

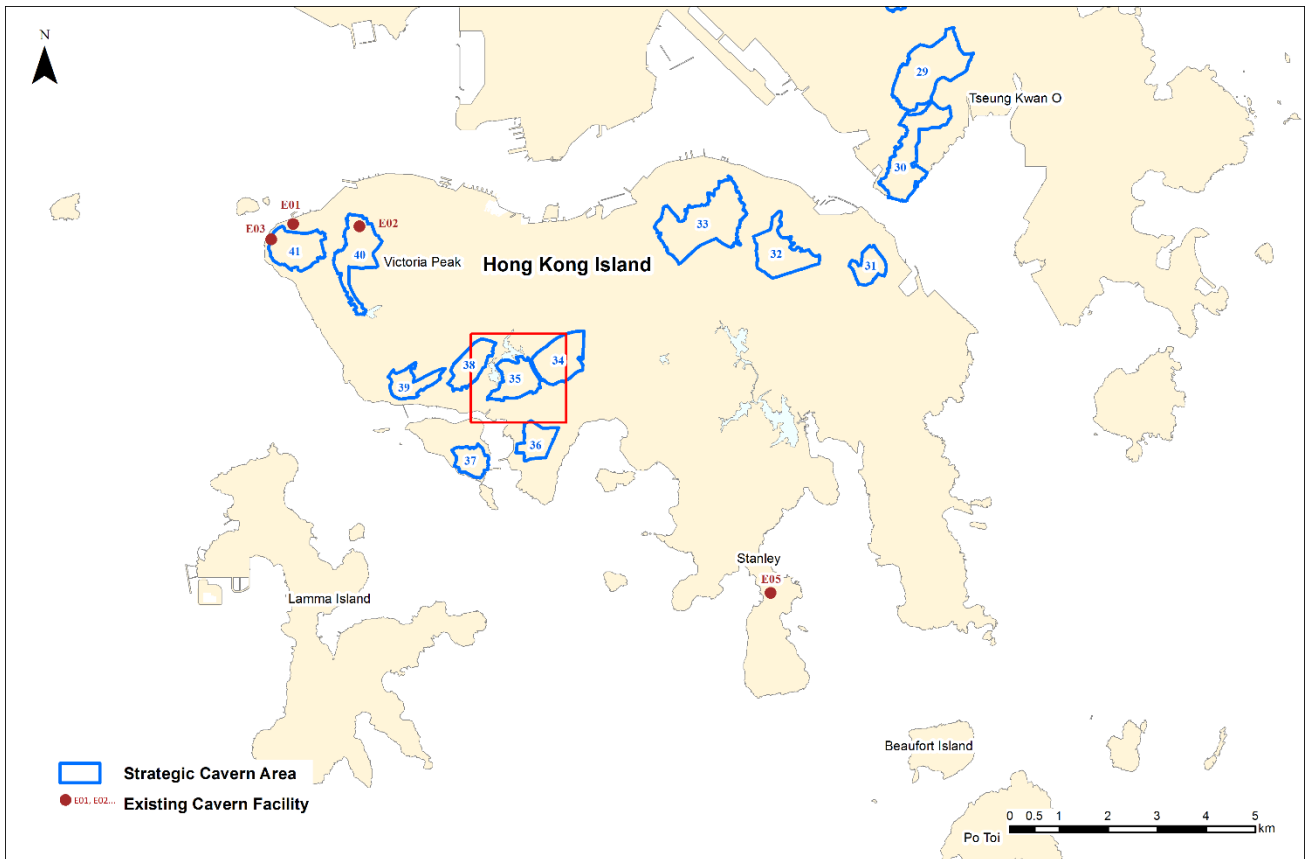
CAVERN MASTER PLAN – INFORMATION NOTE

STRATEGIC CAVERN AREA NO. 35 – BENNET’S HILL

This Information Note describes the characteristics, key development opportunities and constraints of Strategic Cavern Area No. 35 - Bennet’s Hill (the SCVA). It indicates the potential land uses suitable for cavern development within the area but would not pre-empt other possible land uses put forward by the project proponents with justifications. It also denotes the extent of potential portal locations. The spatial context of the SCVA is illustrated in the Reference Drawing appended to this Information Note.

Reference should be made to the Explanatory Statement of the Cavern Master Plan for its background and purposes, as well as the definition and delineation criteria of SCVAs.

1. Location Plan



2. Strategic Cavern Area Details

Outline Zoning Plan (OZP):	Approved Aberdeen & Ap Lei Chau OZP No. S/H15/31
Area:	57.6 ha
Maximum elevation in SCVA:	+214 mPD
Minimum elevation in SCVA:	+5 mPD

3. District Context

Location

The SCVA is located in the southern part of Hong Kong Island. It occupies the foothill area of Bennet's Hill in Wong Chuk Hang. Aberdeen Country Park is to the north of the SCVA, Shouson Hill is to the east, Wong Chuk Hang is to the south, and Shek Pai Wan and Aberdeen are to the west.

The SCVA is generally hilly with a maximum elevation of about +214 mPD. About half of the SCVA encroaches onto Aberdeen Country Park. To the east of the SCVA, the area of Shouson Hill is predominantly residential communities with low-rise developments such as Shouson Peak (about 800 m to the southeast of the SCVA). To the south of the SCVA, the industrial area in Wong Chuk Hang has been rezoned to "Other Specified Uses" annotated "Business" and gradually transformed into a new business area for information technology and telecommunications industries, non-polluting industries, office and other commercial uses, with high-rise developments clustering along Wong Chuk Hang Road and Heung Yip Road. To the west of the SCVA, Shek Pai Wan and Aberdeen are other residential areas with medium to high-rise developments, including Shek Pai Wan Estate (about 250 m to the west of the SCVA), Yue Kwong Chuen (about 350 m to the west of the SCVA) and Aberdeen Centre (about 600 m to the west of the SCVA). The industrial related uses in Aberdeen are intended to be phased out gradually through redevelopment for residential uses.

In the proximity of the SCVA, there are a number of key Government, Institution and Community (GIC) facilities supporting the development of surrounding areas and the territory, including a cluster of hospitals and related facilities (such as Grantham Hospital at the southeastern boundary of the SCVA), Aberdeen Fresh Water Service Reservoir (about 400 m to the west of the SCVA) and Hong Kong Police College (about 300 m to the southeast of the SCVA). Ocean Park, one of the major recreational theme parks in Hong Kong, is located at about 500 m to the southeast of the SCVA. Aberdeen Upper Reservoir and Aberdeen Lower Reservoir are located to the north and west of the SCVA.

Access

The SCVA is accessed from its southern edge via Yip Hing Street, Tong Bin Lane and Yip Kan Street. Regional connections could be routed through the nearby Wong Chuk Hang Road and Aberdeen Tunnel.

The MTR South Island Line serves the neighbouring areas of the SCVA. The nearest stations including Ocean Park Station (about 450 m to the southeast of the SCVA) and Wong Chuk Hang Station (about 200 m to the south of the SCVA). The MTR South Island Line (West), with an indicative implementation window from 2021 to 2026 recommended for planning, will serve the western and southern parts of Hong Kong Island. The South Island Line (West), together with the South Island Line and the Island Line, will form a railway loop covering the central and western parts of Hong Kong Island. The South Island Line (West) will comprise a proposed station in Aberdeen (exact location to be confirmed) which will serve the locality of the SCVA in future.

Land Use Zoning

Under the Approved Aberdeen & Ap Lei Chau OZP No. S/H15/31, the northwestern portion of the SCVA is zoned “Country Park” (“CP”), which is part of Aberdeen Country Park, while the remaining portion is zoned “Green Belt” (“GB”). The zoning of the surrounding areas includes “CP” to the north and northwest, “GB” to the northeast and southwest, “Government, Institution or Community” to the southeast and south, and “Open Space”, “Other Specified Uses” annotated “Commercial Development with Multi-Storey Public Lorry Park”, “Other Specified Uses” annotated “Business”, “Other Specified Uses” annotated “Ocean Park” and “Other Specified Uses” annotated “Marina Club” to the south of the SCVA.

For details of the latest land use zonings on the OZP, please refer to the Town Planning Board website (<http://www.tpb.gov.hk>).

There is currently no existing or planned cavern facility within the SCVA.

4. Summary of Characteristics of Strategic Cavern Area

4.1. Boundary

The northern boundary of the SCVA is defined by Aberdeen Upper Reservoir and its access road. The eastern boundary of the SCVA is defined by the valley topography. The western boundary of the SCVA is defined by Aberdeen Lower Reservoir. The southern boundary of the SCVA is defined by Yip Hing Street, Tong Bin Lane, Yip Kan Street, Wong Chuk Hang Road, and private lots in the “Other Specified Uses” annotated “Business” zone at Wong Chuk Hang.

4.2. Geology

The solid geology of the SCVA is primarily fine ash vitric tuff, which belongs to Ap Lei Chau Formation. The SCVA is with a rock type that is suitable for cavern development. A number of geological features, such as faults, photolineaments and isolated dykes, are identified within and in areas surrounding the SCVA. The excavated rocks within the SCVA can be used as road base material and for asphalt production, etc.

Further geological information of the SCVA can be found on the 1:20,000-scale Geological Map Sheet 11 (Hong Kong & Kowloon) published by the Geotechnical Engineering Office, Civil Engineering and Development Department.

4.3. Planning

The SCVA is adjacent to various residential and business areas in Wong Chuk Hang, Shek Pai Wan, Aberdeen and Shouson Hill. Given that the SCVA is also well connected to the rest of the territory by roads and railways, there is potential for the SCVA to support the development of these areas.

Wong Chuk Hang has been transformed gradually into a business area with information technology and telecommunications industries, non-polluting industries, office and other commercial uses. In particular, various wine storage facilities have been developed, making use of the spacious industrial buildings and good connectivity available in this area. There is potential for the SCVA to provide new space to accommodate warehousing (such as mini-storage) and/or wine storage related uses. Storage of wine in caverns can benefit from its stable and secure environment.

The areas of Shek Pai Wan, Aberdeen and Shouson Hill are major residential communities consisted of low- to high-rise developments (e.g. Shek Pai Wan Estate, Yue Kwong Chuen and Aberdeen Centre) supported by various GIC facilities (e.g. sports centre, school, hospital, service reservoir, etc.). There is also a plan to redevelop the aged Yue Kwong Chuen for improvement of the living environment and provision of more residential flats. In view of the existing compact and high density built environment and the potential increase in population in these areas, there is opportunity for the SCVA to provide solution space to support such expansion and to improve the provision of GIC facilities for the community by providing additional suitable community facilities (e.g. leisure centre/sports centre) in caverns. Also, relocation of existing infrastructure facilities (e.g. service reservoir) to caverns could be considered to release surface land for other uses (e.g. community facilities). This could enable more effective utilisation of land resources in the areas while preserving the landscape in the foothill of Bennet's Hill as a natural backdrop to the adjacent communities.

4.4. Environmental

Environmental sensitive receiver to cavern development in the SCVA is the nearby school, namely Aberdeen Technical School. The Main Building and Annex of which are both Grade 3 historic buildings. About half of the SCVA encroaches onto Aberdeen Country Park, Water Gathering Grounds and wooded areas. There are natural and modified water courses within the SCVA. A number of historic structures, including the Dams of the Aberdeen Upper Reservoir and the Aberdeen Lower Reservoir (both are declared monuments), the Valve House and Pump house of the Aberdeen Lower Reservoir (both are Grade 2 historic buildings), the Aberdeen Management Centre, Chemical House and Air Vents of the Aberdeen Lower Reservoir (both are Grade 3 historic buildings), are located in the proximity to the northwestern boundary of the SCVA. Some other graded historic buildings such as Tin Hau Temple (Aberdeen) (Grade 3 historic building), Holy Spirit Seminary Chapel (Grade 3 historic building) and its Old Block (Grade 1 historic building) are also located near the SCVA.

All potential environmental constraints, which may impose restrictions on cavern development, should be identified and taken into account in cavern development proposals under the Environmental Impact Assessment Ordinance (EIAO) and other relevant ordinances, such as the Country Parks Ordinance. Project proponents are required to take into account the potential environmental constraints when planning each cavern development project and undertaking the environmental impact assessment under the EIAO to determine its environmental acceptability, potential environmental impacts and environmental mitigation measures required.

4.5. Traffic

The SCVA can be accessed from its southern edge via Yip Hing Street, Tong Bin Lane and Yip Kan Street. Regional connections could be routed through the nearby Wong Chuk Hang Road and Aberdeen Tunnel.

The extent of potential portal locations is easily accessible from the primary road network via the eastbound lower carriageway of Wong Chuk Hang Road, and from other areas of Hong Kong via the Aberdeen Tunnel, of which both accesses are with high capacity.

There have been local concerns on the traffic capacity of the local roads in the Southern District, particularly for Aberdeen Tunnel and Ap Lei Chau Bridge Road. Project proponents should take account of the concerns in formulating cavern development proposals and review and assess any potential traffic impact on both local and district basis.

4.6. Other Key Issues / Constraints on Cavern Development

A proposed railway tunnel for the South Island Line (West) will be located to the south of the SCVA. Several abandoned tunnels are approximately 50 m and 400 m to the southwest of the SCVA. Owing to the difference in elevation with respect to the potential portal locations, these tunnels would not pose any insurmountable constraint on cavern development within the SCVA.

5. Potential Land Uses

The potential land uses for the SCVA are as follows:

Land use	Description
Leisure Centre/Sports Centre	<p>The SCVA is located adjacent to a large population catchment as it is close to the existing and planned major residential communities in Aberdeen, Shek Pai Wan and Shouson Hill. There is potential for the SCVA to support these neighbouring communities by providing additional community facilities, such as leisure centre/sports centre, to meet the rising demand.</p> <p>The potential portal locations are in close proximity to the Ocean Park Station and Wong Chuk Hang Station of the South Island Line and the future station in Aberdeen of the proposed South Island Line (West). The ease of access for local residents enhances the potential for housing such facilities in the SCVA.</p>
Service Reservoir	<p>Given that the SCVA is adjacent to various residential and business communities (e.g. Shouson Hill, Wong Chuk Hang, Shek Pai Wan and Aberdeen), there is opportunity for the SCVA to provide alternative space for relocating the existing infrastructure facilities (e.g. service reservoirs) in the vicinity, so as to release the surface land for other uses to support the neighbouring communities.</p>

Land use	Description
<p>Warehousing</p> <p>Wine Storage</p>	<p>The SCVA is adjacent to the existing and planned business area in Wong Chuk Hang supported by good road network, and is served by the MTR South Island Line (e.g. Ocean Park Station and Wong Chuk Hang Station are about 450 m and 200 m to the SCVA respectively). The SCVA enjoys good connectivity and is easily accessible by the general public. In particular, Wong Chuk Hang has been developed with a number of wine storage facilities. There is potential for the SCVA to provide space for warehousing (such as mini-storage) and/or wine storage related land uses to support the commercial development in the area and serve the demand from both local communities and the territory.</p>

Note: Zoning amendment/planning application may be required to facilitate the pursuit of the above potential land uses.

6. Extent of Potential Portal Locations

The extent of the potential portal locations is shown on the Reference Drawing.

The SCVA is accessed from Yip Hing Street, Tong Bin Lane and Yip Kan Street to the south of the SCVA. Yip Hing Street and Tong Bin Lane are relatively steep and may pose constraint to uses that require frequently access by heavy vehicles. Given the existing setting, the potential portal locations in these two roads would be suitable to accommodate low traffic generating activities. As they are located at the slopes adjacent to the carriageways, portal access could be made by provision of suitable run-in/out or priority controlled junction, depending on the proposed land use. For the extent of potential portal location on Yip Kan Street, it is easily accessible from the primary road network via Wong Chuk Hang Road and hence could support a wide range of traffic generating activities. It is on the slope adjacent to the carriageway and portal access could be made by provision of suitable run-in/out or priority controlled junction, depending on the proposed land use.

There are natural slopes above the potential portal locations. There may be potential natural terrain hazards in the vicinity which will require further study by the project proponents.

Project proponents should carry out further studies on identifying specific locations of portals for the proposed cavern development.

7. Concluding Remarks

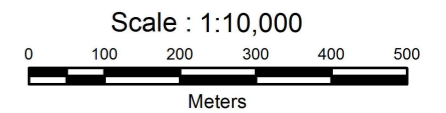
The SCVA presents an opportunity for rock cavern developments to serve the neighbouring residential communities (e.g. by housing service reservoir and/or leisure centre/sports centre) and provide space for potential commercial uses (e.g. by housing wine storage or warehousing). Project proponents for cavern development should take due consideration of the existing and proposed residential developments, environmental sensitive receivers, and the accessibility for cavern development, to minimise the interfacing issues and bring about greater synergy and opportunities.

8. Notes

The Cavern Master Plan and all supporting documents do not exempt project proponents for cavern development from following the relevant statutory and planning procedures. Information including the potential land uses and the extent of potential portal locations indicated in this Information Note should serve as reference materials only. In formulation of development proposals, project proponents should conduct the necessary studies and assessments relevant to each project stage. Reference should be made to the “Implementation” section of the Explanatory Statement of the Cavern Master Plan for further details.



- Legend**
- Strategic Cavern Area
 - Extent of Potential Portal Locations
 - Existing Railway Line
 - Proposed Railway Line
 - Cable Tunnel / Gas Tunnel
 - Vehicle Tunnel
 - Abandoned Tunnel
 - Reservoir / River / Nullah / Sea
 - Graded Historic Building
 - Declared Monument (Site of Archaeological Interest)
 - Declared Monument (Historic Building)
 - Private Lot
 - Consultation Zone of Potentially Hazardous Installation
 - Country Park
 - Site of Special Scientific Interest



REFERENCE DRAWING OF STRATEGIC CAVERN AREA NO. 35 - BENNET'S HILL