Historic Building Appraisal

Ex-Sham Shui Po Service Reservoir
(commonly known as Mission Hill Service Reservoir / Woh Chai Shan Service Reservoir)
Sham Shui Po, Kowloon

Historical Interest

The ex-Sham Shui Po Service Reservoir (前深水埗配水庫), formerly known as "Kowloon Tong Service Reservoir"（九龍塘配水庫）, was built in 1904. It was also commonly known as the Mission Hill Service Reservoir (主教山配水庫) or Woh Chai Shan Service Reservoir (窩仔山配水庫). It formed part of Kowloon's water supply system until it was decommissioned in 1970. The system was referred to as the "Kowloon Waterworks Gravitation Scheme" (九龍重力自流供水系統). The completion of the system's storage reservoir (Kowloon Reservoir) on 1 December 1910 marked the completion of the first scheme of the kind in Kowloon.[1]

The name of the hill

The service reservoir was situated on the summit of a hill locally known as "Woh Chai Shan" (窩仔山) (with Woh Chai Street (窩仔街) nearby) or "Mission Hill" (主教山). But these names were not indicated on government survey sheets. However, the Chinese characters of Woh Chai Shan (窩仔山) can be identified from a year book for the year 1959 and some Chinese newspapers dating from the 1950s to 1970s, whereas that of Chu Kau Shan (a transliteration of Mission Hill (主教山) in Cantonese, which literally means "Bishop Hill"),[2] could still be identified in the newspapers of the 1990s. Some government records of the 1970s show another nickname of the hill in Chinese – Kau Hui Shan (a transliteration of "教會山" in Cantonese, which literally means "Church Hill"). Regarding the English name "Mission Hill", it can be identified in the newspapers dating from the 1950s to 1980s, and in the government records of the 1950s and 1970s, for instance.

It is believed that the nickname "Mission Hill" was related to the Basel Evangelical Missionary Society (巴色差會) and later the Tsung Tsin Mission

[1] The Main Dam (主壩), Main Dam Valve House (主壩水掣房), Spillage Dam (溢洪壩), Spillage Dam Recorder House (溢洪壩記錄儀器房), and Recorder House (記錄儀器房) of Kowloon Reservoir are Declared Monuments.

[2] There are still some religious premises near the hill. They are Tsung Tsin Mission of Hong Kong Shamshuipo Church (基督教香港崇真會深水埗堂) at No. 58 Tai Po Road (大埔道), Grace Hong Kong Evangelical Church (香港宣教會恩磐堂) at No. 11 Tong Yam Street (棠蔭街) and St. Francis of Assisi's Church (聖方濟各堂) at No. 58 Shek Kip Mei Street (石硤尾街). But none of them have bishops.

(崇真會). On 1 July 1898, the government leased a plot of land registered as New Kowloon Inland Lot No. 1 (N.K.I.L. 1) to the Basel Evangelical Missionary Society, whose missionaries, namely Rev. Theodore Hamberg (韓山明牧師) and Rev. Rudolf Lechler (黎力基牧師), first came to Hong Kong from Switzerland in 1847. The N.K.I.L. 1 was situated on the hill occupied by the Kowloon Tong Service Reservoir (i.e. the ex-Sham Shui Po Service Reservoir), which was also where the Basel's first church base in Kowloon was established. According to land records, in 1954, N.K.I.L. 1 was sold to the Tsung Tsin Mission.[3] In 1956, the ownership became registered under The President in Hong Kong of the Tsung Tsin Mission of Hong Kong Incorporated.

The water supply system in Kowloon before 1906

Up until 24 December 1906, the supply of water for Kowloon had relied on three wells. Osbert Chadwick (1844 – 1913), a consulting engineer to the Crown Agents for the Colonies,[4] was sent to Hong Kong to investigate its sanitary condition and in 1882, he compiled a "Mr. Chadwick's Reports on the Sanitary Condition of Hong Kong", with his recommendations on increasing water supplies as a means of improving the sanitary condition of the territory. Chadwick returned to Hong Kong in 1890 to follow up his 1882 recommendations. His proposal related to the water supply for British Kowloon was implemented and completed in 1895. Three wells were sunk at the sources of water at three valleys situated north of the village of Yaumati.[5] Besides, the wells were connected by iron pipes to a clear water tank at Yaumati (today's Yau Ma Tei) having a top water level of 12.5 feet above Ordnance Datum (abbreviated as T.W.L. 12.5 ft. A.O.D.) and a capacity of 148,000

[3] Cheung Wai-fung (張維豐), Chan Tat-sam (陳達三), Tsang Shui-kau (曾瑞有) and Tsok En-kau (卓恩高), acted as the purchasers of N.K.I.L. 1 on behalf of the Tsung Tsin Mission and were referred to as "Gentlemen" in the land record concerned.

[4] Osbert Chadwick was educated at the Royal Military Academy at Woolwich, where he was trained as a civil engineer, and was then attached to the Royal Engineers from 1864 to 1873. After resigning his commission, he served as a consulting engineer to the Crown Agents for the Colonies, through which he was sent to Hong Kong in 1881 as special commissioner to report on the sanitation and public health problems of the colony. Chadwick spent several months in Hong Kong. His "Mr. Chadwick's Reports on the Sanitary Condition of Hong Kong" was published by the Colonial Office in 1882. It recommended measures to improve hygiene, including a system of water supply, a system of sewage disposal and proper drainage, the provision of public toilets, public bathhouses and clean markets, and the establishment of a Sanitary Board (established in 1883). Chadwick returned to Hong Kong in 1890 to follow up his 1882 recommendations. For his construction of the waterworks in Malta, he was made a Companion of the Order of St. Michael and St. George (CMG) in 1886. With the outbreaks of bubonic plague since 1894, the government was determined to expediate improvements to the sanitary conditions in Hong Kong. Chadwick was, therefore, sent to Hong Kong for a third time in 1902, advising on how to improve the sanitary conditions in Hong Kong. He focused on street sewers, drains and nullahs. Chadwick had contributed to amendments of Wateworks Ordinance the enactment of the Public Health and Buildings Ordinance 1903.

[5] Well No. 1 was situated near today's junction of Pui Ching Road (培正道) and Man Fuk Road (文福道), Well No. 2 near the junction of Waterloo Road (窩打老道) and Argyle Street (亞皆老街), and Well No. 3 near the junction of Ho Man Tin Hill Road (何文田山道) and Wylie Road (衛理道).

gallons. On 24 December 1895, the pumping machinery at the Yaumati Pumping Station at No. 344 Shanghai Street started operation.[6] The water was directly pumped from the clear water tank to users, whereas the surplus would be pumped to the two service reservoirs regulating water supply, which were both completed in 1894. One was at King's Park, Yau Ma Tei (T.W.L. 215 ft. A.O.D.) of 162,600 gallons capacity, while the other was at Hung Hom (T.W.L. 160 ft. A.O.D., approximately situated at today's Ho Man Tin) of 92,850 gallons capacity.

The Kowloon Waterworks Gravitation Scheme

In 1898, the consumption of water was found to be rapidly overtaking the available sources of supply.[7] Before the lease of the New Territories on 1 July 1898, the Kowloon Peninsula under British jurisdiction contained no possible site for a reservoir. From 1899 onwards, however, considerable attention was given to the problem of supplying water to Kowloon. In 1900, Chadwick submitted to the government another proposal for increasing water supply. He highlighted the hilly nature of the new territory, and suggested that water supplies could be augmented by exploiting the new water sources in the valleys there by gravitation. With a gravitation scheme, water could be delivered under high pressure over a significant distance from a storage reservoir high in the hills, with the significant advantage that no expensive pumping was required, and the system was therefore also expected to be much more cost-effective than the pumped system in terms of operation. The idea of the gravitation scheme emerged in Britain in the 1820s and 1830s, and swept the country from the 1840s onwards. In the second half of the nineteenth century, it was introduced to cities such as Bombay (now Mumbai), Hong Kong and Singapore.[8] In Hong Kong, a gravitation scheme was first adopted at the Pok Fu Lam Reservoir, which was built between 1863 and 1877.[9]

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6 The surviving two-storey red brick building of the engineer's office is a Grade 1 historic building, which is now known as the former Pumping Station of Water Supplies Department.

7 According to government records, for instance, in 1891, there were 19,997 Chinese land popoluation in British Kowloon. The figure increased to 26,442 in 1897, and 42,976 in 1901. In 1906, there were 52,331 Chinese land population in "Old Kowloon" and 17,836 in "New Kowloon".

8 The Toxteth Reservoir in the UK (built in the 1850s), Paddington Reservoir in Sydney (built from 1866 – 1878), and the Fort Canning Service Reservoir in Singapore (built in 1929) are some of the overseas examples of service reservoirs using the gravitation system of water supply.

9 According to a government record of 1937:

(i) the resources of the Pok Fu Lam Valley for the Pok Fu Lam Reservoir (built between 1863 and 1877) were wholly gravitational;

(ii) the resources of Wong Nai Chung Catchment Areas for the Wong Nai Chung Reservoir (built in 1899) were wholly gravitational;

(iii) for the Tai Tam Group of Reservoirs (built between 1883 and 1917), about 20% of the resources of the Tai Tam Valley were primarily gravitational; and

(iv) regarding the Aberdeen Reservoir (1931 – 1932), about 50% of the resources of the Aberdeen Valley were pumped to make the sole of them gravitational.

The Kowloon Waterworks Gravitation Scheme was carried out under the supervision of Lawrence Gibbs (*c.* 1867 - 1942). He was Assistant Engineer in the Public Works Department (hereafter "PWD") when he was instructed to prepare a gravitation scheme for Kowloon and the urban districts (Kowloon City and Sham Shui Po) in New Kowloon.[10] The cost-effectiveness of the operation of the gravitation scheme was set out below:

Existing Pumping Scheme in 1900[11]	
Supply	232,000 gallons a day
Original cost	$128,000
Capitalized cost of maintenance	$120,000
Cost of supply per million gallons, per day	$1,070,000
Proposed Gravitation Scheme in 1900	
Supply	590,000 gallons a day
Cost of existing works to be utilized	$90,000
Estimated cost of new works	$380,000
Estimated cost of maintenance (capitalized)	$40,000
Cost of supply per million gallons, per day	$860,000

***Hongkong Legislative Council Sessional Papers*, 1901**

Later, Gibbs left the government civil service, and joined a local firm of architects and civil engineers to form Messrs. Denison, Ram and Gibbs.[12] The firm was entrusted to design and supervise the whole of the works of the proposed gravitation scheme.

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[10] In his "Report on Water Supply, Kowloon" dated 8 January 1900, Gibbs pointed out that according to the census of January 1897 of the population in British Kowloon, there were 716 civil non-Chinese land population, 26,442 civil Chinese land population, 7,624 floating population, and a military and naval population of around 1,500. In Kowloon City and Sham Shui Po, with estimated population of 2,000 and 1,500 respectively, should be included in the scheme.

With the extension of their jurisdiction to the entire Kowloon Peninsula in 1898, the British named the areas to the north of Boundary Street (界限街), including Kowloon City and Sham Shui Po, as "New Kowloon". The boundary of New Kowloon was marked on a map dated 1937. Places like Cheung Sha Wan (長沙灣), Sham Shui Po (深水埗), Kowloon Tong (九龍塘), Tai Hom (大磡), Kowloon City (九龍城), Ngau Chi Wan (牛池灣), Ngau Tau Kok (牛頭角), Sai Tso Wan (茜草灣) and Cha Kwo Ling (茶果嶺) fell within the boundary.

[11] Lawrence Gibbs, "Report on Water Supply, Kowloon" dated 8 January 1900, *Hongkong Legislative Council Sessional Papers*, 1900.

[12] Denison and Ram was founded by Albert Denison and Edward Albert Ram in 1897. It was renamed Denison, Ram and Gibbs after it was joined by Gibbs. The firm was entrusted to design and supervise the whole of the works of the proposed gravitation scheme on behalf of the government because of the inadequacy of the staff of PWD and the fact that Gibbs, when still working with PWD, had investigated and reported upon the feasibility of the scheme. It was probably for the first time the governmet commissioned a local firm to provide consultancy for the construction of a reservoir-based water supply system for Kowloon. Other works done by the firm included the May Hall and Eliot Hall of The University of Hong Kong, The Helena May (all Declared Monuments), the Maltida and War Memorial Hospital (Grade 2) and Clubhouse of Fanling Golf Course (Grade 2). Besides, Tai Po Lookout (Grade 1) was designed by Gibbs in the early 1900s and was used as his residence afterwards.

The scheme involved the construction of a storage reservoir, filter beds, a service reservoir and mains in New Kowloon. The storage reservoir (Kowloon Reservoir) would be connected by a cast iron main to filter beds on the ridge above Cheung Sha Wan near Tai Po Road. From the filter beds water would be conveyed by a main laid partly below and partly along Tai Po Road and up to a service reservoir to be built on a hill to the north of the village of Kowloon Tong (or Kau Lung Tong, 九龍塘村). The service reservoir would be connected to the distribution system at Yau Ma Tei, which would be extended to Kowloon City on the eastern side and to Tai Kok Tsui and Sham Shui Po on the western side of Kowloon.[13] Construction works starting with the storage reservoir and the main connected to it commenced in 1902.

In December 1902, tenders were invited for the construction of the Kowloon Tong Service Reservoir. According to the "Report of the Director of Public Works for the Year 1903", a contract for the construction of the service reservoir was entered into with Tung Shing (同盛建築公司) in February of that year.[14] The report continues by stating that:

> *"The reservoir is sunk almost entirely below ground level and is constructed principally of cement concrete with granite pillars and brick arches to support the concrete vaulting which forms the roof. It is circular in form and has a capacity of 2 million gallons. About half the brick arches already mentioned were completed by the end of the year."*[15]

The construction of this service reservoir was completed on 10 August 1904 at a cost of $67,639.31.[16] According to the government records available from 1904 to the early 1950s, this service reservoir was referred to as "Kowloon Tong Service Reservoir" or "Kowloon Tong Balance Tank". From around the mid-1950s onwards, it was known as "Sham Shui Po Balance Tank". The water left the Kowloon Reservoir that had a top water level of 448 feet above Ordnance Datum (T.W.L. 448 ft. A.O.D.). Once it had been filtered and had

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[13] Besides, at Kowloon City, another service reservoir would be constructed to maintain the supply in case of a breakdown on the 2 miles of main between there and Hung Hom, where a service reservoir already existed.

[14] The construction company of Tung Shing was founded by Ng Tsz-chor (吳子楚), alias Ng Yi-po (吳義保, 1869 – Japanese Occupation) and his younger brother Ng Tsz mei (吳子美, 1881 – 1939). Ng Tsz-mei was also a notable philanthropist. For instance, he donated to establish an outpatient clinic at Pai Tau Village (排頭村), Sha Tin. He also provided coffins free of charge for the deceased of poor families. Ng Yuen (吳園, Grade 3) at Tai Chung Kiu Road, Sha Tin, was the private residence of Ng Tsz-mei.

[15] "Report of the Director of Public Works for the Year 1903", *Hongkong Legislative Council Sessional Papers*, 1904.

[16] "Report of the Director of Public Works for the Year 1904, *Hongkong Legislative Council Sessional Papers*, 1905.

the water pressure broken at the Tai Po Road Filter Beds (T.W.L. 290 ft. A.O.D.) (大埔道沙濾池), it would have been directly distributed to users. The surplus would arrive at the Kowloon Tong Service Reservoir (T.W.L. 255 ft. A.O.D.) and be stored there until the demand for water returned to a level that required the use of the surplus. Therefore, the service reservoir was indeed designed as a balance tank (調節缸). All the processes above were done by gravitation.

In 1906, further progress of the works of the gravitation scheme enabled water to be impounded in the storage reservoir and, by the adoption of some temporary expedients, though still incomplete, the new works began to operate on 24 December of the same year. The gravitation scheme had also contributed to the protection of lives and properties from fires. The "Report of the Director of Public Works for the Year 1906" reads "*Fire Hydrants to the number of 22 were fixed on the new mains.*"[17] This is for the first time fire hydrants were installed in Kowloon. In 1907, fire hydrants amounting 109 were fixed on all the old water mains on the peninsula,[18] whereas in 1910, 158 fire hydrants were fixed upon the completion of the extensions and enlargements of the distribution system in the same year.[19]

According to a government record, the service reservoir fell into disuse in 1938 due to bad leakage. There then came the Japanese Occupation (1941 – 1945). According to Japanese records, the Kowloon Tong Service Reservoir (九龍塘配水池) was built of stone and brickwork (石及煉瓦造) and served as a balance tank (調整池). Among the waterworks installations that were rehabilitated after the war was the Kowloon Tong Service Reservoir, which was repaired and re-commissioned in 1951. It was then decommissioned in 1970, following its replacement by Shek Kip Mei Fresh Water Service Reservoir. The ex-Sham Shui Po Service Reservoir had a strong historical linkage with the Kowloon Reservoir, and they together was a group of waterworks installations which had borne withness to the historical developments of Kowloon and water supplies on the peninsula.

Architectural Merit

The ex-Sham Shui Po Service Reservoir was circular in plan, having a diameter of about 150 feet (about 45.7 metres) and a height of about 22 feet and

[17] "Report of the Director of Public Works for the Year 1906", *Hongkong Legislative Council Sessional Papers*, 1907.

[18] "Report of the Director of Public Works for the Year 1907", *Hongkong Legislative Council Sessional Papers*, 1908.

[19] "Report of the Director of Public Works for the Year 1910", *Hong Kong Government Administrative Reports*, 1910.

6 inches (about 6.8 metres).[20] It occupied an area of about 1,600 sq.m. According to the information from the Water Supplies Department, the concrete cove ceiling is supported on a layer of pentagonal profile granite spring blocks, rows of brick arches and totally 108 piers constructed of 24 x 18 x 12 inches stone blocks.[21] Nevertheless, the architecture of the roof, the arches and piers display an imitation of Roman civil engineering works.[22] The top water level was 255 feet A.O.D. A major alteration was carried out in 1951 – 1952. According to the same record plan of 1951, a new 150-mm thick concrete perimeter wall (also known as a circumferential wall) was constructed, and the space between the original wall and the new perimeter wall was filled with compacted earth filling with 7% cement content. Following this modification, the top water level was lowered from 255 feet A.O.D. to 249 feet A.O.D., and the storage height from 20 feet and 6 inches (about 6 metres) to 15 feet (about 4.5 metres), whereas the capacity was reduced from 2.183 million (about 9,900 cubic metres) to about 1.074 million gallons (or about 4,800 cubic metres). On the other hand, according to the results of open-up investigations, the new wall was constructed with reinforced concrete, while the flooring was made up of a layer of aggregates (疏水層) at the bottom for the purpose of draining off of excess water, a layer of cement concrete in the middle and a layer of bitumen on top.

Apart from the brick arches, stone block piers, and the concrete cove ceiling and wall, a range of other features relating to the operation of the service reservoir were visible during the site visit in January 2021. These included the vent pipes and ventilators in the roof, the inlet and outlet pipes, an overflow pipe, a half-round channel connected to a washout pipe for draining off all the water before the commencement of repair works, a stilling well for the operation of a ball float valve, a masonry portal (now blocked up) dressed with voussoirs, and a culvert.

Group Value

The ex-Sham Shui Po Service Reservoir is within walking distance of other historic buildings, including Mei Ho House (美荷樓), the former North Kowloon Magistracy (前北九龍裁判法院), Building of The Garden Company, Limited (嘉頓有限公司建築), Precious Blood Convent (寶血會女修院) (all Grade 2), Precious Blood Hospital (寶血醫院, Grade 3), and

[20] "The water ran by gravitation from the Kowloon Reservoir, Tai Po Road Filter Beds to Kowloon Tong Service Reservoir, which had top water levels of 448 feet, 290 feet and 255 feet above Ordnance Datum respectively.

[21] The record drawing of 1951 was only marked with "EXIST. 2'-0" x 1'-6" STONE BLOCK COL". The height of 12 inches was provided by the Water Supplies Department.

[22] Semi-circular arch is a distinguished character of Roman architecture. However, in the case of the ex-Sham Shui Po Service Reservoir, the minor segemental ceiling and the arches are built of concrete and brickwork.

Saint Francis of Assisi's Catholic Church and English Primary School (聖方濟各堂及英文小學). They together formed a vivid miniature of the social life of the local community.

Social Value & Local Interest

As an underground waterworks installation that was decommissioned in 1970, the service reservoir itself was of limited social value and interest to the local community. The service reservoir, as an integral part of the first gravitational water system in Kowloon, played an important role in the provision of safe fresh water for drinking, improvement of hygiene and installation of fire hydrants, and was, therefore, of great social value to the population of the Kowloon Peninsula. On the other hand, the nicknames of the hill where it is situated – Mission Hill (Chu Kau Shan) and Woh Chai Shan – clearly acquired certain social value and attracted local interest. The hill was also once a squatter area, within which the victims of a great fire in Sham Shui Po in about 1956 were temporarily accommodated. It was not until 1972 that the squatters, who then numbered around 1,900, were given public housing and evacuated their huts on the hill.

The nickname of the hill where it is situated – Mission Hill – is also of historic interest. It is related to the Basel Mission's first base in Kowloon at New Kowloon Inland Lot No. 1, which dates back to 1898, and also serves as a historical reminder of the development of New Kowloon.

Authenticy

The construction of a new perimeter wall in 1951 – 1952 was the only major alteration, but it has not diminished the authenticity of the 1904 structure. Four stone piers and brick arches were removed by the works carried out in December 2020, but the fabrics had been salvaged for restoration.

The architecture of the roof, the arches and piers display an imitation of Roman civil engineering works with a very high level of authenticity. The stone piers and brick arches combined with a concrete cove ceiling enabled the construction of this 1904 service reservoir, which in area was ten times (about 1,600 sq.m.) larger than the 1894 ex-Yaumati Service Reservoir (about 163 sq.m.). The reinforced concrete perimeter wall, the concrete cove ceiling, brickwork and masonry work display a combination of traditional and modern building techniques and materials. Besides, important functional elements, such as vent pipes, ventilators, inlet and outlet pipes, a stilling well, a half-round channel, a washout pipe, a masonry portal dressed with voussoirs and a culvert are still visible on site.

Rarity

The ex-Sham Shui Po Service Reservoir is a very rare example of its type in terms of construction and has considerable built heritage value. Historically, as a structure built in 1904 in Sham Shui Po in a location just to the north of Boundary Street, the service reservoir has borne witness to the significant historical development of New Kowloon. Besides, it is one of the oldest surviving service reservoirs in Hong Kong, and the second oldest service reservoir built in Kowloon (the ex-Yaumati Service Reservoir built in 1894 being the oldest). It formed an integral part as well as the first waterworks of the Kowloon Waterworks Gravitation Scheme, the first reservoir-fed water supply system in Kowloon. In Hong Kong, the gravitation scheme of water supply was first adopted at the Pok Fu Lam Reservoir, which was built between 1863 and 1877. In Kowloon, the gravitation scheme which started operation in 1906 was thus a very significant milestone in the water supply system for the peninsula.

REFERENCES

Document Records at The Land Registry Office, Hong Kong.

Property Particulars of New Kowloon Inland Lot No. 1.

Archives at Public Records Office, Hong Kong

"Gibbs, Lawrence". Card number, CS/I011/00102587, Carl Smith Collection.

HKRS 156-3-191. *House No. 68, Mission Hill, Tai Hang Tung. Letter From [name] Requesting Assistance Due to His Being Cleared Form*, 12 April 1973 – 23 June 1973.

HKRS 156-3-202. *[name] - KR/C/128/1, Mission Hill, Shek Kip Mei. -Correspondence From Mrs. E. Elliott in Respect of*, 29 August 1973 – 31 August 1973.

MM-0556. Map of Kowloon Peninsula, 1920.

Records from the Water Supplies Department

"Hong Kong Water Works: Repairs to Kowloon Tong Balance Tank (Sham Shui Po), Plans & Sections", dated 25 October 1951 (Drawing No. W1434).

Fisher, F.A.. *The Hong Kong Waterworks* [1970].

Hong Kong Waterworks: Data Book, Issue 1965-1966.

A Brief History of the Hong Kong Waterworks.

Maps from the National Archives of United Kingdom

"Sketch Plan of "Kowloon Peninsula shewing Proposed Water Supply". Drawn by the Water and Drainage Department, Hong Kong, 14 May 1890 (Map Ref.: MFQ 1/1228/5).

Plan of "Kowloon Water Supply. Proposed Works", dated 1892(Map Ref.: MR 1/898(3)).

Plan of "Water Supply. Kowloon Peninsula. General Plan", dated 1896 (Map Ref.: CO700/HONG KONG AND CHINA 10).

Records of the Colonial Office and Hong Kong Government

War and Colonial Department and Colonial Office. Plan of "Kowloon Peninsula. Colony of Hong Kong (corrected to 1905)", War and Colonial Department and Colonial Office: Hong Kong, Original Correspondence, *Despatches: 1906 Aug.-Oct*.1906, CO129/335, p.317. 1906 < https://link.gale.com/apps/doc/SCFTNF006571578/CFER?u=hku&sid=CFER&xid=1b18f90f&pg=321>, accessed on 10 February 2021.

War and Colonial Department and Colonial Office. War and Colonial Department and Colonial Office: Hong Kong, Original Correspondence, *Water Supply*, CO129/588/16, pp.1-27. 1941 <https://link.gale.com/apps/doc/KXDKJI750288207/CFER?u=hku&sid=CFER&xid=d269472e&pg=1> , accessed on 10 February 2021.

Chadwick, Osbert. *Report on the Sanitary Condition of Hong Kong* (London: Colonial Office), 1882.

"Kowloon Water Supply" dated 30 June 1892, in Government Notification No. 469 dated 17 November 1892, *The Hongkong Government Gazette*, 1892, from Hong Kong Government

Reports Online.
Gibbs, Lawrence. “Report on Water Supply, Kowloon” dated 8 January 1900, *Hongkong Legislative Council Sessional Papers*, 1901, from Hong Kong Government Reports Online.
“Report of the Director of Public Works for 1894”, *Hongkong Legislative Council Sessional Papers*, 1895, from Hong Kong Government Reports Online.
“Report of the Director of Public Works for 1895”, *Hongkong Legislative Council Sessional Papers*, 1896, from Hong Kong Government Reports Online.
“Report of the Director of Public Works for 1901”, *Hongkong Legislative Council Sessional Papers*, 1902, from Hong Kong Government Reports Online.
“Annual Report of the Director of Public Works for the Year 1900”, in Government Notification No. 276 dated 11 May 1901, *The Hongkong Government Gazette*, 1901, from Hong Kong Government Reports Online.
“Report of the Director of Public Works for 1902”, *Hongkong Legislative Council Sessional Papers*, 1903, from Hong Kong Government Reports Online.
“Report of the Director of Public Works for 1903”, *Hongkong Legislative Council Sessional Paper*, 1904, from Hong Kong Government Reports Online.
“Report of the Director of Public Works for 1904”, *Hongkong Legislative Council Sessional Papers*, 1905, from Hong Kong Government Reports Online.
“Report of the Director of Public Works for the Year 1906”, *Hongkong Legislative Council Sessional Papers*, 1907, from Hong Kong Government Reports Online.
Hong Kong Government Administrative Reports, 1907, from Hong Kong Government Reports Online.
Hong Kong Government Administrative Reports, 1910, from Hong Kong Government Reports Online.
“Report on the Water Supply of Hong Kong”, *Hongkong Legislative Council Sessional Papers*, 1937, from Hong Kong Government Reports Online.
Director of Public Works, *Annual Department Reports*, 1951-2.
Director of Public Works, *Annual Departmental Reports, 1952-1953.*
“Hong Kong Water Supplies, 1960”, *Hong Kong Annual Report*, 1960.
Hong Kong Legislative Council, *Report of the Meetings of the Legislative Council*, 28th Dec, 1901, https://www.legco.gov.hk/1900-01/h011228.pdf. accessed on 2 Feb 2021.

Newspapers

“Kowloon Residents’ Assn.: Correspondence on Congestion at The Star Ferry Piers. Annual Meeting To-day”, *South China Morning Post*, 14 June 1951.
“Kowloon Residents’ Annual Report to be Presented To-morrow”, *South China Morning Post*, 17 March 1954.
“Tai Lam Chung: Dam Construction is Well Under Way”, *South China Morning Post*, 7 August 1954.
“Tried to Get Money by Fraud: Letter to a Student”, *South China Morning Post*, 29 November 1957.

"Two Men Jailed for Having Drugs", *South China Morning Post*, 6 July 1961.
"One Killed, Six Hurt in Road Mishaps", *South China Morning Post*, 13 July 1962.
"Mission Hill Huts", *South China Morning Post*, 26 March 1963.
"Mission Hill Huts: (To the Editor, S.C.M. Post)", *South China Morning Post*, 1 April 1963.
"No Present Threat to Sai Cho Wan", *South China Morning Post*, 24 June 1972.
"Ten Years' Jail for Hill Robber", *South China Morning Post*, 30 November 1982.
「寒風助長火勢，燃燒近二小時，九龍仔窩仔山大火，災民達一千五百多」,《大公報》，1962 年 1 月 23 日。
「窩仔山燒木屋，火場達數萬呎」,《大公報》，1973 年 12 月 30 日。
「男子被催眠，險被劫財物」,《華僑日報》，1991 年 4 月 9 日。

Books, Articles and Other Sources

Empson, Hal. *Mapping Hong Kong: A Historical Atlas* (Hong Kong: Government Information Service, 1992).
Holdsworth, May and Munn, Christopher. *Dictionary of Hong Kong Biography* (Hong Kong: Hong Kong University, 2012).
Lau, Y.W. *A History of the Municipal Councils of Hong Kong 1883 – 1999 from the Sanitary Board to the Urban Council and the Regional Council* (Hong Kong: Leisure and Cultural Services Department, 2001).
Government of Hong Kong Office of the Water Authority. *Third Formal Independent Reservoir Inspection. Final Report on Inspection and the Safety of Kowloon Reservoir*, November 1988.
鄭紫燦,《中華商業交通人名指南錄》，第三冊(香港: 鄭紫燦，[1915])，頁 579。
《香港年鑑》，1959 年（香港：香港華僑日報，1959）。
吳詠棠(編),《寶安縣衙前圍吳氏族譜》([香港]: 1985)。
《香港水道調查報告書》(臺灣: 臺灣總督府外事部,昭和 17 年 10 月(1942 年))。
何佩然，《點滴話當年：香港供水一百五十年》(香港： 商務印書館（香港）有限公司)， 2001 年。
馬冠堯，《香港工程考 II》(香港： 三聯書店（香港）有限公司)， 2014 年。
活現香港，「地水重光：主教山配水庫文物價值報告」<https://walkin.hk/bishop-hill-assessment/>, accessed on 28 February 2021.
Broich, John. "Engineering the Empire: British Water Supply Systems and Colonial Societies, 1850-1900", *Journal of British Studies*, Vol. 46, Issue 2 (UK: The North American Conference on British Studies, 2007), pp. 346-365.
Lam, Tony. "From British Colonization to Japanese Invasion: The 100 Years Architects in Hong Kong 1841-1941", *Journal of the Hong Kong Institute of Architects* <https://www.hkia.net/en/pdf/journal/journal_issue45_02.pdf>, accessed on 18 February 2021.
"Hong Kong Water Supply – Kowloon Reservoir", The Industrial History of Hong Kong Group, <https://industrialhistoryhk.org/hong-kong-water-supply-kowloon-reservoir/ >, accessed on 18 February 2021.
Gibbs, Lawrence. "Kowloon Waterworks. Early History", *The Hong Kong Naturalist*, Vol. 2, No. 1,

February 1931, pp. 65-68.

Lam, Ka Wai Shita. *Otherness in the City : a Meditative Journey between the City and the Urban Void* (e-book) (The Chinese University of Hong Kong, 2018).

Smith, C.A. Middleton. “Water Supply in Hongkong”, *The Far Eastern Review*, Issue No. 10, Vol. XXX, October 1934, pp. 447-459.

水務署，「九龍三口水井的三個謎團」，《點滴》，第一百一十二期，二零二零年六月。

“New Kowloon Inland Lot No. 1” (Photo Ref.: A-30.07,05#09b), dated 1951, Basel Mission Archives <https://www.bmarchives.org/items/show/100200037>, accessed on 10 February 2021.

“The Basel Mission’s rest home in Kaulungthung” (Photo Ref.: A-30.01.012), dating back to 1893 – 1904, Basel Mission Archives <https://www.bmarchives.org/items/show/50043>, accessed on 10 February 2021.

「本會簡介」，基督教香港崇真會 <https://web.ttm.org.hk/about-us/story/>, accessed on 16 February 2021.

「教會歷史」，基督教香港崇真會深水埗堂 <http://www.ttmsspc.hk/aboutus2.php >, accessed on 16 February 2021.

「認識・珍惜 - 香港特色建築」，from “Youtube” <https://youtu.be/gnHN4eHflUc?t=426>, accessed on 2 February 2021.