Historic Building Appraisal
Old Dairy Farm in Pok Fu Lam, Hong Kong
– Silos

Historical Interest

The Old Dairy Farm in Pok Fu Lam was once an extensive complex of farm buildings erected by the Dairy Farm Company. The Dairy Farm was founded in 1886 when Dr Patrick Manson (a Scottish surgeon and a pioneer in the fields of hygiene and tropical medicine) persuaded five influential businessmen in the city, including Paul Chater, to invest in a local dairy farm. While in Hong Kong, Manson also spearheaded the founding of the Hong Kong College of Medicine, which in turn evolved into Faculty of Medicine of The University of Hong Kong. He was also a distinguished parasitologist and the first to state the hypothesis that the mosquito is the host of the malarial parasite and thus an active agent in diffusing the disease. The Dairy Farm Company's declared purposes were threefold: (i) to provide a regular supply of hygienic fresh milk for Hong Kong people; (ii) to reduce the price of cow's milk so as to make it affordable by the city's growing population; and (iii) to realize a profit for the company shareholders.

The Old Dairy Farm occupied a 120-hecture hilly site in Pok Fu Lam, with an initial capital of $30,000 and a herd of 80 dairy cows imported from America (and later from Australia, Scotland and Holland).[1] In spite of the hilly nature of the land, Pok Fu Lam was selected as the site for dairy farming for a number of reasons. First of all, Pok Fu Lam was isolated from the disease-ridden slums in Sheung Wan, but was only four miles away from the central district of Hong Kong Island. It was sloping seaward on a piece of land rising to 500 feet above sea level, making the site receive cool breezes which were especially important for dairy farming during the sub-tropical summer in Hong Kong.

The cows had to be kept as cool as possible if they were to stay healthy and produce the maximum quantity of milk. Heat, together with humidity, described by a farm manager of the Old Dairy Farm as "discomfort index", could adversely affect milk yield and breeding cycle. Furthermore, the location had a reliable water supply and good drainage. The site condition was

[1] Native buffaloes were poor milk providers. Their milk was very rich in fats and thus difficult to be digested. Ayrshires from Scotland and Holsteins (or Holstein-Friesians) from Holland, however, could produce a large yield of milk with a high percentage of butter fat. The milk from Holsteins was most easily digested and Holsteins was also a good butcher's animal.

good for the cows because cows consumed a lot of water every day; water was also required, for cleaning the cowsheds and the related buildings as well as dairy utensils.

In 1899, to prevent the spread of disease from one part of the herd to another, Granville Sharp, who had served on the Board of Directors of the Dairy Farm Company since 1886, initiated the idea of dividing the herd, instead of having it all in one group. By 1899, four octagonal cowsheds were in operation, and it was proposed to erect more. Following Sharp's initiative, the construction of segregated cowsheds in Sassoon Road commenced. In addition, each cowshed had its own separate team of workers, in order to reduce the risk of carrying diseases from one shed to another, and to facilitate isolation during any outbreak of disease. The farm was mainly composed of cowsheds, paddocks, silos, manure pits, living quarters for cowboys, etc. Silos were used to store surplus fodder during the summer and supplied as silage in the winter to the herd; whereas manure pits were for collecting cow manure for use as fertilizer. Manure was kept in the pits until it was ready to spread on the surrounding grassland as fertilizer. By 1910, there were 35 cowsheds on the Pok Fu Lam farm; and by 1955, the number had risen to 47. According to a study of the farm in 1957, about 50 cowsheds at the time were separated from each other by at least 100 yards. The business of the Dairy Farm was so prosperous that in 1936 it was reported to be the fifth or the sixth in the size of the herd in the world.

By the late 1910s, six silos were scattered over the whole estate, and the situation remained the same in the 1950s. Freshly cut grass, as well as hay and other fodder, for example, brewers grains, wheat bran, copra and peanut cakes, beans, molasses, cotton cakes and straw, were brought to the cows in their cowsheds or paddocks.

Two types of grass, namely Guinea Grass (*Panicum Maximum*) and Elephant or Napier Grass (*Pennisetum Purpureum*) were grown as the green fodder. When properly manured both kinds grow rapidly in the wet summer months. In the 1950s, there was a tendancy to substitute Elephant Grass for Guinea because the former had a larger yield per acre per annum (10 tonnes per acre per annum more than Guinea Grass); moreover it was less fibrous but more succulent.

During the dry season, the grass-growing field was fertilized with the cow-dung,[2] using 60 tonnes for each acre and with artificial fertilizer. The green fodder was able to supply the herd in the summer and the surplus was stored in silos at convenient centres on the farm, which could store up to 2,000 tonness of silage. In the winter, the grass did not grow well and silage had to serve as the feed for the cows. The grass was cut just before flowering, when the young grass is very nutritious because of its high protein value and succulence. The surplus grass was compressed in layers to aid fermentation and sweetened with the addition of molasses. This process of preserving green fodder in a succulent condition is called ensilage. In the winter, the cows were also fed on rice straws produced in the New Territories, as well as groundnuts and wheat bran.

The outbreak of the Pacific War in 1941 paralyzed the Dairy Farm Company along with the rest of Hong Kong. During the Japanese Occupation (1941 – 1945), the farm was taken over by the Japanese troops; only several key staff members, including the farm manager and his assistant, the company's veterinary surgeon and an engineer remained on the farm. Milk was reserved for Japanese consumption, mainly for the military hospital; also to internment camps. 1,312 out of the 1,900 animals of the farm were shipped to various parts of Mainland China, including 200 cows to Guangzhou between 29 December 1944 and 12 July 1945, for providing fresh milk to the Japanese troops. By the end of the Japanese Occupation, the herd at Pok Fu Lam had only about 300 cows; many of them were in very poor condition as a result of malnutrition. After the war, farm buildings were repaired and dairy farming at Pok Fu Lam was revived. By the 1950s, Europeans and Indians were still the main consumers of fresh milk, although the number of Chinese customers was gradually increasing, among the wealthier and middle-class families. Schools, particularly army schools, The University of Hong Kong and hotels, all ordered for fresh milk.

In the post-war years, the government needed land for vast new housing projects in order to meet the drastic and huge increase in population. By the early 1960s, a large amount of farmland had been resumed by the government, and residential developments began. Vast new housing estates, such as Baguio Villa, Wah Fu Estate, and Chi Fu Fa Yuen, were built on the original farmlands

[2] The processed cow-dung was generated after fresh cattle manure had been properly stored or "made" in manure-pits and sealed off for two months.

of some 300 acres. As a result, many Dairy Farm premises were abandoned or demolished. To meet the demand for milk, the supply was supplemented with the milk delivered by Dairy Farm's tankers from Kwong Ming Farm in Shenzhen every day. In 1981, a new business policy was established: core businesses were defined as retailing, wholesaling, food and ice manufacturing, and catering. It was for the first time in the company's history that dairy farming was excluded from mainstream business. In 1983, the Dairy Farm Company sold off the herd and more farmland was redeveloped for residential use.[3] The Old Dairy Farm buildings which still exist include a Senior Staff Quarters (Grade 1), the Main Office Building (Grade 2), a Cowshed (Grade 2) and other structures such as silos, manure pits, piggeries and paddocks.

Today, the existing structures of the Old Dairy Farm, which include structures, buildings, together with those graded historic buildings, are located near the Bethanie, Vocational Training Council (VTC), Pok Fu Lam Village, Baguio Villa, Chi Fu Fa Yuen, Wah Fu Estate, Queen Mary Hospital and Ebenezer School & Home for the Visually Impaired (心光盲人院暨學校).

Architectural Merit

Each silo was built in the form of a circular tower with a coursed-rubble stone wall of about 10m height, topped by a small reinforced concrete conical roof and the interior surface was cemented smooth. The stone used for the walls of these structures is mainly local volcanic rock (fine to coarse ash tuff) which was cut into regular squared blocks and bedded in lime mortar; the thickness is 800mm at the lowest level and tapers to approximately 500mm thick at the highest.

The silos were built into an existing slope on the hillside, in order to avoid construction of a long stairway to reach the high-level loading platform, which was just below the roof; instead steps and paths lead up the hillside in order to provide easier access to the loading platform. The fresh grass was chaffed and chopped up, before being emptied through a doorway opening into the silo from the loading platform. When the silage was required for feeding the cattle (in the winter months), it was taken out from the silo through the narrow vertical opening in the front of the structure, at ground level.

[3] The old farm lots roughly cover the present land bounded by Bisney Road and Sassoon Road as well as its adjoining piece of land bounded by Sassoon Road and Victoria Road, both below Queen Mary Hospital (Lot D.F.L No. 1); Baguio Villa and the land near Ebenezer School (Lot D.F.L. No. 2); the slope near the Vocational Training Council Pokfulam Complex and the land where Wah Fu Estate, Chi Fu Fa Yuen, Pokfulam Gardens and Bel-Air on the Peak (Lot D.F.L. No. 3) are now located, and the slopes near Pok Fu Lam Village (Lot D.F.L. No. 4).

Silo near Pok Fu Lam Village

Silo (Serial No. N288)

Constructed before 1941, it was built in the form of a circular tower with a coursed-rubble stone wall, mainly local volcanic rock (fine to coarse ash tuff). A vertical opening at the front elevation for extracting the silage still remain. Viewed from the rear top, the platform and high level access opening for loading the fresh cut grass and an iron door hinge can be seen. In addition, the conical concrete roof decorated with a ball finial is the only roof of the kind which still remains among the surviving silos. Painted figures on the interior wall, giving the depth of the silage (in feet), are still visible.

Silos near Chi Fu Fa Yuen

Silo (Serial No. N289)

Probably constructed between 1931 and 1941, it was built in the form of a circular tower with a coursed-rubble stone wall, mainly local volcanic rock (fine to coarse ash tuff). The loading platform still remains, although the roof and upper stone courses have gone. Painted figures on the interior wall, giving the depth of silage (in feet), remain.

Silo (Serial No. N290)

Probably constructed between 1931 and 1941, it was built in the form of a circular tower with a coursed-rubble stone wall, mainly local volcanic rock (fine to coarse ash tuff). Only the lower portion, with a vertical opening on the front elevation for silage extraction, remains. This silo looks the smallest among the surviving silos.

Silo near VTC

Silo (Serial No. N291)

Constructed before 1922, it was built in the form of a circular tower with a coursed-rubble stone wall, mainly local volcanic rock (fine to coarse ash tuff). The concrete roof and top stone courses are missing and the interior is now filled with rubble and greenery. Only the bottom portion now remains, with the vertical opening for silage extraction which is still intact.

Rarity and Authenticity

In the mid-1950s, there were 19 dairy farms, mostly run by Chinese and one by Indian, mainly in Kowloon and two in Tsuen Wan, New Territories. They were much smaller in scale than the Dairy Farm. Among them, The Kowloon Dairy Farm (九龍維記牛奶有限公司), established on Boundary

Street in 1904 and relocated to Clear Water Bay in 1930, was the only dairy farm operated on a scientific basis comparable to the Dairy Farm in Pok Fu Lam.[4] In 1972, The Kowloon Dairy Farm was relocated to Yuen Long; and in 1984 it further moved to Guangzhou.

Trappist Dairy (十字牌鮮奶) is another well-known brand of fresh milk in Hong Kong but is much shorter in history than the Old Dairy Farm. It was firstly a small dairy farm operating under Trappist Monastery (神樂院) on Lantau Island in the early 1960s. It later expanded and moved to Yuen Long in the early 1980s and has then been running by Trappist Dairy Limited (神樂院牛奶有限公司).

The surviving silos at the Old Dairy Farm complex are examples of specialized structures to tell the development of dairy farming history. The confident use of local stone materials by the builders in erecting these substantial structures is particularly noteworthy. No major alterations appear to have been made to the structures, although two of them are in a derelict state. The silos are surviving structures of what was once Hong Kong's largest dairy farm, where production dated back to 1886 and, therefore, obviously have built heritage value.

Social Value & Local Interest

Dairy Farm was an important part of Hong Kong's history. It is a tale of men who developed a company not with the sole intent of making money, but with a commitment to help establish a thriving community in this part of the world. Today, more than 130 years since 1886, "Dairy Farm" is still a well-known brand of fresh milk for Hong Kong.

The Old Dairy Farm provided jobs for villagers nearby, like Pok Fu Lam Village.[5] Villagers worked as cowboys, watchmen and so on.

[4] Most of these farms were located in Diamond Hill and two in Tsuen Wan. Each of the farms at Diamond Hill owned only one or two cowsheds and kept an average of 40 cows. The two farms in Tsuen Wan had only one and two cowsheds respectively.

[5] The growth of the population of the village had led to the scarcity of cultivated land by the 1950s and subsistence farming could no longer be relied on as a means of living.

Group Value

The surviving structures of the Old Dairy Farm at Pok Fu Lam include cowsheds, paddocks, silos, manure pits, piggeries, stream crossings, staff quarters and ancillary structures, although some of them are in poor condition. The farm site provides an example of the dairy farming industry in Hong Kong.

Other heritage buildings near the Old Dairy Farm include the Bethanie (Declared Monument), University Hall of The University of Hong Kong (exterior is a Declared Monument), Jessville at No. 128 Pok Fu Lam Road (Grade 3), waterworks structures of Pok Fu Lam Reservoir (Declared Monument/ Grade 2/ Grade 3) and No. 97 Pok Fu Lam Village (Grade 3).

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– Manure Pits

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Architectural Merit

The manure pits were built reasonably close to the cowsheds in order to provide easier transport of the manure, but not so near as to cause a health nuisance to the cows and to reduce fly nuisance and avoid dust and dirt which could affect the cleanliness of the cowsheds and the health of the herd and contaminate the milk. They were built against an embankment or slope, in the same manner as the silos at the Old Dairy Farm; this allowed manure to be emptied into the pit from the top of the embankment through an access hatch in the top of the rear wall, without the need for the construction of a long staircase. The manure was taken out from the pit when required

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during the dry season, via a smaller door in the lower part of the front wall of the pit. A small opening at the base of the front wall drained off the liquid discharge.

The type of construction was similar to the silos, but because the manure was wet, it exerted a much higher pressure on the walls, therefore the walls of the manure pits had to be constructed to a higher standard to withstand the extra internal loading. Buttresses were, therefore, often required and the front wall was built to an incline ('battering") to improve its stability. The walls of the manure pits were built of coarse squared rubble and the roofs were of curved reinforced concrete. The reasons for roofing over the manure pit were to protect the contents from rain, which would wash out the manure's nutrients and also to reduce the number of flies which might be disease-carrying. The stone used for the walls of these structures is local volcanic rock (fine to coarse ash tuff) which was cut into regular squared blocks and bedded in lime mortar. The remains of a metal sliding door track can be seen over one of the side door openings.

Manure Pits near Pok Fu Lam Village

Manure Pit (Serial No. N292)

Constructed before 1941, it was built up against a slope in order to provide easy access to the manure loading platform at the top. The walls were made of large blocks of volcanic rock laid in "coursed rubble" style. The front wall was built at a slight incline to improve stability. There is a window of a later alteration on the front elevation, which gives evidence of a change of use, into perhaps a store building. The door opening with a timber door on one of the side elevations (right-hand side) is another alteration; but there is evidence of a larger original door opening, which is now partly bricked up. Viewed from the rear top, this manure pit has an opening below the stone lintel for putting in the manure, but it is now covered with earth.

Manure Pit (Serial No. N293)

From a map of the farm printed during the Japanese Occupation, this structure is a manual pit; but it is believed that it was built before 1923. It was made up of stone blocks laid in regular courses and was roofed over by corrugated sheeting and had a door opening in the wall, showing that the manual pit has probably been converted into a dwelling or store building.

Manure Pits near Chi Fu Fa Yuen

Manure Pit (Serial No. N294)

Built before 1931, it is the largest existing example of a manure pit of the Old Dairy Farm, with a high standard of masonry work. Heavy stone buttresses have been constructed to take the pressure of the internal loading. The walls are of volcanic rock, laid in "squared coursed-rubble" style. A small opening at the base drained off the liquid discharge. The roof had collapsed and there is much rubble and plant growth in the interior of the pit.

Manure Pits (Serial No. N295)

These two adjoining manure pits were probably built between 1931 and 1941. The curved concrete roofs and some of the walls have collapsed, with the interior very overgrown and full of debris. However, their stone steps leading down from the opening for inputting the manure are still intact. The steel frame of each manure pit is still in place, although the door is now missing.

Manure Pits near VTC

Manure Pit (Serial No. N296)

Probably built between 1931 and 1941, its walls are of volcanic rock laid in a "squared coursed-rubble" style. The loading platform can still be identified, with an opening for collecting manure at high level, but the door of this opening is missing. A buttress still exists. There is a thin curved concrete roof with metal reinforcement. A flat concrete area connects with an adjoining manure pit (Serial No. 297).

Viewed from the high-level loading opening, the stone steps providing access for collecting and raking manure at lower level are still intact. Remains of the metal frame for the old access doors still exist.

Manure Pit (Serial No. N297)

Probably built between 1931 and 1941, it had a curved concrete roof, with stone walls still intact. The stone steps providing access for collecting and raking manure at lower level and a thin curved concrete roof with metal reinforcement are still intact.

Manure Pit (Serial No. N330)

Constructed before 1941, the remains of this manure pit shows that it shares some features of another manure pit (Serial No. N292), i.e. it was built up against a slope in order to provide easy access to the manure loading platform at the top, with walls made of large blocks of volcanic rock laid in

"coursed rubble" style. The roof has collapsed. Only some remnants of the walls, largely covered by roots and wild vegetation, and a door opening on one of the side elevations remain.

In the mid-1950s, there were 19 dairy farms, mostly run by Chinese and one by Indian, mainly in Kowloon and two in Tsuen Wan, New Territories. They were much smaller in scale than the Dairy Farm. Among them, The Kowloon Dairy Farm (九龍維記牛奶有限公司), established on Boundary Street in 1904 and relocated to Clear Water Bay in 1930, was the only dairy farm operated on a scientific basis comparable to the Dairy Farm in Pok Fu Lam.[3] In 1972, The Kowloon Dairy Farm was relocated to Yuen Long; and in 1984 it further moved to Guangzhou. ***Rarity, Built Heritage Value & Authenticity***

Trappist Dairy (十字牌鮮奶) is another well-known brand of fresh milk in Hong Kong but is much shorter in history than the Old Dairy Farm. It was firstly a small dairy farm operating under Trappist Monastery (神樂院) on Lantau Island in the early 1960s. It expanded and moved to Yuen Long in the early 1980s and has then been running by Trappist Dairy Limited (神樂院牛奶有限公司).

The surviving manure pits at the Old Dairy Farm complex are examples of specialized structures to tell the development of dairy farming history, although some are in derelict states.

Dairy Farm was an important part of Hong Kong's history. It is a tale of men who developed a company not with the sole intent of making money, but with a commitment to help establish a thriving community in this part of the world. Today, more than 130 years since 1886, "Dairy Farm" is still a well-known brand of fresh milk for Hong Kong. ***Social Value & Local Interest***

The Old Dairy Farm provided jobs for villagers from nearby, like Pok Fu Lam Village.[4] The manure pits provided the lowest level of unskilled employment on the farm for them.

The surviving structures of the Old Dairy Farm at Pok Fu Lam include cowsheds, paddocks, silos, manure pits, piggeries, stream crossings, staff ***Group Value***

[3] Most of these farms were located in Diamond Hill and two in Tsuen Wan. Each of the farms at Diamond Hill only owned one or two cowsheds and kept an average of 40 cows. The two farms in Tsuen Wan had only one and two cowsheds respectively.

[4] The growth of the population of the village had led to the scarcity of cultivated land by the 1950s and subsistence farming could no longer be relied on as a means of living.

quarters and ancillary structures, although some of them are in poor condition. The farm site provides an example to show the dairy farming industry in Hong Kong.

Other heritage buildings near the Old Dairy Farm include the Bethanie (Declared Monument), University Hall of The University of Hong Kong (exterior is a Declared Monument), Jessville at No. 128 Pok Fu Lam Road (Grade 3), waterworks structures of Pok Fu Lam Reservoir (Declared Monument/ Grade 2/ Grade 3) and No. 97 Pok Fu Lam Village (Grade 3).

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