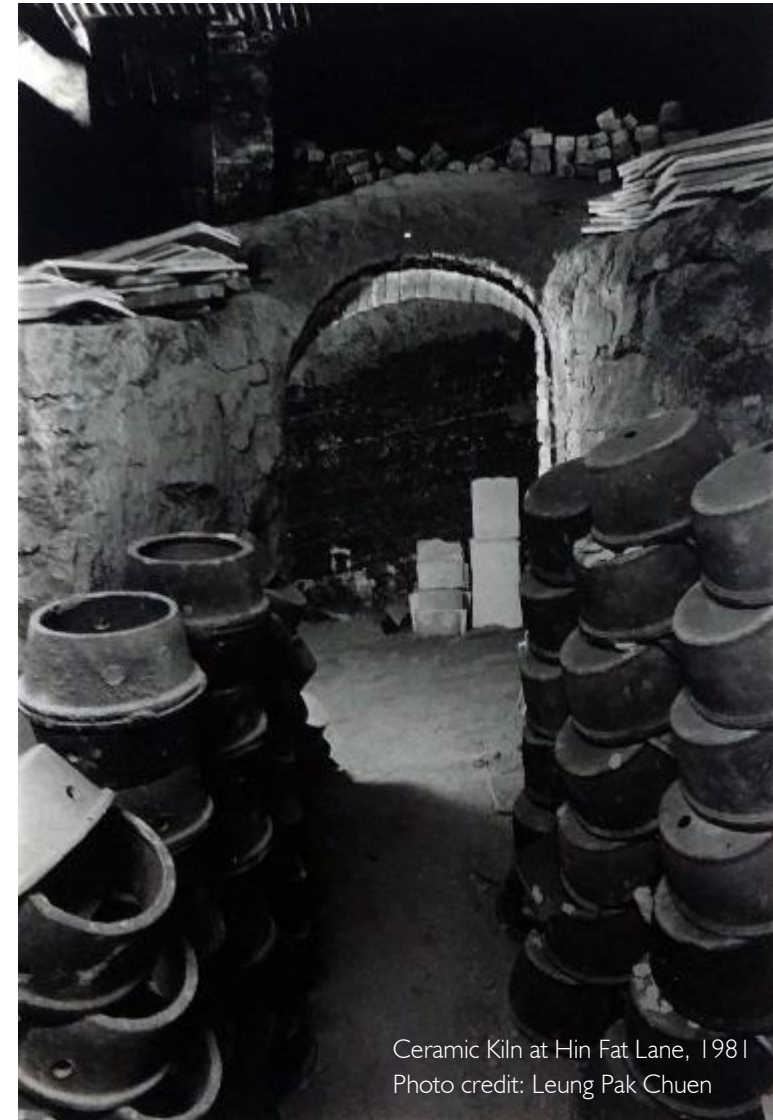
## 5. STATEMENT OF SIGNIFICANCE

### 5.1 Statement of Significance

The Ceramic Kiln is a physical evidence to the manufacturing industrialization in Tuen Mun since the 1940s. Constructed probably in the early 1940s by Szeto Nu Tao, the location was selected to be at the Castle Peak area for its fruitful resources of clay for producing construction materials and pottery. Together with other manufacturers in the Castle Peak area, Ceramic Kiln played an important role in forming the construction materials and pottery manufacturing hub in the Castle Peak area. Since 1951 after Leung Sum took over the Ceramic Kiln and modified the kiln, the efficiency of Ceramic Kiln was greatly improved, which was at the heyday during the manufacturing industrialization in Tuen Mun after WWII.

Apart from its important role in the industrialization history in Tuen Mun, the Ceramic Kiln also plays an important role in the art society in Hong Kong. Since the time managed by Leung Sum, an experienced craftsman from Shiwan, Leung invited his compatriots from Shiwan and other artists to use the kiln. Since then, the Ceramic Kiln became a ceramic art base for the production of art pieces and exchange of ideas on ceramic art.

The Ceramic Kiln was built in a long-vaulted single chamber along the hill slope. It was built of mud bricks with rubble stone walls supporting on both sides of the fire chamber. The kiln was built in the model of a Shiwan dragon kiln, with the typical five stroke holes in each row on top of the fire chamber. At the time it was built, it was the third dragon kiln built in Hong Kong and was considered to be the largest dragon kiln in Hong Kong. Today, it is a rare surviving example of dragon kiln in intact condition in Hong Kong.



Ceramic Kiln at Hin Fat Lane, 1981  
Photo credit: Leung Pak Chuen



## 5.2 Character defining elements

The principal Character Defining Elements are listed below, which means the materials, forms, location, spatial configurations, uses and cultural associations or meanings that contribute to the heritage value of a historic place.<sup>49</sup>

### 5.2.1 Definition of terms<sup>50</sup>



Levels of Significance	Meaning
High	Elements which make a major contribution to the overall significance of the place. Spaces, elements or fabric originally of substantial intrinsic quality, and exhibit high degree of intactness and quality, though minor alterations or degradation may be evident.
Medium	Elements which make a moderate contribution to the overall significance of the place. Spaces, elements or fabric originally of some intrinsic quality, and may have undergone minor or extensive alteration or degradation.
Low	Elements which make a minor contribution to the overall significance of the place. Spaces, elements or fabric originally of little intrinsic quality, and may have undergone alteration or degradation. Original spaces, elements or fabrics of some quality, which have undergone extensive alteration or adaptation to the extent that only isolated remnants survive.

---

<sup>49</sup> Definition extracted from Parks Canada Standards and Guidelines for the Conservation of Historic Places in Canada. Retrieved on December 15 2010, from Parks Canada under Her Majesty the Queen in Right of Canada, Website: [http://www.pc.gc.ca/docs/pc/guide/nldlpc-sgchpc/index\\_e.asp](http://www.pc.gc.ca/docs/pc/guide/nldlpc-sgchpc/index_e.asp).


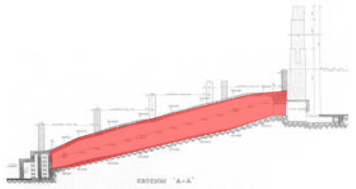

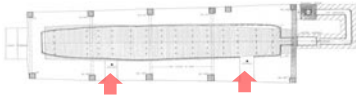
<sup>50</sup>The definition of terms is developed based on James Semple Kerr, *Conservation Plan: A Guide to the Preparation of Conservation Plans for Places of European Cultural Significance*, National Trust, 2004.

### 5.2.2 Setting and context


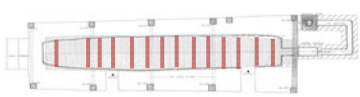

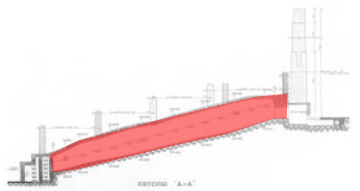


	Character Defining Elements	Level of significance	Photos	Location
S-01	The Ceramic Kiln being built along the hill slope and in close vicinity to the Castle Peak Road	<p>High</p> <ul style="list-style-type: none"> <li>The sloped site was essential to facilitate the construction of the sloping up dragon kiln structure</li> <li>The kiln was constructed close to Castle Peak Road to facilitate the transportation of the ceramic products</li> </ul>	 <p>1964</p>	 <p>PROJECT SITE</p> <p>Project Site*</p> <p>Grading boundary of the Ceramic Kiln</p> <p>* Subject to detailed design</p>




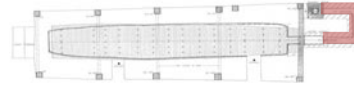

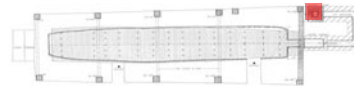
### 5.2.3 Ceramic Kiln


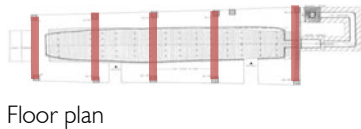

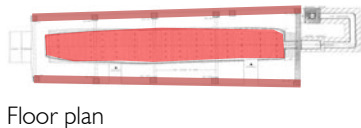
	Character Defining Elements	Level of significance	Photos	Location
C-01	Front furnace with two blocked original openings and two side openings	<p>High</p> <p>An important element of the Ceramic Kiln, with modification by the 2<sup>nd</sup> operator, Leung Sum</p>		 <p>Floor plan</p>

	Character Defining Elements	Level of significance	Photos	Location
C-02	Vaulted fire chamber built along the slope of hill	High Signifies the form as a dragon kiln		 Section
C-03	Two side entrances at the fire chamber	High An important element of the Ceramic Kiln		 Floor plan




	Character Defining Elements	Level of significance	Photos	Location
C-04	<b>Stroke holes</b> <ul style="list-style-type: none"> <li>5 stroke holes in a row</li> <li>2 stroke holes at the front</li> </ul>	<b>High</b> Signifies the model following the tradition of Shiwan dragon kiln		 Floor plan
C-05	Interior of the fire chamber with remnant of crystals on both sides and a grille in the end	<b>High</b> An important element of the Ceramic Kiln		 Section
C-06	‘The throat of chicken’ – opening to the after burner	<b>High</b> An important element of the Ceramic Kiln		 Section

	Character Defining Elements	Level of significance	Photos	Location
C-07	After burner	High An important element of the Ceramic Kiln		 Section
C-08	Underground tunnel	High An important element of the Ceramic Kiln	 Hole above the underground tunnel	 Floor plan
C-09	Brick chimney	High An important element of the Ceramic Kiln		 Floor plan

	Character Defining Elements	Level of significance	Photos	Location
C-10	Original roof structure of the shelter <ul style="list-style-type: none"> <li>▪ Brick columns</li> <li>▪ Timber roof structure</li> </ul>	High An important element of the Ceramic Kiln		 <p>Floor plan</p>
C-11	Mud brick construction and rubble stone supporting walls	High An important element of the Ceramic Kiln		 <p>Floor plan</p>



	Character Defining Elements	Level of significance	Photos	Location
C-12	End wall made of pottery previously produced at the Ceramic Kiln	High An important element of the Ceramic Kiln		 Floor plan

## 6. PUBLIC HOUSING PROPOSAL

### 6.1 Public housing proposal

The Project Site was zoned “Residential (Group A) 26” for high-density residential development according to the approved Tuen Mun OZP No. S/TM/35.<sup>51</sup> It is located at Area 39, Hin Fat Lane, Tuen Mun. It is currently vacant, which was previously occupied by a 3-storey ex-Pui Oi School Compound and will be developed for public housing by HKHA. The Project Site is formed by two flat platforms at +5.65mPD and +11.7mPD. There is no heritage site identified within the Project Site boundary. However, the Ceramic Kiln which is accorded as a Grade 3 Historic Building is located within 50 metres and to the north-east of the Project Site boundary. This HIA was prepared aims to minimize possible impact to this heritage site in a close proximity.

### 6.2 Technical Assessment Report by CEDD

In the Technical Assessment Report by CEDD, there are some initial assessments and proposed mitigation measures were recommended in view of the proposed public housing development adjacent to the Ceramic Kiln. According to the findings of this Technical Assessment Report, there is no insurmountable technical problem for the proposed public housing development. It is recommended in the Technical Assessment Report to preserve the Ceramic Kiln at its original location. Given that the Ceramic Kiln is situated outside the Project Site main structure with a distance of approximately 30m, potential direct impacts on the Ceramic Kiln from the proposed public housing development is not anticipated during the construction phase and operation phase.<sup>52</sup>

It is also mentioned in the Technical Assessment Report that indirect impacts on the structural integrity of the Ceramic Kiln in the form of ground-borne vibration, ground settlement and tilting due to construction works might arise during the construction stage. A detailed geotechnical assessment and a condition survey of the Ceramic Kiln prior to the commencement of the construction phase are recommended. During construction phase, the “3A” Monitoring System (alarm/alert/action) on the ground-

borne vibration amplitude, ground settlement and tilting shall be formulated to ensure the structural integrity of the Ceramic Kiln.

In view of the above recommendations raised in the Technical Assessment Report, the following design considerations and measures are adopted for the Structural and Architectural Design.

1. The main structure of the proposed public housing development is located approximately 30m away from the Ceramic Kiln, to maintain the existing distance between the Ceramic Kiln and the Project Site, as mentioned in the Technical Assessment Report prepared by CEDD. (Fig. 33)
2. A +11.7mPD platform is designated as landscape buffer between the Ceramic Kiln and the Project Site. (Fig. 34)
3. Monitoring measures are required during the construction stage of the proposed public housing development to ensure the structural integrity of the Ceramic Kiln.
4. Excavation and Lateral Support Works (ELSW) will be extensive, not only due to the construction of pile cap / raft footing, but also the construction of retaining walls to cater for the ground level difference. In order to prevent undue ground settlement and ensure that there will be no adverse effect to the nearby Ceramic Kiln, grout curtain and pumping test will be incorporated in the ELSW.

### 6.3 Architectural design

1. One block with 37 domestic storeys, providing a total of about 950 flats, on top of a two-storey podium with carpark, welfare facility and Estate Management Office.
2. The building height restriction of +125mPD is stipulated in the approved Tuen Mun OZP No. S/TM/35.
3. An emergency vehicular access (EVA) is designated inside the Project Site boundary and the only vehicular access is from Hin Fat Lane.
4. +11.7mPD platform is designated as landscape buffer from the Ceramic Kiln.

<sup>51</sup> The Project Site has an overall maximum permissible plot ratio (PR) of 6.5 of which the domestic part should not exceed 6.0, and a building height restriction of +125m MPD. The Planning Brief was approved by the New Territories District Planning Conference on 8 May 2019.

<sup>52</sup> Ibid.

- Local trees and the natural landscape are preserved surrounding the Ceramic Kiln, which could also act as a buffer for ground-borne vibration to the Ceramic Kiln generated by the proposed development during the construction phase.

## 6.4 Structural design

- Large Diameter Bored Piles with an average pile length of 20m will be adopted as the foundation for the domestic block. (Fig. 36)
- Mini-piles with an average pile length of 32m will be adopted for the car ramp structures.
- Other lightweight external structures will be supported on raft/pad footings.

## 6.5 Heritage and conservation considerations

### 6.5.1 Relationship with the Ceramic Kiln

- A setback of approximately 30m from the main structure of the proposed public housing development to the Ceramic Kiln.
- +11.7mPD platform is designated as landscape buffer from the Ceramic Kiln. No domestic building block will be built at the upper platform which is closer to the Ceramic Kiln.

### 6.5.2 Structural design consideration & monitoring measures

The following engineering design measures and method of construction have been considered to minimize and/or mitigate impacts on the Ceramic Kiln:

- Large diameter bored piles instead of percussive pile types to be adopted to minimize possible ground-borne vibration and settlement induced to the Ceramic Kiln.
- Construction methods which would likely cause higher degree of ground-borne vibration (e.g. excavation by chiselling) will be prohibited through specifying limitations in the construction contract.

- A separation of approximately 30m is provided between the Ceramic Kiln and the piling works as a buffer zone for attenuation or reduction of the vibration energy generated by the piling works.
- Before commencement of construction works, condition survey with photographic record of the Ceramic Kiln will be conducted. The monitoring proposal will be prepared for the Ceramic Kiln based on the result of condition survey and submit to AMO for comment.
- A vibration control / monitoring scheme will be imposed in compliance with the requirements for vibration-sensitive and dilapidated buildings stated in Appendix A of PNAP APP-137 and clause 7.2.6 of the Code of Practice for Foundations (see Section 2 for details), with the 3A levels (Alert, Alarm and Action) to be strictly following AMO's recommendation for Grade 3 Historic Building, which are listed as the following:

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

- Construction works shall be suspended immediately when a vibration monitoring reading is found to exceed the limits given in the vibration control / monitoring scheme. An investigation report and remedial proposal shall be submitted to examine the construction method and review ground response history of the monitoring record. The construction works shall only be resumed after the acceptance of the investigation report and remedial proposal.
- Two sets of monitoring checkpoints are proposed to be installed for monitoring the foundation works. One set would be installed in proximity of the Project Site area to monitor the works and the other set would be installed in the Ceramic Kiln site area.
- Periodic visual inspections of the Ceramic Kiln would be conducted during the course of the works.





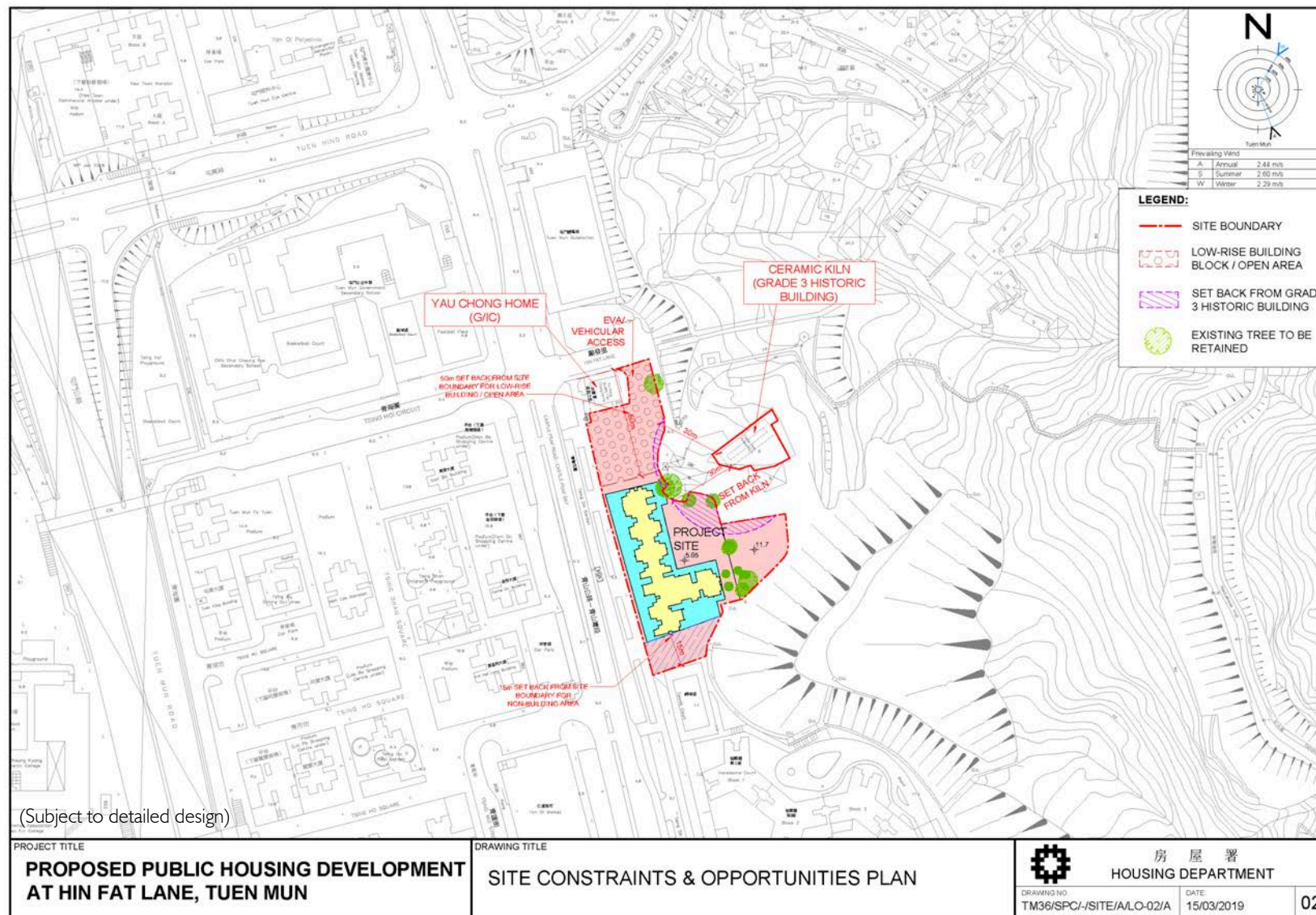


Fig. 33. Site plan of the proposed public housing development and set back to the Ceramic Kiln (not to scale).<sup>54</sup>

<sup>54</sup> Survey and Mapping Office, Lands Department, Hong Kong SAR Government, acc. no.: 6-SW-6D (Ed 2019) (partial). Aerial Photo and Map from Lands Department © The Government of the Hong Kong SAR Reference no. G16/2019.



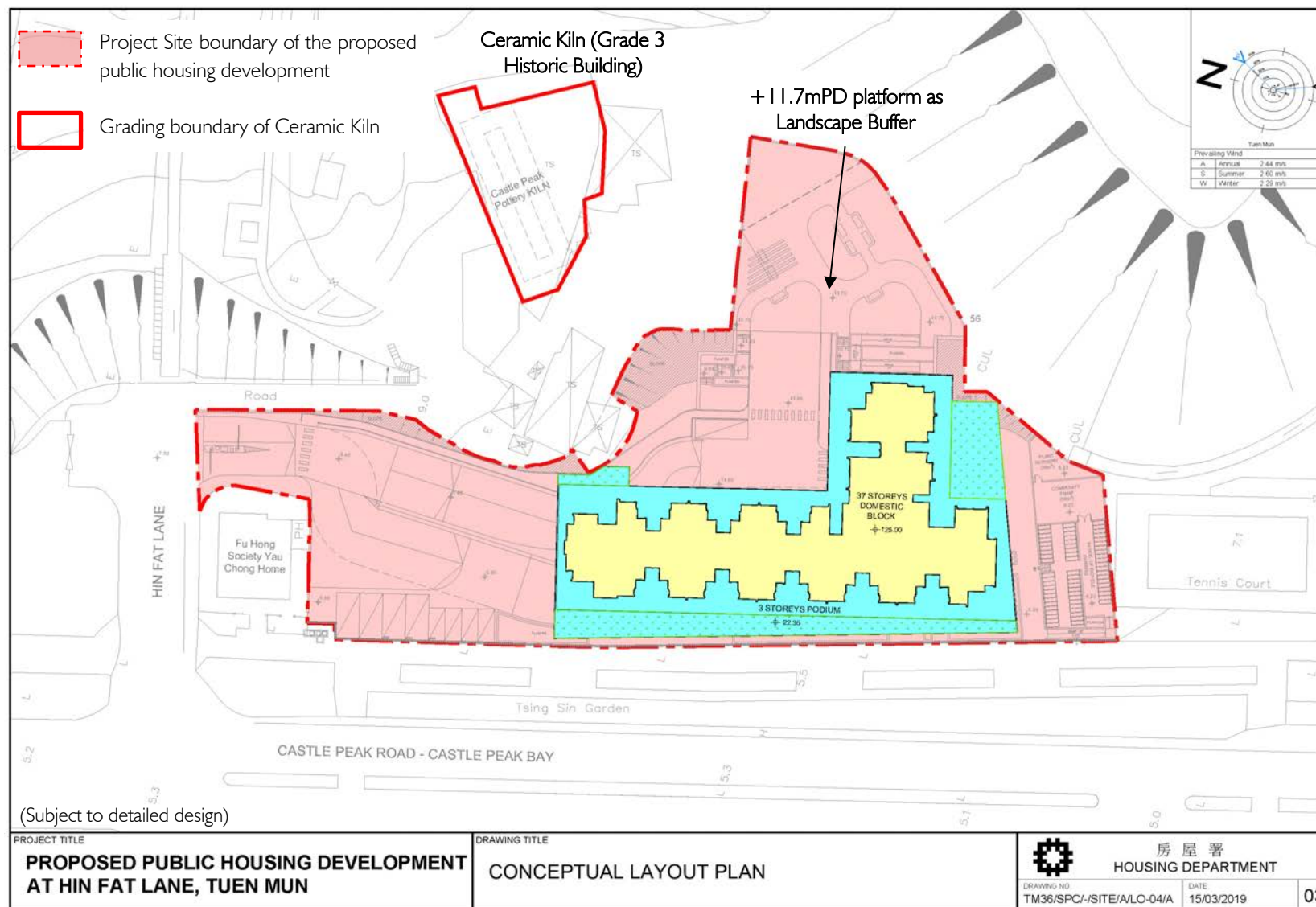


Fig. 34. Proposed Conceptual Layout Plan of the proposed public housing development (not to scale).<sup>55</sup>

<sup>55</sup> Survey and Mapping Office, Lands Department, Hong Kong SAR Government, acc. no.: 6-SW-6D (Ed 2019) (partial). Aerial Photo and Map from Lands Department © The Government of the Hong Kong SAR Reference no. G16/2019.

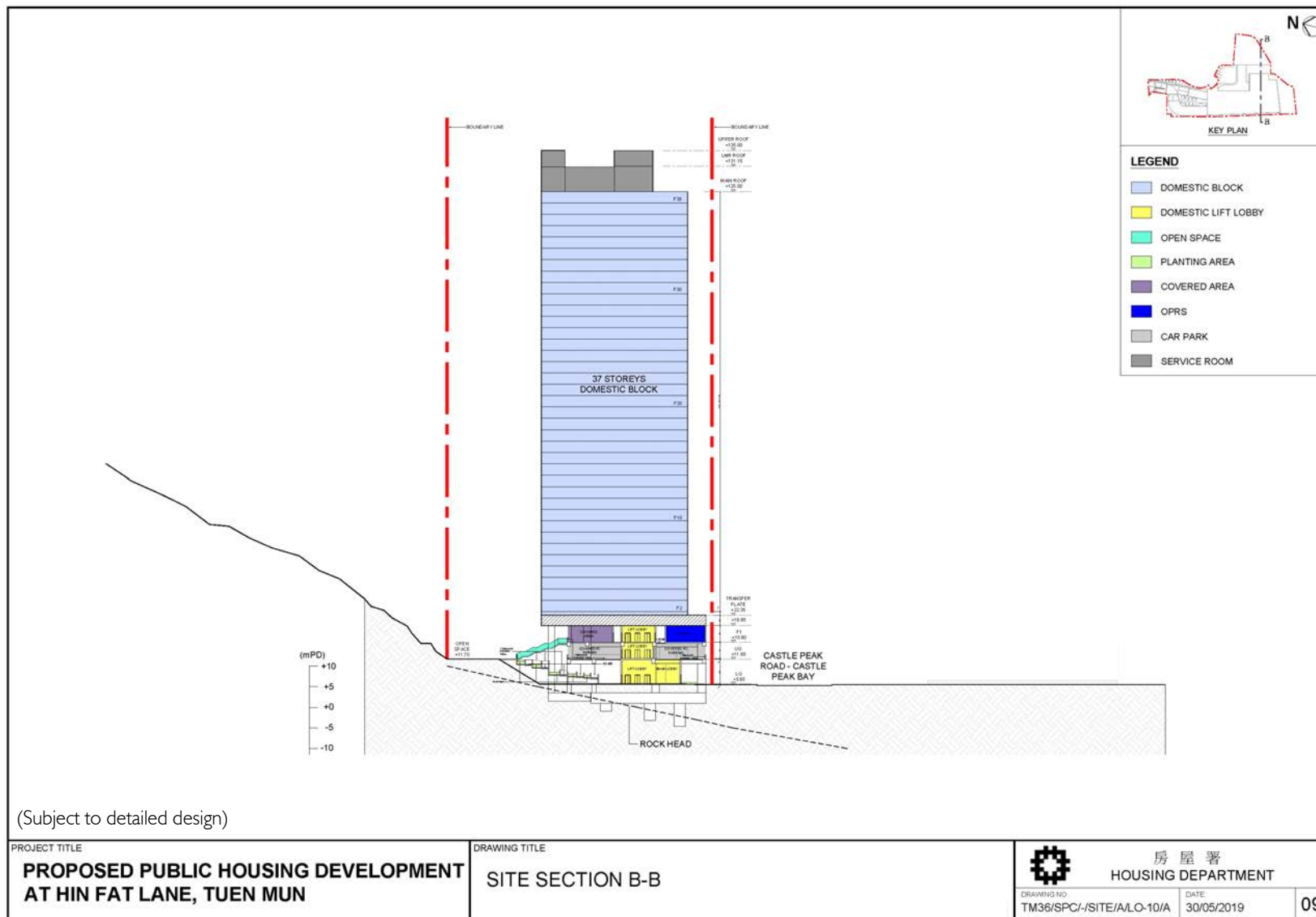


Fig. 35. Site Section B-B of the proposed public housing development (not to scale).



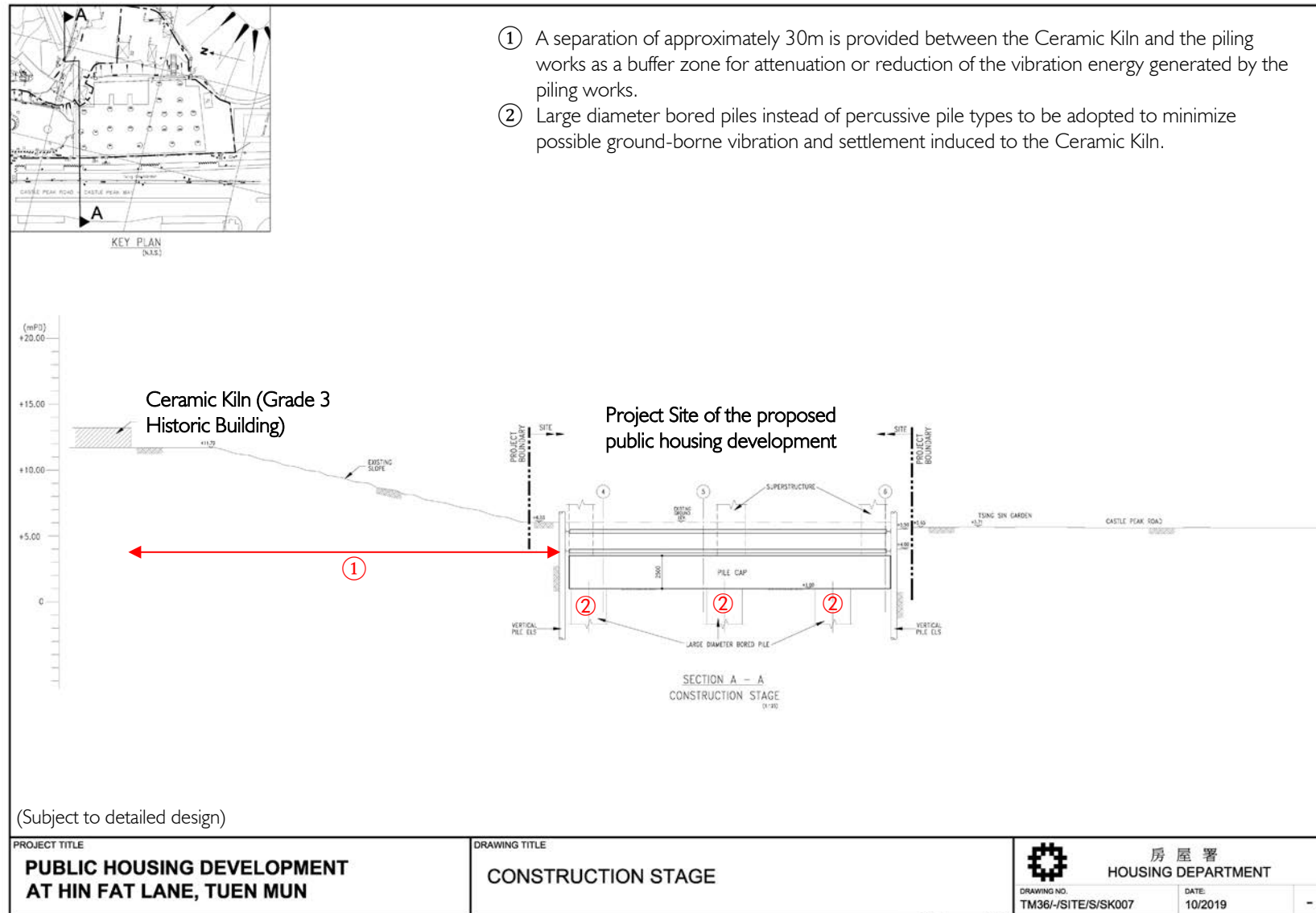


Fig. 36. Site section showing the relationship of the foundation construction works and the Ceramic Kiln (not to scale).

# 7 CONSERVATION POLICIES AND GUIDELINES

## 7.1 Opportunities and constraints

The main structure of the proposed public housing development would be set back approximately 30m away from the Ceramic Kiln in accordance with the recommendation by CEDD during the rezoning process. In addition to the Ceramic Kiln itself, it is worth to note that the cultural significance of the Ceramic Kiln is also associated with the geographical setting and the environment, i.e. it was built along the hill slope and in the close vicinity to the Castle Peak Road. Apart from the Ceramic Kiln, there are some features associated to the manufacturing process of the Ceramic Kiln scattering around.

As the proposed public housing development is to be built adjacent to the Ceramic Kiln, it may increase the opportunity for the public to know the presence of Ceramic Kiln and understand its cultural significance in the long run. Although the Project Site is away from the grading boundary of the Ceramic Kiln, the conservation policies and guidelines should be developed with a main objective to minimize and monitor the impact of the works at the proposed public housing development to the Grade 3 Ceramic Kiln and its Character Defining Elements.

## 7.2 Conservation Goals

1. To fully understand the cultural significance of the whole site of Ceramic Kiln and identify all Character Defining Elements that contribute to its significance so as to establish appropriate conservation guidelines.
2. To conserve probably the last remaining wood-fired brick dragon kiln in Hong Kong in terms of its setting, the unique kiln structure and features associated to the manufacturing process and to ensure its integrity and authenticity without being jeopardized during the course of the construction works in the adjacent proposed public housing development.
3. To provide sufficient monitoring measures to ensure the intact condition of the Ceramic Kiln throughout the construction stage of the proposed public housing development.

## 7.3 Conservation Principles

The conservation policies and guidelines prepared in this Chapter are developed from international charters and their conservation principles.

### 7.3.1 International Charters and Principles

1. **The Venice Charter (1964)** (International Charter for the Conservation and Restoration of Monuments and Sites) – the most fundamental principles and international standards for conservation and restoration of heritage buildings and sites adopted by UNESCO (United Nations of Education, Science & Cultural Organization) & ICOMOS (International Council of Monuments and Sites).
2. **The Burra Charter (2013)** (The Australia ICOMOS Charter for Places of Cultural Significance) – a worldwide recognized standard of establishment and implementation of conservation, and provides guidance for the concept and definition of cultural significance.
3. **The China Principles (2015)** (Principles for the Conservation of Heritage Sites in China) – a document that covers general conservation principles, a management planning process and intervention guidelines, the China Principles was developed based on the Burra Charter but with modifications made specifically according to local cultural and political conditions in China.

## 7.4 Conservation Policies and Guidelines

### 7.4.1 New use and compatibility

#### Policy NU01

The new use of the adjacent Project Site should be compatible to the historic place without compromising the cultural significance of the Ceramic Kiln.

#### Conservation guidelines

The proposed new use as public housing to provide domestic units, carpark, welfare facilities shall be accommodated within the Project Site boundary without affecting the condition of the Ceramic Kiln.

### 7.4.2 Respect the Setting of the Ceramic Kiln

#### Policy SC01

Any works in the proposed public housing development should not affect the setting of the Ceramic Kiln.

#### Conservation guidelines

1. The main structure of the proposed development in the Project Site shall follow the 30m set back from the Ceramic Kiln as recommended by CEDD.
2. In addition to this, the proposed public housing development will not affect the hill slopes(s) where the Ceramic Kiln is/are situated.

### 7.4.3 Protection of Built Fabrics

#### Policy BF01

The Ceramic Kiln should be protected through sufficient monitoring measures to prevent any adverse impact incurred during the course of construction of the proposed public housing development.

#### Conservation guidelines

1. The Ceramic Kiln and its Character Defining Elements are all confirmed to be outside the Project Site boundary of the proposed Public Housing Development.
2. All the Character Defining Elements of the Ceramic Kiln should be provided with periodic monitoring and inspection to ensure they are in place and in intact condition during the course of the works.
3. Vibration, settlement and tilting monitoring measures should be provided with the 3A levels (Alert, Alarm and Action) to be agreed with AMO during the course of the works from foundation to the completion of the superstructures.

4. Different sets of monitoring points should be provided in the vicinity of the Project Site and the Ceramic Kiln respectively, with locations and frequency to be agreed by AMO.
5. Periodic visual inspections of the Ceramic Kiln should be conducted during the course of the works and the monitoring data should be submitted for AMO's noting, comment and record.
6. In case of the monitoring reading is found to exceed the limits given in the control scheme during the course of the works, the construction activities shall be suspended immediately. Investigation report shall be prepared to investigate the reason(s) and remedial measures shall be conducted before resumption of the works. Report to Project Team of HKHA and AMO, and seek specialist advice of kiln structures, if necessary.

### 7.4.4 Documentation

#### Policy DC01

A full photographic record should be carried out to record the existing condition of the Ceramic Kiln including all its Character Defining Elements prior to any works in the Project Site.

#### Conservation guidelines

1. The photographic record should be carried out by experienced and professional surveyors/ conservationists making reference to the requirements from AMO. HKHA and AMO should each be given a full set of the records.

### 7.4.5 Implementation

#### Policy IP01

The mitigation measures set out in this HIA shall be implemented and observed by different parties of this Project.

### Conservation guidelines

1. The Project Proponent – the HKHA shall take the lead to ensure the mitigation measures agreed by AMO and set out in this HIA will be adopted in the detailed design stage and implemented throughout the construction stage.
2. The project implementation team shall refer to the HIA from time to time during different stages of the works from design, tendering and construction stage to ensure the mitigation measures, monitoring measures and protective works have been incorporated and executed.
3. The works contractor(s) shall also well observe the requirements and mitigation measures set in this HIA to ensure the mitigation measures, monitoring and protective works have been incorporated and executed, in particular to any works in close proximity to the nearby site where the Ceramic Kiln and its Character Defining Elements are located. Contractors shall be cautious about falling objects, vibration and settlement monitoring, etc.




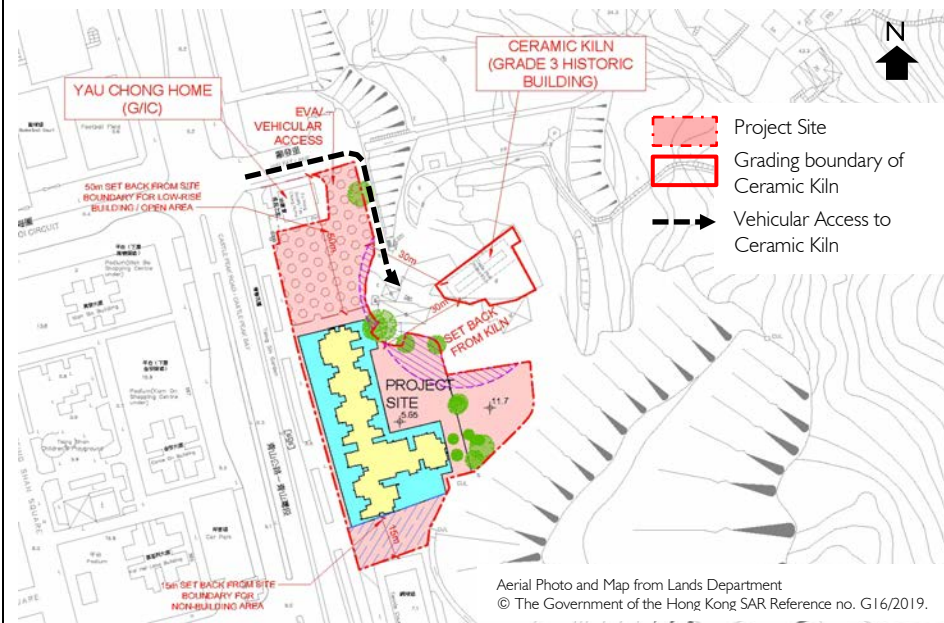
## 8. HERITAGE IMPACT ASSESSMENT


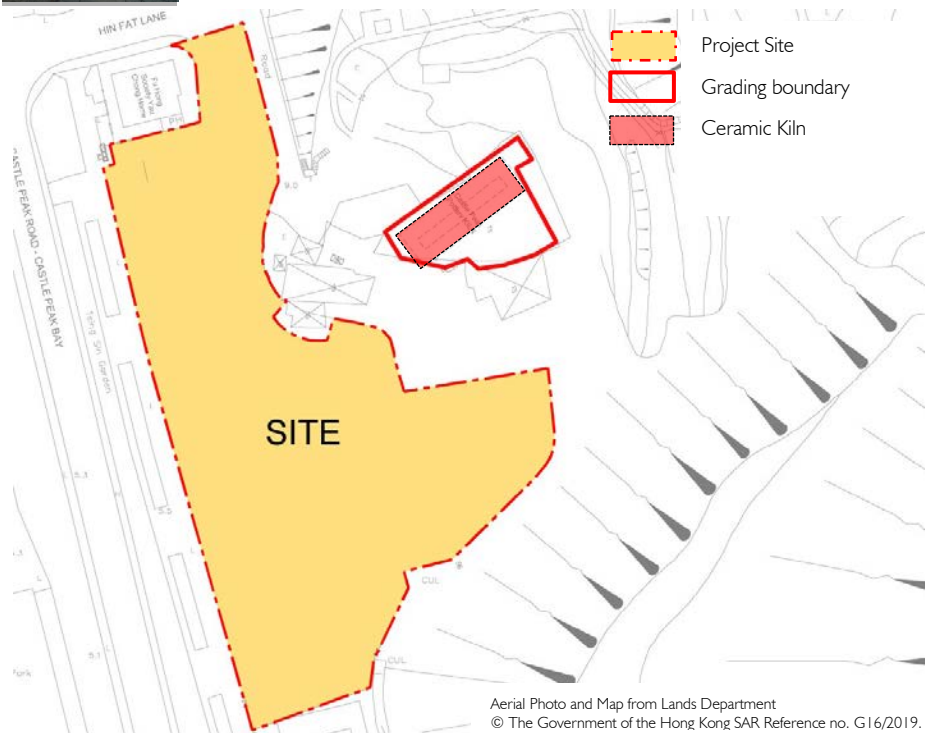
### 8.1 Impact Level


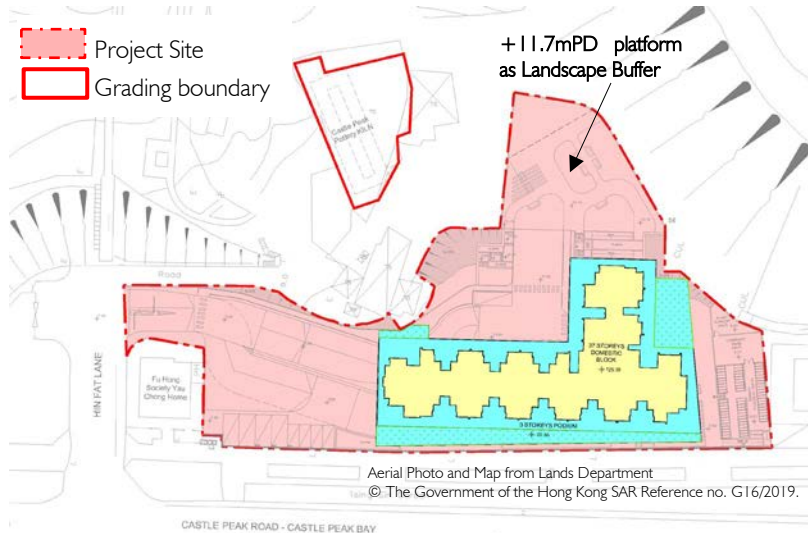
Impact level	The evaluation of heritage impact assessment in the proposal is classified into five levels of impact based on the type and extent of the effects concluded in the Heritage impact Assessment: <sup>56</sup>
Beneficial impact	the impact is beneficial if the proposal will enhance the preservation of the heritage site;
Acceptable impact	the assessment indicates that there will be no significant effects on the heritage site;
Acceptable impact with mitigation measures	there will be some adverse effects, but these can be eliminated, reduced or offset to a larger extent by specific measures;
Unacceptable impact	the adverse effects are considered to be too excessive and are unable to mitigate practically;
Undetermined impact	the significant adverse effects are likely, but the extent to which they may occur or may be mitigated cannot be determined from the study. Further detailed study will be required for the specific effects in question.

<sup>56</sup> Antiquities and Monuments Office, *Guidelines for Heritage Impact Assessment*, June 2010. Development Bureau, *Technical Circular (Works) No. 6/2009 – Heritage Impact Assessment Mechanism for Capital Works Projects*, 2009.

## 8.2 Impact assessment

	Assessment Items/ Proposed Works	Affected CDEs	Level of Significance	Impact Level	Mitigation Measures
I	<p>The proposed public housing development with a new block with 37 domestic storeys on a podium to be constructed with approximately 30m away from the Ceramic Kiln</p> <div data-bbox="367 488 1039 711">  </div> <div data-bbox="224 724 1164 1348">  <p>Aerial Photo and Map from Lands Department © The Government of the Hong Kong SAR Reference no. G16/2019.</p> </div>	Not applicable	Not applicable	Acceptable impact with mitigation measures	<ol style="list-style-type: none"> <li>1. The main structure of the housing block would be located approximately 30m away from the Ceramic Kiln in accordance with the CEDD's set back recommendation to minimize the impact to the historic site.</li> <li>2. The Project Site is formed by two flat platforms at +5.6mPD and +11.7mPD, with the housing blocks to be constructed at the lower platforms facing the Castle Peak Road and the +11.7mPD platform which is closer to the Ceramic Kiln will be designed as landscape platform functioned as landscape buffer from the Ceramic Kiln.</li> <li>3. The existing road connected to the Ceramic Kiln from Castle Peak Road through the Hin Fat Lane would remain unchanged.</li> <li>4. The proposed public housing development would have its independent vehicular access and carparks.</li> <li>5. The domestic block's configuration and disposition has been optimised to maintain satisfactory ventilation at the Project Site, providing wind corridors for nearby residential development and the Ceramic Kiln.</li> </ol>

	Assessment Items/ Proposed Works	Affected CDEs	Level of Significance	Impact Level	Mitigation Measures																
2	The impact of the foundation works on the Ceramic Kiln	Ceramic Kiln	High	Acceptable impact with mitigation measures	<div><div><p>Ceramic Kiln</p></div><div><p>Aerial Photo and Map from Lands Department © The Government of the Hong Kong SAR Reference no. G16/2019.</p></div></div> <div><div><table><tr><th>Type of Monitoring for</th><th>Alert</th><th>Alarm</th><th>Action</th></tr><tr><td>Vibration (PPV)</td><td>5 mm/s</td><td>6 mm/s</td><td>7.5 mm/s</td></tr><tr><td>Settlement</td><td>6mm</td><td>8mm</td><td>10mm</td></tr><tr><td>Tilting</td><td>1/2000</td><td>1/1500</td><td>1/1000</td></tr></table></div><div><div><div>1. Photographic survey record of the Ceramic Kiln will be conducted before commencement of the foundation works in the Project Site.</div><div>2. Vibration, settlement and tilting monitoring measures would be provided to the Ceramic Kiln during the course of the construction works with the 3A levels (Alert, Alarm and Action) will strictly follow AMO's recommendation for Grade 3 Historic Building, which are listed as the following:</div><div>3. Different sets of monitoring points should be provided in the vicinity of the Project Site and the Ceramic Kiln respectively, with locations and frequency to be agreed by AMO.</div><div>4. Periodic visual inspections of the Ceramic Kiln should be conducted during the course of the works and the monitoring data should be submitted for AMO's record.</div><div>5. Construction works shall be suspended immediately when a vibration monitoring reading is found to exceed the limits given in the vibration control / monitoring scheme. An investigation report and remedial proposal shall be submitted to examine the construction method and review ground response history of the monitoring record. The construction works shall only be resumed after the acceptance of the investigation report and remedial proposal.</div></div></div></div>	Type of Monitoring for	Alert	Alarm	Action	Vibration (PPV)	5 mm/s	6 mm/s	7.5 mm/s	Settlement	6mm	8mm	10mm	Tilting	1/2000	1/1500	1/1000
Type of Monitoring for	Alert	Alarm	Action																		
Vibration (PPV)	5 mm/s	6 mm/s	7.5 mm/s																		
Settlement	6mm	8mm	10mm																		
Tilting	1/2000	1/1500	1/1000																		

	Assessment Items/ Proposed Works	Affected CDEs	Level of Significance	Impact Level	Mitigation Measures
3	Visual impact on the Ceramic Kiln	Ceramic Kiln	High	Acceptable impact with mitigation measures	<ol style="list-style-type: none"> <li>1. The upper platform of the housing development at +11.7mPD, which is closer to Ceramic Kiln would be designed as landscape buffer area.</li> <li>2. The high-rise domestic block will be located on the lower platform adjacent to the Castle Peak Road and kept within the original site boundary of ex-Pui Oi School compound in order to maintain the same separation as the existing.</li> <li>3. The areas of the Ceramic Kiln and features associated to the manufacturing process are mostly located on the north-east side of the Project Site, along the hill slope. The original visual relationship between the Ceramic Kiln and the natural environment of the hill would not be affected.</li> </ol>
	 <p>Project Site at lower level</p> <p>Future Landscape buffer</p> <p>Location of Ceramic Kiln at Hin Fat Lane</p> <p>Existing condition at +11.7mPD level as landscape buffer, next to the Kiln.</p>				 <p>Project Site</p> <p>Grading boundary</p> <p>+11.7mPD platform as Landscape Buffer</p> <p>Aerial Photo and Map from Lands Department © The Government of the Hong Kong SAR Reference no. G16/2019.</p>



## Bibliography

### Official Document

- Antiquities and Monuments Office, *Guidelines for Heritage Impact Assessment*, June 2010. Development Bureau, *Technical Circular (Works) No. 6/2009 – Heritage Impact Assessment Mechanism for Capital Works Projects*, 2009.
- Development Bureau, *Technical Circular (Works) No. 6/2009 – Heritage Impact Assessment Mechanism for Capital Works Projects*, 2009.
- Public Works Department Hong Kong, Tuen Mun Pottery Kiln – Plan and section, Drawing no. A.O.M./5352, 1984. Retrieved from Architectural Drawing Records Unit, Architectural Services Department.
- Survey and Mapping Office, Lands Department, Portion enlargement of the aerial photo: P3F1800, 1964.
- Survey and Mapping Office, Lands Department, Acc. no.: I41-NW-A (Ed 1957)
- Survey and Mapping Office, Lands Department, Acc. no.: 6-SW-6D HP 1S (Ed 2019)
- Town Planning Board, DRAFT TUEN MUN OUTLINE ZONING PLAN NO. S/TM/34 CONSIDERATION OF REPRESENTATIONS NO. R1 TO R921, R923 TO R4409 AND R4412 AND COMMENTS NO. C1 TO C1636 AND C1638 TO C286, Reference No.10449,2018.
- Tuen Mun OZP No. S/TM/35

### Books

- Bard, Solomon Matthews, *Solomon Bard's in search of the past: a guide to the antiquities of Hong Kong*, Hong Kong, the Urban Council, 1988.
- Foshan Ceramics Industry & Trade Group Company (ed.) *Bulletin of Foshan Ceramic Industries*, Guangzhou: Guangdong kejichubanshe, 1991.
- Ho, Bing Chung, *Miscellaneous Studies on Ceramics*. Hong Kong: Wide Angle Press, 1978.
- Hong Kong Urban Council, *Shek-wan Pottery*, Hong Kong: the Council, 1977.
- Hong Kong Urban Council, *Hong Kong Pottery Today*, Hong Kong: the Council, 1984.
- Lau, Chi-pang 劉智鵬, *Tuen Mun Heritage*, Hong Kong: Tuen Mun District Council, 2003.
- Li, Yanjuan, *Shiwan Dragon Kiln Construction and Firing Techniques*, Guangzhou: Shijietushuchubangongsi, 2016.
- Ma, So Mui 馬素梅, *The Theatre on the Roof Ridge: Hong Kong Shiwan Roof Ridge Tiles*, Hong Kong: Ma So Mui, 2016.
- Nigrosh, Leon I, *Claywork: Form and Idea in Ceramic Design*, Second Edition, Worcester, Massachusetts: Davis Publications, 1986.
- Shu Maoguan 舒懋官, Xin'anxianzhi [Xin'an County Gazetteer], juan twenty three-Yi Wen zhier 新安縣志. 卷二十三藝文志二, Qing: Kangxi wuchen 27, 1819.
- Sit, F.S. Victor 薛鳳旋 and Alan Birch, *Tuen Mun-From Ancient Port To City of Future*, Hong Kong: Tai Dao Publishing Co., 1982.
- Szeto, Naomi Yin-yin, *Of Hearts and Hands: Hong Kong's Traditional Trades and Crafts*, Hong Kong: Urban Council, 1996.
- Zhang, Weichi, *Guangdong Shiwan Pottery*, Guangzhou: Guangdong renminchubanshe, 1957.

### Journal

- Li, Liming, 'The Making of Artists: The Construction of Identity and Status among Ceramic Craftsmen in Shiwan, Guangdong since Late Qing', from *Journal of History and Anthropology* 7 (1) (2009).

Li Yan-juan, 'An Exploration of Shiwan Dragon Kiln Protection', from *Journal of Foshan University* (Social Science Edition), 2011, Vol. 29, Issue 4.

### Newspaper

- 'Ceramic Kiln Enlisted as Historical Cultural Relics and Continuing its Production as Living Monument', *Oriental Daily News*, 24 May, 1983.
- Wong, Wai-ye, Sharon, 'Future Cities: Preserving Dragon Kiln in Greater Bay Area', *Mingpao* 8 April, 2018.
- Wong, Wai-ye, Sharon, 'The Future Cities: Castle Peak Dragon Kiln and its Relationship with Shiwan Ceramic Craftsmanship', *MingPao*, 15 April, 2018.
- 屯門唯一完整古式陶窯處於存亡, 1980s (date unknown).

### Website

- Hong Kong Image Database, web Site: <https://digitalrepository.lib.hku.hk/catalog/0z708z918?locale=en>.
- Heritage Information Series: Heritage Impact Statements Guidelines. Retrieved on 4 March 2013 under Heritage Council (Victoria), website: [http://www.dpcd.vic.gov.au/\\_data/assets/word\\_doc/0004/61789/Heritage\\_Impact\\_Statement.doc](http://www.dpcd.vic.gov.au/_data/assets/word_doc/0004/61789/Heritage_Impact_Statement.doc).
- History, retrieved on 26 July, 2019, from Tsing Shan Monastery (2012), Web Site: [http://eng.tsm.org.hk/e\\_c\\_01.html](http://eng.tsm.org.hk/e_c_01.html).
- Statements of Heritage Impact*. Retrieved on 4 March 2013 under Heritage Council (NSW), website: <http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf>.

### Other

- Australia ICOMOS, *The Burra Charter*, 1999.
- Parks Canada, *Standards and Guidelines for the Conservation of Historic Places in Canada*. Retrieved on December 15 2010, from Parks Canada under Her Majesty the Queen in Right of Canada, Web Site: [http://www.pc.gc.ca/docs/pc/guide/nldclpc-sgchpc/index\\_e.asp](http://www.pc.gc.ca/docs/pc/guide/nldclpc-sgchpc/index_e.asp).
- Kerr, J.S. *Conservation Plan*. National Trust of Australia (NSW), 7<sup>th</sup> edition, 2013. Retrieved on 9 April 2013 under Australia ICOMOS, Web Site: <http://australia.icomos.org/publications/the-conservation-plan/>.
- Kate Clark, *Informed Conservation: Understanding Historic Buildings and Their Landscapes for Conservation*, London, English Heritage, 2001.
- Hong Kong Arts Centre, *Booklet of Artists Come Home*, Hong Kong: Hong Kong Arts Centre, 1976.
- Oral history interview with Chan Ping-tim 陳炳添 (Chanptarchive, 2018). Retrieved on 6 August, 2019, Web Site: [https://www.youtube.com/watch?v=i7Z2rqMXKYU&fbclid=IwAR28Hlg5z5AjPWot3xVh8XYnAaNLkt8L9nv2myRRqyeRq7KGlp8K\\_oYCJgY](https://www.youtube.com/watch?v=i7Z2rqMXKYU&fbclid=IwAR28Hlg5z5AjPWot3xVh8XYnAaNLkt8L9nv2myRRqyeRq7KGlp8K_oYCJgY), 40:20-54:28.
- Oral history interview with Leung Pak Chuen 梁柏泉 on 16 May 2018. Interviewer: Ng Wan-ye Wendy.
- Oral history interview with Leung Pak Chuen 梁柏泉 on 10 July 2019. Interviewers: Wong Wai-ye Sharon, Fan Tsz Kiu Kiko.
- RNTPC Paper No. 9/17, for consideration by the Rural and New Town Planning Committee on 13.10.2017, Proposed Amendments to the Approved Tuen Mun Outline Zoning Plan NO. S/TM/33, P.2 and the Attachment V – Technical Assessment Report of the 'Preliminary Development Review for Housing Sites at Tuen Mun Central- Feasibility Study' prepared for CEDD by AECOM Asia Company Limited, Section 8.3. Retrieved on 4 October 2019, under Town Planning Board, website: [https://www.info.gov.hk/tpb/en/papers/RNTPC/589-mtpc\\_9-17.pdf](https://www.info.gov.hk/tpb/en/papers/RNTPC/589-mtpc_9-17.pdf).

## Appendix I – The design of Shiwan dragon kiln

### Comparative study of the Ceramic Kiln at Hin Fat Lane and in Shiwan

Several field visits were paid to the Guangdong Shiwan Ceramics Museum and the Nanfeng Ancient Kiln exhibited within. The museum is a major Chinese historical and cultural site protected at the national level since 2001. Leung Pak Chuen and some Hong Kong ceramic artists who joined the ceramic firing at Nanfeng Ancient Kiln occasionally believed that the kiln structure of the Ceramic Kiln at Hin Fat Lane is very similar to Nanfeng Ancient Kiln in Shiwan. However, no detailed comparison has been made to justify the extent to which the Ceramic Kiln at Hin Fat Lane is a dragon kiln that was built following Shiwan tradition. A literature review was conducted and the two kilns were measured. Data were collected from the curators of the Nanfeng Ancient Kiln and various local museums in Foshan, as well as from the artisans from Foshan New Shiwan Artistic Ceramic Co. Ltd. The major findings are as follows.

#### Kiln Structure

The Nanfeng Ancient Kiln was built during the reign of Emperor Zhengde of the Ming Dynasty (A.D. 1505-1521) and modified four times at a large-scale after the founding of modern China. The existing Nanfeng Ancient Kiln located at No. 6, Gaomiao Road, is a structure preserved since 2014 and was historically modified. It is 34.4m long, 0.8-1.94m high, and 1.54-2.24m wide, with a slope of 12 degrees, and 9 stepping-up pitched tiled roofs with timber frame supporting on the brick pillars outside the dragon kiln. The volume of the entire kiln is about 110 sq m. It can fire up to 10,000 pieces of ceramic product at one time. The fire box faces the southern direction. The kiln was built of bricks made of sand and fire clay, as well as earthen bricks. For the fire box, the design of the Nanfeng Ancient Kiln is one of 'double pigeon cages'. The fire doors for placing firewood and vents are all located at the front. It is also equipped with an operation room to prepare the firing process and to store firewood. The kiln roof is entirely covered with sand slurry to protect the base and help preserve the heat. The chimney is located on the left side of the kiln tail and is connected to the kiln chamber, flue, and smoke well. Four doors are located on the left-hand side of the kiln, each about 1.4 m high and 0.7 m wide.<sup>57</sup>

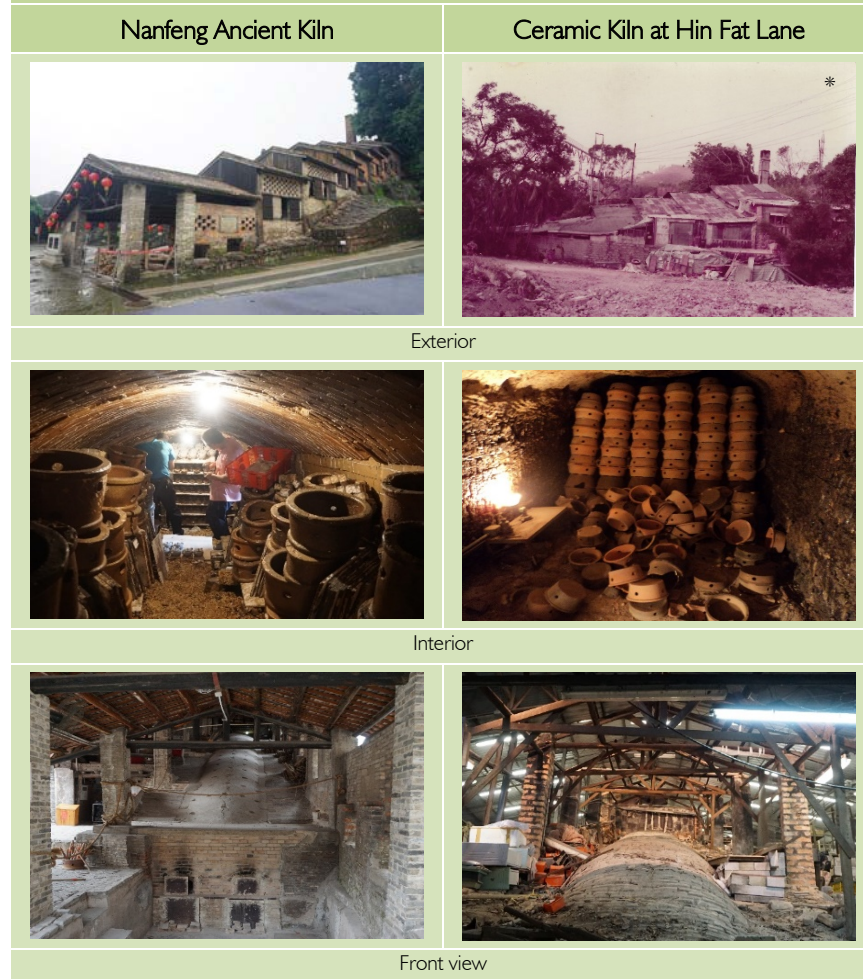
There was a breakthrough innovation in the construction of the Shiwan dragon kiln during the Ming Dynasty. The stroke holes were relocated to the top of the kiln, with five holes in each row. With this innovation, more fire wood could be placed in the stroke holes, thereby distributing heat to the entire kiln to solve the problem of uneven temperatures. This resulted in an increase in the ceramic yield. The ceramics were thoroughly arranged to make sure that the air draft within the fire chamber was well distributed and to facilitate the addition of firewood during the firing process. In the Nanfeng Ancient Kiln, there are 29 rows of stroke holes, meant for the placement of firewood in the kiln. Each row has five stroke holes, and the first and the last row have three stroke holes 火眼 alone (called 'Sanxingku' 三星窟 in Shiwan tradition). Each stroke hole has a perimeter sill 火眼圈 and a cover with a stripe handle that is placed on top of the hole. The distance between two holes ranges from 70 to 80 cm. The five holes have specific traditional names which were coined and used by Shiwan potters: the two holes at the left and right sides are called 'Pili' 陂離, the two holes near the centre on the left and right sides are called 'Shouqiao' 手橋; and the central hole is called 'Daji' 大脊.

The workers were able to gauge the temperature by watching the fire through the holes on top of the kiln. The earthen bricks at the base of the kiln were exposed and not laid evenly. There are 15 rows of stroke holes meant to place firewood into the kiln. In front of the first row of stroke hole, there are two larger stroke holes at two sides. Each row had five holes, and the last row had only three holes. Each stroke hole had a cover made of an earthen cake that was placed on top of the hole. The distance between wholes ranged between 40 and 50 centimetres. Leung Pak Chuen uses almost the same Shiwan traditional names to refer to the five stroke holes, which he learned from his father, Leung Sum: 'Pi' 陂 for the two holes on the left and right sides, 'Shouqiao' for the two holes near the centre, and 'Daji' for the central hole. The Ceramic Kiln at Hin Fat Lane fired almost all kinds of ceramic products from different guilds, although Leung Sum specialized in the Guild of Flower Pots. The temperature in the Ceramic Kiln was in the range of 1,200 to 1,300 degrees Celsius. The modified Ceramic Kiln had a higher measure of efficiency for only 15-18 hours firing time for ceramic production. Similar to

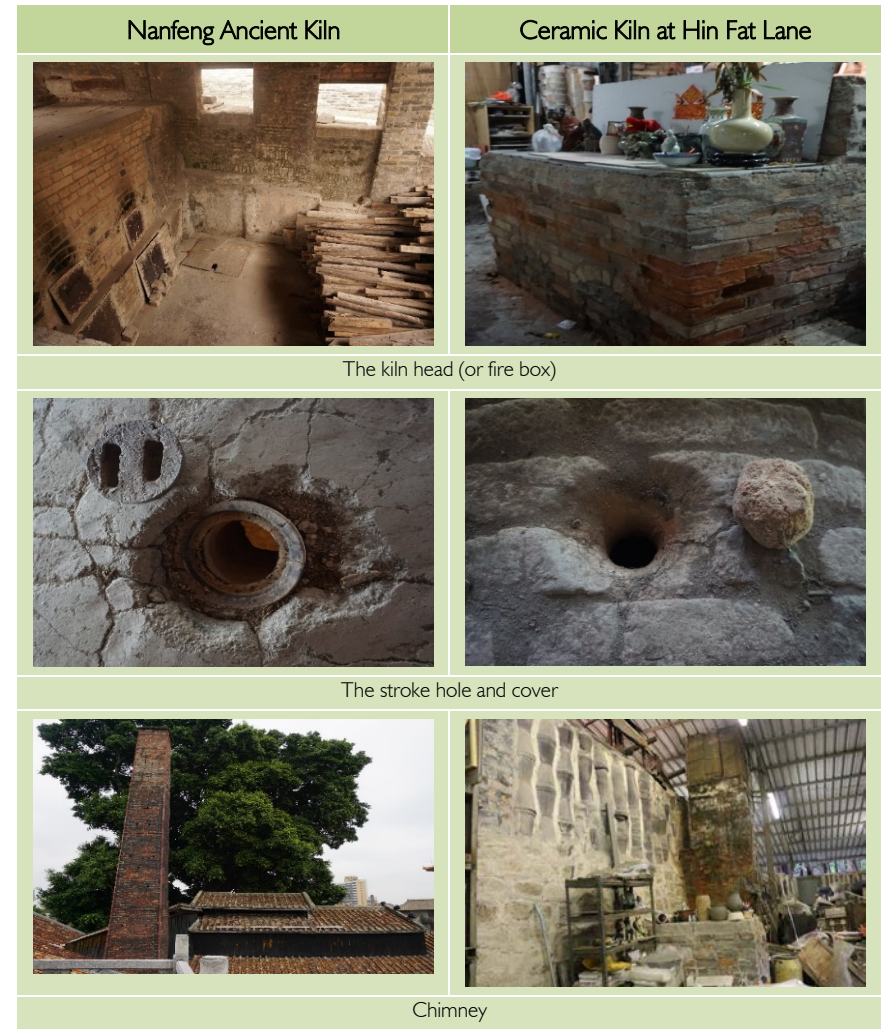
<sup>57</sup> Li, Yanjuan. *Shiwan Dragon Kiln Construction and Firing Techniques* (Guangzhou: Shijietushuchubangongsi, 2016), 33, 97, pp. 123-24.

all traditional dragon kilns, the firing temperature and control of air drafts was simple and relied on the potters' experience.<sup>58</sup>

Comparison between Nanfeng Ancient Kiln and Ceramic Kiln at Hin Fat Lane.<sup>59</sup>



<sup>58</sup> Wong, Wai-yee, Sharon. 'The Future Cities: Castle Peak Dragon Kiln and its Relationship with Shiwan Ceramic Craftsmanship', *MingPao* 15, April, 2018, p. 8.



<sup>59</sup> Photographs by Wong Wai-yee Sharon; \* photo credit: Mr. Leung Pak Chuen.



## Firing and stacking methods

The Nanfeng Ancient Kiln and the Ceramic Kiln at Hin Fat Lane were very similar in the firing and stacking methods they followed. The kiln beds were covered by sand and fire clay bricks were placed on top of them. The potters then used basin-shaped saggars (also called 'Pikan' 皮𩚑 by Shiwan potters) to contain the pots to prevent the wood ash falling from above. The mouth-to-mouth stacking method was used: where one sagger was placed upside down touching the rim of another sagger, and the gap was sealed with wads of fire clay. The saggars were carefully positioned near the stroke holes by the potters. The potters filled up the firing chamber with the pots, until it reached the state of full kiln 滿灶. The Shiwan potters used tiles hards to fill up the gaps between the saggars (called 'Zhuawa' 抓瓦 by the Shiwan people, which means grabbing the tiles) so as to distribute the air flow evenly in the kiln. After loading all the pots in the kiln, the potters use earthen bricks to close the kiln doors.<sup>60</sup>

The Ceramic Kiln at Hin Fat Lane was built following the model of the Shiwan dragon kiln judging from the locations of the stroke holes on top of the kiln with five holes in each row. The Ceramic Kiln is smaller in size when comparing with other available Shiwan kiln records in Guangdong. The number of stroke holes is considerably lesser in terms of the number of rows and smaller in terms of size. In summary, it can be said that the Ceramic Kiln followed the Shiwan dragon kiln model with some adaptations and modification in terms of the firing and stacking methods.

## Pottery forming methods

Molding, which used plaster to make bats. We found many pottery plaster molds in the Ceramic Kiln that were rather economical and were the best equipment to use because of their hardness and porosity. We found that most of the molds were two-piece molds. The clay was pressed into each half. The halves were tied together and the clay joined smoothly. It was an innovative forming method used in Shiwan so as to standardize and increase the ceramic production rate.

Jiggering, which is a mechanical method of forming a pot, especially flatware (such as a plate or a lid) on a revolving mold which shapes the insides while a template makes the contours outside. Jiggering involved starting the wheel, turning it slowly, and lowering the jigger arm, while allowing the template profile to carve the plaster.<sup>61</sup> In the Ceramic Kiln, there are at least four jiggering machines today, one of which was used to mass produce the lids of congee boilers because they were easily broken and needed to be replaced more frequently than the pot.<sup>62</sup> The plaster molding and jiggering forming methods for ceramics mass production was a major innovative method that was introduced in the Shiwan ceramic factories since the 1950s.<sup>63</sup> The Ceramic Kiln also followed this path. Once the pots were made and air dried, they were covered by glaze and then loaded onto the Ceramic Kiln.

## Types of Ceramic Products

The Ceramic Kiln mainly produced folk ceramics for daily use with large varieties of product types. However, in Guangdong, Shiwan's ceramic industry was divided into different guilds based on the type of production work done and the geographical boundaries within which the guilds were enclosed, starting from the reign of Emperor Jiajing of the Ming Dynasty (A.D.1521-1567). The purpose was to protect exclusive rights, and guilds were not allowed to imitate one another's products. There were 24 guilds during the Ming Dynasty, and the craftsmen in each guild produced different ceramic products. This was the standardized operating model controlled by local clan groups.<sup>64</sup>

However, this guild-based regulation was no longer applicable when the Shiwan ceramic techniques were introduced to Hong Kong. The major ceramic products were village-type pottery and flower pots. When interviewed by the local newspapers and media in 1985, Leung Sum mentioned that their factory used to produce more than 100 different types of ceramic.<sup>65</sup> The Shiwan ceramic items produced at the Ceramic Kiln included:

<sup>60</sup> Hong Kong Urban Council, *Shek-wan Pottery*, Hong Kong: the Council, 1977, pp. 228-34.

<sup>61</sup> Hong Kong Urban Council, *Shek-wan Pottery*, Hong Kong: the Council, 1977, pp. 170-90. See also Nigrosh, Leon I. *Claywork: Form and Ideain Ceramic Design*, Second Edition (Worcester, Massachusetts: Davis Publications, 1986), pp. 207-16.

<sup>62</sup> Szeto, Naomi Yin-yin. *Of Hearts and Hands: Hong Kong's Traditional Trades and Crafts*, Hong Kong, the Council, 1996, p.221.

<sup>63</sup> Li, Liming. 'The Making of Artists: The Construction of Identity and Status among Ceramic Craftsmen in Shiwan, Guangdong since Late Qing,' *Journal of History and Anthropology* 7 (1) (2009): p.103.

<sup>64</sup> Another record was 22 guilds during the Ming Dynasty, and 24 guilds during the Republic of China, see Foshan Ceramics Industry & Trade Group Company (ed.) *Bulletin of Foshan Ceramic Industries*. (Guangzhou: Guangdong kejichubanshe, 1991), pp. 42-45; see also Zhang, Weichi, *Guangdong Shiwan Pottery* (Guangzhou: Guangdong renminchubanshe, 1957), p.12.

<sup>65</sup> 'Ceramic Kiln Enlisted as Historical Cultural Relics and Continuing its Production as Living Monument', in *Oriental Daily News* 24 May, 1983, p.10.



1. Elephant pouffes 象墩, tile ridges, roof tiles, and water pipes (Guild of Flower Pots);
2. Wujiapi wine bottles 五加皮酒樽/瓶 and soy sauce bottles (Guild of Black Glazing);
3. Green glazed cricket-fighting basins 蟋蟀盆 (Guild of White Glazing);
4. Qisiyi 氣死蟻, literally 'making the ants frustrated', which are ceramic containers that were used to pickle food and keep the ants out (Guild of Large Basin);
5. Big wine Cheng-jars (Guild of Sagged Ware);
6. Bian rice cookers with casserole-like handles (Guild of Bian Rice Cooker);
7. candlesticks, money bank, lamp saucers, and stands (Guild of Red Glazing);
8. Jinta 金塔, literally 'gold pagoda', which are ceramic urns for storing the second-burial skeleton remains of one's ancestors (Guild of Live Gold);
9. Incense burner and lamps (Guild of Lamp);
10. Congee boilers (Guild of Horizontal-Ear Rice Cooker); and
11. Wash basins, chopstick holders, and urinals (Guild of Wash Basin).<sup>66</sup>

Among the various daily-use Shiwan ceramic products made in Hong Kong, there are some signature items as follows:

1. Wujiapi wine bottles with 'Federal Law Forbids Sale or Re-use of this Bottle' on the shoulder and the 'Hong Kong Wing Lee Wai' 香港永利威 trademark at the base produced for Wing Lee Wai Wines Ltd., Hong Kong. Wing Lee Wai was located in Sheung Wan since the 1930s, which sold this wine locally and overseas. The wine bottles were used to contain the liquor distilled from fermented sorghum.<sup>67</sup>
2. The green glazed made-to-order second-burial urns by the stone factories located near Wo Hop Shek Cemetery, Fanling.
3. Green glazed soy sauce basins (originally used in Shiwan for cricket-fighting) produced for use in the local restaurants.
4. Urinals 尿壺 for local hospitals used for patients or at home in the early days.

<sup>66</sup> Zhang, *Guangdong Shiwan Pottery*, 21-22; See also Ma, So Mui. *The Theatre on the Roof Ridge: Hong Kong Shiwan Roof Ridge Tiles*, Hong Kong, Ma So Mui, 2016, pp.16-17.

<sup>67</sup> Oral history interview with Leung Pak Chuen 梁柏泉 on 10 July 2019. Interviewers: Wong Wai-yee Sharon, Fan Tsz Kiu Kiko.

## Appendix II – Local artists associated with the Ceramic Kiln

### Chan Chung-kong (陳松江)

Chan Chung-kong was born in Hong Kong in 1936. He was graduated from National Normal University Taiwan majoring in Fine Art in 1960 and started to work as a ceramic artist thereafter. He had held art exhibitions, especially pottery exhibitions in Taiwan and Hong Kong since 1961. He also devoted to the study of ceramic art and opened a studio to teach the students of ceramic art.<sup>68</sup>

Chan has lived in Tuen Mun and produced ceramic art in the Ceramic Kiln for around 6 to 7 years. Chan was a teacher at that time. After he finished work from the school, he would go to the kiln and produce his art pieces. He exchanged his ideas about ceramic art with the experienced ceramic craftsman from Shiwan, such as Liu Chuan and Lai Chiu at the kiln. He and Chan Ping-tim set up the Hong Kong Ceramic Arts Studio and helped their students to buy the raw materials need for making pottery from the Ceramic Kiln.<sup>69</sup>

### Chan Ping-tim (陳炳添)

Chan Ping-tim was born in Hong Kong in 1937. He was educated in Hong Kong and became an art teacher in the secondary school in Hong Kong. At the same time, he had continuously held art exhibitions. He was specialized in painting and woodcarving.<sup>70</sup>

From 1963 to 1965, he received the British Council Scholarship and studied sculpture and ceramics at Ravensbourne College of Arts and Design in United Kingdom. After he finished his study in the United Kingdom, he came back to Hong Kong and worked as an art teacher again.<sup>71</sup> At that time, he also took part in different education projects, especially the projects related to ceramic which was his greatest interest. One of his projects was to develop the Hong Kong Ceramic Arts Studio, which allowed artist and other people to get the clay for making the ceramic products. He cooperated with Leung Sum and Chan Chung-kong for setting up the Hong Kong Ceramic Arts Studio

and helped their students to buy the raw materials for making pottery from the Ceramic Kiln.<sup>72</sup>

---

<sup>68</sup> Hong Kong Arts Centre, *Booklet of Artists Come Home*, Hong Kong: Hong Kong Arts Centre, 1976.

<sup>69</sup> Oral history interview with Leung Pak Chuen 梁柏泉 on 10 July 2019. Interviewers: Wong Wai-yee Sharon, Fan Tsz Kiu Kiko.

<sup>70</sup> Ibid.

<sup>71</sup> Ibid.

<sup>72</sup> Oral history interview with Chan Ping-tim 陳炳添 (Chanptarchive, 2018). Retrieved on 6 August, 2019, Web Site: [https://www.youtube.com/watch?v=i7Z2rqMXKYU&fbclid=IwAR28Hlg5z5AjPW0t3xVh8XYnAaNLkt8L9nv2myRRqyeRq7KGlp8K\\_oYCjgY](https://www.youtube.com/watch?v=i7Z2rqMXKYU&fbclid=IwAR28Hlg5z5AjPW0t3xVh8XYnAaNLkt8L9nv2myRRqyeRq7KGlp8K_oYCjgY), 40:20-54:28.