

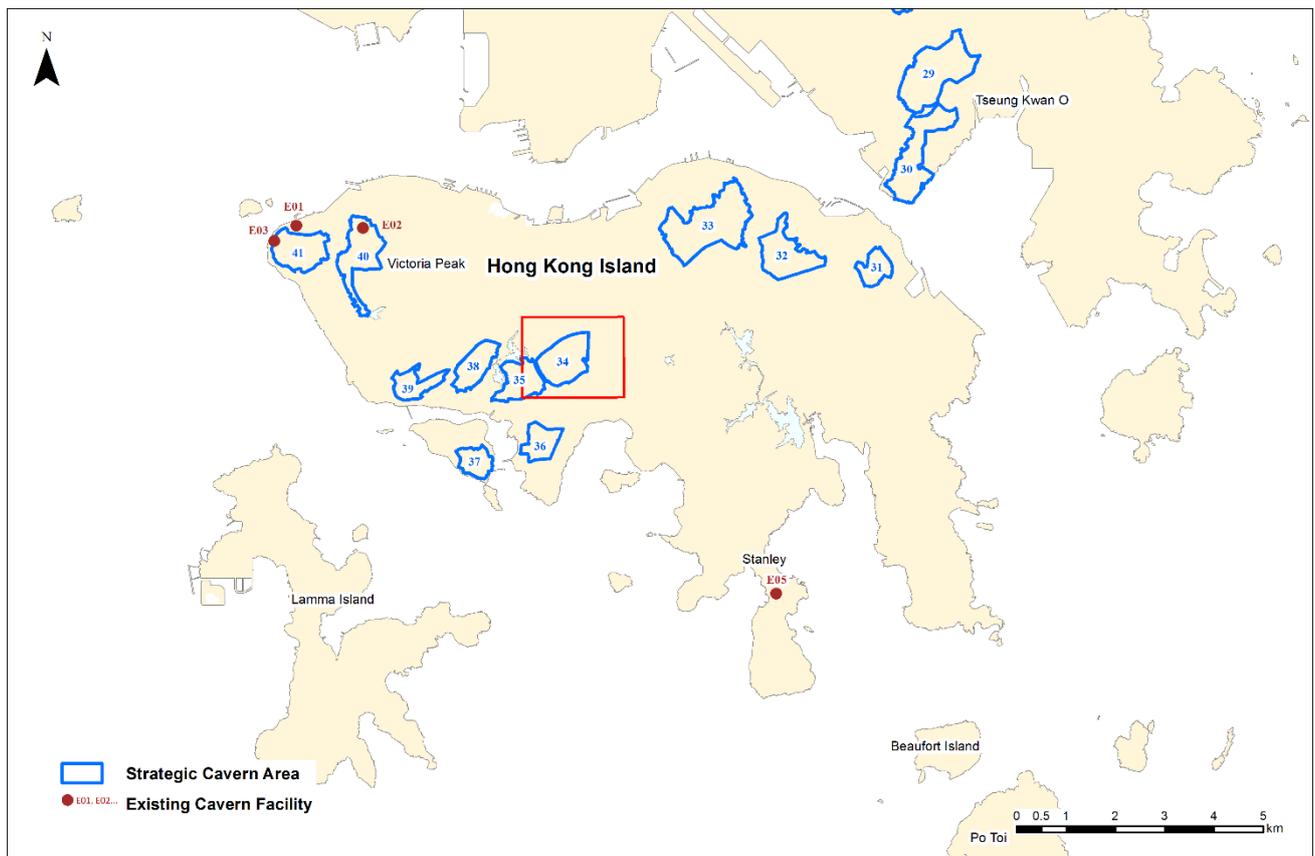
CAVERN MASTER PLAN – INFORMATION NOTE

STRATEGIC CAVERN AREA NO. 34 – WONG CHUK HANG

This Information Note describes the characteristics, key development opportunities and constraints of Strategic Cavern Area No. 34 - Wong Chuk Hang (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 Plans (OZPs):	Draft The Peak Area OZP No. S/H14/12 Approved Aberdeen & Ap Lei Chau OZP No. S/H15/31
Area:	78.6 ha
Maximum elevation in the SCVA:	+277 mPD
Minimum elevation in the SCVA:	+27 mPD

3. District Context

Location

The SCVA is located in the southern part of Hong Kong Island. It occupies the foothill area of Mount Cameron in Wong Chuk Hang. Aberdeen Country Park is to the north of the SCVA, Shouson Hill is to the southeast, Wong Chuk Hang is to the south, and Shek Pai Wan is to the southwest.

The SCVA is generally hilly with a maximum elevation of about +277 mPD. A majority of the SCVA encroaches onto Aberdeen Country Park. To the southeast of the SCVA, the area of Shouson Hill is predominantly residential communities with low-rise developments, including Manderly Garden (about 500 m to the southeast of the SCVA) and Unicorn Garden (about 600 m to the southeast of the SCVA). To the southwest of the SCVA, the industrial area of 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 southwest of the SCVA, Shek Pai Wan is another residential communities with medium to high-rise developments, including Shek Pai Wan Estate (about 1,350 m to the southwest of the SCVA) and Yue Kwong Chuen (about 1,400 m to the southwest of the SCVA).

In the proximity of the SCVA, there are a number of key Government, Institution and Community (GIC) facilities supporting the development of surrounding areas as well as the territory, including a cluster of hospitals and related facilities (such as Grantham Hospital, Hong Kong Academy of Medicine, Wong Chuk Hang Hospital, Wong Chuk Hang Complex for the Elderly and Gleneagles Hong Kong Hospital, all to the south of the SCVA), Hong Kong Police College (about 500 m to the south of the SCVA) and Shouson Hill Fresh Water Service Reservoir (about 750 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 south of the SCVA.

Access

The SCVA is accessed from its southern edge via Nam Fung Road, and via the restricted access within Grantham Hospital for possible development of hospital-related uses. 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 include Ocean Park Station (about 400 m to the south of the SCVA) and Wong Chuk Hang Station (about 600 m to the southwest of the SCVA).

Land Use Zoning

Under the Approved Aberdeen & Ap Lei Chau OZP No. S/H15/31 and the Draft The Peak Area OZP No. S/H14/12, the northern portion of the SCVA falls within an area zoned “Country Park”, which is part of Aberdeen Country Park, while the southern portion of the SCVA is zoned “Green Belt” and “Government, Institution or Community” (“G/IC”). The zoning of the surrounding areas includes “Country Park” to the east and north, “Site of Specific Scientific Interest” to the east, “Green Belt” to the northeast, southeast and west, and “G/IC” as well as “Other Specified Uses” annotated “Ocean Park” to the south of the SCVA.

For details of the latest land use zonings on OZPs, 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 eastern boundary of the SCVA is defined by Aberdeen Tunnel and Nam Fung Road Woodland Site of Specific Scientific Interest (SSSI). The western boundary of the SCVA is defined by the valley topography. The southern boundary of the SCVA is defined by Nam Fung Road, private lots and Grantham Hospital. The northern boundary of the SCVA is defined by an extent of 800 m from the potential portal locations.

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 and photolineaments, are identified within and in areas surrounding the SCVA. The excavated rocks can be used as road base materials 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 Shek Pai Wan, Wong Chuk Hang 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.

The SCVA is situated in a strategic location adjacent to a cluster of hospitals and related facilities in Wong Chuk Hang, including Grantham Hospital, Hong Kong Academy of Medicine, Wong Chuk Hang Hospital, Wong Chuk Hang Complex for the Elderly and Gleneagles Hong Kong Hospital. This clustered hospital and related facilities could be further enhanced, for example, by housing research/testing laboratories and related back-up facilities in caverns in the SCVA in support of the high value-added research and development for the medical industry in the area. This would be in line with the six strategic industries which Hong Kong enjoys clear advantages, as outlined in the 2010/11 Policy Address, including educational facilities, medical services, testing and certification services, innovation and technology, environmental industries, cultural and creative industries.

Besides the development of medical industry, Wong Chuk Hang has also gradually been transformed 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 cavern can benefit from its stable and secure environment.

The areas of Shek Pai Wan and Shouson Hill are major residential communities consisted of low- to high-rise developments (e.g. Manderly Garden, Shek Pai Wan Estate and Yue Kwong Chuen) 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 the 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 improve the provision of GIC facilities for the community, for example, by relocating existing infrastructure facilities (e.g. service reservoir) to caverns such that surface land could be released for other beneficial 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 Mount Cameron as a natural backdrop to the adjacent communities.

4.4. Environmental

Environmental sensitive receivers to cavern development in the SCVA are the nearby residential area (i.e. Kau Wai Village), schools (e.g. St. Paul's Co-educational College Primary School and HKUGA College) and hospitals and related facilities (e.g. Grantham Hospital, Wong Chuk Hang Hospital, Po Leung Kuk Wong Chuk Hang Service for the Elderly and Gleneagles Hong Kong Hospital). The SCVA encroaches onto Aberdeen Country Park, Water Gathering Grounds and wooded areas. There are natural and modified water courses within the SCVA. The Rock Carvings at Wong Chuk Hang, which is a Declared Monument, is located at the southern portion of the SCVA. The Old House (No. 10 Wong Chuk Hang San Wai) (Grade 2 historic building) and the Central Ordnance Munitions Depot (alias, Little Hong Kong) (Grade 3 historic building) are located in the vicinity of the SCVA. Nam Fung Road Woodland SSSI is abutting the eastern boundary of the SCVA. It is the only mature forest on Hong Kong Island dated back to 150 years ago.

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 Nam Fung Road, and via the restricted access within Grantham Hospital for possible development of hospital-related uses. Regional connections could be routed through the nearby Wong Chuk Hang Road and Aberdeen Tunnel.

Nam Fung Road is an Urban District Distributor that leads to Wong Chuk Hang Road to the west. It is convenient to access the SCVA from the primary road network via eastbound lane of Wong Chuk Hang Road. Vehicles travelling from the east, i.e. from the main urban areas of Hong Kong via Aberdeen Tunnel need to perform U-turns at the roundabout junction of Ocean Park Road and Heung Yip Road in order to reach the SCVA via Wong Chuk Hang Road. Project proponents shall be aware of the potentially arduous detour that may affect the accessibility of the SCVA.

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 railway tunnel of the MTR South Island Line passes through the SCVA in its middle portion. Two small abandoned tunnels are located within the northeastern portion of the SCVA. Due to the difference in elevation, these tunnels would not pose any insurmountable constraint to cavern development within the SCVA.

A Drainage Services Department's tunnel, namely the Hong Kong West Drainage Tunnel, is located approximately 300 m to the northeast of the SCVA. A vehicle tunnel of Aberdeen Tunnel is located approximately 50 m to the eastern of the SCVA. A cable tunnel, namely the Hong Kong Electric Nam Fung-Parker cable tunnel, is approximately 200 m to the east of the SCVA. Several tunnels used as wine cellars are located approximately 300 m to the southeast of the SCVA. As these tunnels are far away from the SCVA, they would not pose any insurmountable constraint to cavern development within the SCVA.

5. Potential Land Uses

The potential land uses for the SCVA are as follows:

Land use	Description
Research/Testing Laboratories	<p>The location of the SCVA is strategic in nature for being near the cluster of hospitals and related facilities in Wong Chuk Hang (e.g. Grantham Hospital and Hong Kong Academy of Medicine). The SCVA is also supported by good road network enabling regional connections and convenient transport infrastructure including the MTR South Island Line. These provide a favourable setting for the SCVA to house research/testing laboratories and related back-up facilities, to support the high value-added research and development for the medical industry in the area.</p> <p>The development of research/testing laboratories is in line with the six strategic industries which Hong Kong enjoys clear advantages, as outlined in the 2010/11 Policy Address (i.e. educational facilities, medical services, testing and certification services, innovation and technology, environmental industries, cultural and creative industries).</p>
Service Reservoir	<p>Given that the SCVA is adjacent to various residential and business communities (e.g. Shouson Hill, Wong Chuk Hang and Shek Pai Wan), there is opportunity for the SCVA to provide alternative space for relocating existing infrastructure facilities (e.g. service reservoir) in the vicinity, so as to release the surface land for other uses to support the neighbouring communities.</p>

Land use	Description
Warehousing Wine Storage	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 400 m and 600 m to the SCVA respectively). The SCVA enjoys good connectivity and is easily accessible by the general public. In particular, Wong Chuk Hang has also 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 uses to support the commercial development in the area and meet the demand from both local communities and the territory.

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 extent of potential portal location on Nam Fung Road is at slopes adjacent to the carriageway and access could be made via provision of suitable run-in/out or priority controlled junction, depending on the proposed land use. The road leading to the potential portal location is relatively steep. Considering the possible disruption to the existing traffic flow, it may be appropriate for this potential portal location to accommodate low or moderate traffic generating activities.

Access to the extent of potential portal location within Grantham Hospital is restricted to the hospital-related vehicles only. The current access arrangement would be suitable to accommodate low traffic-generating activities. Major road upgrading/widening works may be required in order to support moderate to high traffic-generating activities. Since this extent of potential portal location is adjacent to Grantham Hospital, the potential portal location and the potential cavern facility would be appropriate to support any development of Grantham Hospital for hospital and related uses.

The extent of potential portal locations on Nam Fung Road is located at cut slopes with natural terrain above. The extent of potential portal locations adjacent to Grantham Hospital is at natural slopes. There may be potential natural terrain hazards in the vicinity which will require further study by the project proponents.

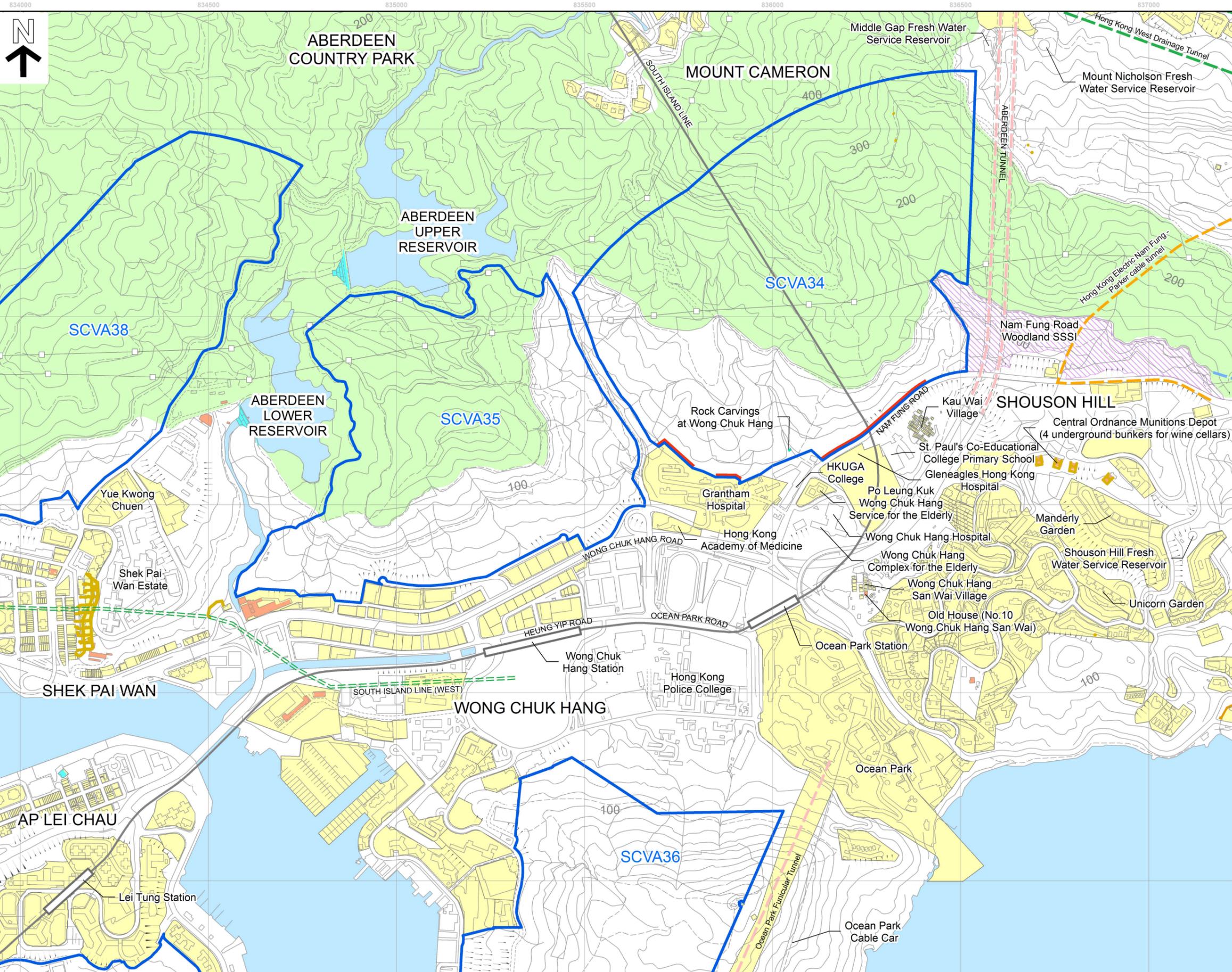
Project proponents should carry out further studies on identifying specific locations of portals for the proposed cavern development.

7. Concluding Remarks

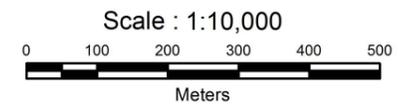
The SCVA presents an opportunity for rock cavern development to serve the neighbouring residential communities (e.g. by housing service reservoir), provide space for potential commercial uses (e.g. by housing wine storage or warehousing) and support the medical industry already clustered in the area adjacent to the SCVA (e.g. by housing research/testing laboratories). 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
 - Drainage Services Department Tunnel
 - Water Supplies Department Tunnel
 - Abandoned Tunnel
 - Reservoir / River / Nullah / Sea
 - Ecologically Important Stream (EIS)
 - Graded Historic Building
 - Declared Monument (Site of Archaeological Interest)
 - Declared Monument (Historic Building)
 - Private Lot
 - Country Park
 - Site of Special Scientific Interest



REFERENCE DRAWING OF STRATEGIC CAVERN AREA NO. 34 - WONG CHUK HANG

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
PLANNING DEPARTMENT

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SCVA 34