

Quarries in Hong Kong

Key Messages: Hong Kong has a long history of rock quarrying, with the earliest records found from a census conducted in 1841. Rock Quarries have been playing an important role in the development of Hong Kong and remain strategically important to the construction industry in that they provide rock aggregates, recycle surplus rock generated from construction projects, and provide sites for concrete and asphalt batching. Upon completion, the quarry sites provide a source of land suitable for development. Currently, there is only one active local quarry, Lam Tei Quarry. To maintain a local supply of rock aggregates, the Government is undertaking studies of underground quarrying. The pilot underground quarrying at Lam Tei, Tuen Mun commenced in mid-2025, while studies are underway for underground quarrying at Tsing Yi North and Sham Shui Kok, North Lantau.

Introduction

The quarrying of rock, principally granite, in Hong Kong has a long history with the earliest records found from a census conducted in 1841. Subsequently, with the city development of Hong Kong and the increasing need for rock for construction, the Government began regulating the local quarry industry under a permit system. The first permit for quarrying was granted in 1844. By 1907, there was a total of 114 permit quarries, including five on Hong Kong Island, eight on the Kowloon Peninsula and 101 in the New Territories. The District Officer issued permits for quarrying in the New Territories and the Superintendent of Crown Lands issued permits for quarrying in Kowloon and Hong Kong Island. The Government first established its own quarry at Tsat Tsz Mui (now called North Point) in 1915.

Prior to the early 1960s, most of the rock produced locally came from small-scale permit quarries, the daily output from which was typically limited to a few hundred tonnes of aggregate (about one-tenth of the daily output from a modern quarry). The operators of the permit quarries originally paid the Government for the rights to quarry based on the amount of rock excavated, but because of difficulties in obtaining reliable production records, the Government subsequently introduced a scheme whereby fees were paid based on the actual area of the production face. A problem with these small quarries was that operators had a low awareness of health, safety and environmental matters at that time. In an attempt to address these issues and to increase the production of quarries, the Government began to introduce 'contract' quarries, where the operator paid the Government a premium, based on a lump sum tender price, every six months for the rights to excavate and sell rock.

In spite of the establishment of a few larger contract quarries, due to the continued prevalence of small permit quarries, the quarry industry had difficulty in coping during periods of high demand, such as the building boom between 1963 and 1964. The shortage of aggregate, mainly for the production of concrete, during this period led to a significant increase in the price. The sharp drop in the demand for aggregate that occurred following this building boom also had an impact on the number of operating permit quarries, with only 37 out of 70 quarries with permits remaining in operation during a survey in 1966.

To secure a stable supply of aggregate to meet the demand from the construction of housing and the establishment of “new towns”, the Government reviewed the quarry policy in 1966 and embarked on a programme to phase out the award of new permits for small quarries and replace them with quarrying contracts through open tender, the last permit quarry, Flat Hill Quarry (Jordan Valley), was then closed in 1974. At that time, there were six contract quarries (three at Anderson Road, and the remaining at Cha Kwo Ling, Lam Tei and Shek O) and two Government quarries (Diamond Hill and Mount Butler). Despite the fact that permit quarries were eventually phased out and replaced by contract quarries, there was still no contract requirement for the quarry operators to rehabilitate the quarry sites after quarrying, which led to areas of degraded landscape. The conditions of these ex-quarry sites deteriorated and became dangerous, rendering them unsuitable for development without extensive remediation.

Rehabilitation Contracts

In 1989, as an outcome of the Metroplan Landscape Strategy for Urban Fringe and Coastal Areas, quarries were identified as areas of degraded landscape requiring rehabilitation. To deal with this issue and to provide suitable, safe sites for development, the Government introduced quarry rehabilitation contracts. Under such contracts, the quarry contractor is required to pay the Government for the rights enjoyed under the contract, such as processing and selling of rock excavated within the quarry, and manufacturing and selling of concrete and asphalt. These rights generate income for the contractor, which is used, in part, to cover the cost of rehabilitating the quarry site. The rehabilitation works typically involve major landscaping work, habitat restoration by planting of trees and shrubs, and provision of drainage and erosion control measures.

The following quarries have been operated under rehabilitation contracts:

- Turret Hill Quarry – The quarry site is located to the northeast of Shatin New Town and occupies an area of about 25 hectares. The rehabilitation contract was signed in April 1989 and completed in June 1995. About 8.5 million tonnes of rock were excavated from the quarry under this contract. A portion of the ex-quarry site is developed by the Environmental Protection Department as a refuse transfer station and the remaining part of the ex-quarry site is being re-developed into a public columbarium.
- Lamma Quarry – The quarry site is located on the north side of Sok Kwu Wan and occupies an area of about 49 hectares, with about one kilometre of coastline. The rehabilitation contract was signed in December 1995 and completed in December 2002. The total amount of rock excavated from the quarry was about 14.7 million tonnes. The rehabilitation work included construction of a four-hectare lake.
- Shek O Quarry – The quarry site is located on the west coast of Cape D’Aguilar Peninsula on Hong Kong Island and occupies an area of about 45 hectares. The rehabilitation contract was signed in March 1994 and completed in December 2011. The total amount of rock excavated from the quarry was about 26.6 million tonnes. The rehabilitation work included the construction of a marine cove for recreation purposes. Subsequent to the completion of the quarry contract, the site was used as a casting basin by MTR Corporation

Ltd. for the fabrication of pre-cast concrete units of subsea tunnels.

- Anderson Road Quarry – The quarry site is located on the south-western ridge of Tai Sheung Tok on the Kowloon Peninsula and the platform created by quarrying is about 40 hectares. The rehabilitation contract was signed in March 1997 and was originally scheduled to be completed in December 2013, but subsequently extended to July 2017. The total amount of rock excavated from the quarry was about 43 million tonnes. The ex-quarry site is currently being developed for housing and other uses, such as commercial uses, government, institution or community facilities, open space and amenity areas, etc.
- Lam Tei Quarry – The quarry site is located about three kilometres north of Tuen Mun New Town and the platform created by quarrying is about 9 hectares. The first rehabilitation contract commenced in October 2006 and was completed in July 2015. A rehabilitation (extended works) contract was subsequently signed by the Government in April 2015 and is scheduled to be completed in 2026, dovetailing the pilot underground quarrying contract at Lam Tei commenced in mid-2025. Lam Tei Quarry is currently the only active local quarry.

Importance of Quarries

Apart from generating revenue to the Government, quarries are of strategic importance to the local construction industry in that they provide:

- (i) local rock aggregate that help maintain the stability of local supply by avoiding total reliance on imports and building resilience against the impact of import disruptions;
- (ii) sites for recycling surplus rock generated from local construction projects, thus helping to ensure reuse of local resources;
- (iii) much-needed sites to house essential construction-related upstream facilities, such as concrete and asphalt batching plants; and
- (iv) upon completion, a source of land suitable for development.

Supply and Demand of Rock Aggregate

Hong Kong was self-sufficient in the production of aggregate from local quarries until the late 1970s, when local demand was about ten million tonnes per year. With new town development and the implementation of Airport Core Programme, demand of aggregate increased to a peak of about 25 million tonnes per year in 1995-96. In parallel, local production declined with the progressive closure of local quarries, and Hong Kong increasingly became dependent on import from the Chinese Mainland. With the implementation of Ten Major Infrastructure Projects and the start of the Three Runway System Project, the demand of aggregate increased again in 2010-11, peaking at about 25 million tonnes per year again in 2017. Apart from Lam Tei Quarry, the public works project “Relocation of Sha Tin Sewage Treatment Works to Caverns” is also a local source of aggregate supply. In recent years, local

aggregate supply accounted for about 10-15% of the total aggregate consumed, while 85-90% was imported from the Chinese Mainland.

Contributions of Quarries to Sustainable Development

Local quarries receive surplus rocks generated from construction projects for recycling, processing them into aggregate that is subsequently used for manufacturing of concrete and asphalt. This promotes the sustainable use of local rock resources. Additionally, recycling rock in quarries helps alleviate the pressure on public fill reception facilities. In the past five years, the total quantity of rock imported to Lam Tei Quarry for recycling was about 2.6 million tonnes.

The Future of Local Quarries

In view of the strategic importance of local quarries to the construction industry, the Government is undertaking studies on underground quarrying. The pilot underground quarrying contract at Lam Tei, Tuen Mun commenced in mid-2025. In addition, underground quarrying at other two sites at Tsing Yi North and Sham Shui Kok, North Lantau are being studied.

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