This Information Note describes the characteristics, key development opportunities and constraints of Strategic Cavern Area No. 28 - Tai Sheung Tok (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):
- Approved Kwun Tong (North) OZP No. S/K14N/15
- Approved Tseng Lan Shue OZP No. S/SK-TLS/8
- Draft Tseung Kwan O OZP No. S/TKO/25

Area: 90.7 ha

Maximum elevation in the SCVA: +399 mPD

Minimum elevation in the SCVA: +160 mPD

3. **District Context**

**Location**

The SCVA is located at Tai Sheung Tok which is located in East Kowloon. Tseng Lan Shue is located to the northeast of the SCVA, Ma Yau Tong is to the southeast, Sau Mau Ping and Ngau Tau Kok are to the southwest, Jordan Valley is to the west and Fei Ngo Shan is to the northwest.

The SCVA is generally hilly with a maximum elevation of about +399 mPD. About half of the SCVA in its southwestern side overlaps with the Anderson Road Quarry (ARQ), which ceased operation in July 2017. The “Planning Study on Future Land Use at ARQ – Feasibility Study” completed in 2014 recommended using the quarry site for housing development with supporting commercial, Government, Institution and Community (GIC) and open space uses. The study on “Development of Anderson Road Quarry” is currently in progress. This study aims for provision of land and the associated infrastructures for the proposed land uses at the ARQ site according to the Approved Kwun Tong (North) OZP No. S/K14N/15. The first construction contract commenced in late 2016. Anderson Road Fresh Water Service Reservoir and Anderson Road No. 2 Fresh Water Service Reservoir are located at the northwestern and southeastern corners of the SCVA respectively. In addition, the SCVA is in close proximity to a proposed Artificial Flood Attenuation Lake at future Quarry Park within ARQ.
In addition to the future development at the ARQ, the SCVA is surrounded by various low- to high-density residential communities. To the northeast of the SCVA, there is the residential area in Tseng Lan Shue which consists of low-rise residential developments and local villages, including Lung Wo Tsuen and Tan Shan (both close to the northeast boundary of the SCVA). To the southeast of the SCVA, there are local villages in Ma Yau Tong. To the southwest of the SCVA, Sau Mau Ping and Ngau Tau Kok are the major residential areas in the district which consist of a number of large high-rise public housing developments, including Sau Mau Ping Estate (about 600 m to the southwest of the SCVA), Ngau Tau Kok Estate (about 2.1 km to the southwest of the SCVA) (please refer to Reference Drawing of SCVA No. 27 for the location of Ngau Tau Kok Estate) and the ongoing Development at Anderson Road (DAR) (about 300 m to the southwest of the SCVA) for public housing with a planned population of 48,000, of which the first population intake has commenced in June 2016. To the west and northwest of the SCVA, Jordan Valley and Fei Ngo Shan are also home of some low- to high-rise residential developments, including Shun Chi Court (about 150 m to the northwest of the SCVA) and Flamingo Garden (about 150 m to the north of the SCVA).

The development of these major residential areas is supported by a number of key GIC facilities, including Sau Mau Ping Salt Water Service Reservoir (about 250 m to the south of the SCVA), Shun Lee Tsuen Sports Centre (about 400 m to the northwest of the SCVA) and United Christian Hospital (about 900 m to the southwest of the SCVA). The Hong Kong Public Records Building of the Government Records Service (GRS) about 1.4 km to the southwest of the SCVA (at Tsui Ping Road, Kwun Tong, outside the coverage of the Reference Drawing) serves both the locals and the general public by acquiring and providing public access to Hong Kong’s archives.

Access

The SCVA is accessed from its northern, southwestern and southeastern edges via Clear Water Bay Road, an access road on ARQ development and Po Lam Road respectively. Regional connections could be routed through the nearby major road networks such as Tseung Kwan O Road, Tseung Kwan O Tunnel, Clear Water Bay Road and Kwun Tong Road.

Although East Kowloon is served by the MTR Kwun Tong Line, the SCVA and the other upper parts of Kwun Tong is not within the railway catchment. A network of pedestrian links to enable convenient travel by residents among the ARQ development area, Sau Mau Ping, Kwun Tong Town Centre and MTR Kwun Tong Station (about 2 km to the southwest of the SCVA) has been proposed by the Civil Engineering and Development Department (CEDD) as part of the ARQ development. MTR Ngau Tau Kok Station is also located about 2 km to the southwest of the SCVA. Under the Railway Development Strategy 2014, the proposed East Kowloon Line (EKL) will have three stations, namely Po Tat, Sau Mau Ping and Shun Tin, located to the south and west of the SCVA (subject to study).
Land Use Zoning

The SCVA straddles several OZPs including the Approved Kwun Tong (North) OZP No. S/K14N/15, the Approved Tseng Lan Shue OZP No. S/SK-TLS/8 and the Draft Tseung Kwan O OZP No. S/TKO/25. While the majority of northern part of the SCVA is zoned “Conservation Area” under the Approved Tseng Lan Shue OZP, much of the southern part of the SCVA, which is essentially a part of the existing ARQ, is zoned “Green Belt” (“GB”), “Open Space”, “Other Specified Uses” annotated “Service Reservoir” and “Other Specified Uses” annotated “Commercial Development and Vertical Transport Facility” under the Approved Kwun Tong (North) OZP. The southeastern part of the SCVA is zoned “GB” under the Draft Tseung Kwan O OZP. The surrounding areas of the SCVA are mainly zoned as “GB”, “Government, Institution or Community”, “Residential (Group A)”, “Residential (Group B)”, “Commercial” and “Other Specified Uses”.

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 cavern facility within the SCVA. However, it should be noted that the proposed development at the ARQ (part of which is within the boundary of the SCVA) has included various cavern proposals, including a quarry museum and two sites for commercial developments in caverns in the SCVA. The ARQ development will include housing development supported by various commercial, GIC and open space uses. Details of the development can be referred to the Approved Kwun Tong (North) OZP No. S/K14N/15.

4. Summary of Characteristics of Strategic Cavern Area

4.1. Boundary

The northern boundary of the SCVA is defined by Clear Water Bay Road, private lots and local villages, including Lung Wo Tsuen and Tan Shan. The southern boundary of the SCVA is defined by private lots and Po Lam Road. The eastern boundary of the SCVA is defined by the Water Supplies Department’s Ho Chung/Tseung Kwan O Tunnel. The western boundary of the SCVA is defined by On Sau Road, Anderson Road, the proposed extent of development at ARQ based on the aforementioned study and some private lots. Individual private lots located within the SCVA have been excised from the SCVA. Project proponents shall check the latest land status with the Lands Department. Reference should be made to the Explanatory Statement of the Cavern Master Plan for the delineation criteria of SCVAs.

Information Note (SCVA28 – Tai Sheung Tok)
4.2. Geology

The solid geology of the SCVA is primarily fine- to medium-grained granite and medium-grained granite within the western portion, of which all belong to Mount Butler Granite; coarse ash crystal tuff within the eastern portion, which belongs to Mount Davis Formation. The SCVA is with the rock types that are 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 fine- to medium-grained granite and medium-grained granite within the SCVA will be suitable for reuse as construction aggregate. Other excavated rock 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, CEDD.

4.3. Planning

The SCVA is surrounded by various high-density urban developments in East Kowloon, including those in Sau Mau Ping, Ngau Tau Kok, the ongoing DAR as well as the proposed development at ARQ and Po Lam Road. Also, there are proposed cavern developments under the proposed development at ARQ within the SCVA. Although the SCVA is currently not conveniently served by railway line, the proposed East Kowloon Line will have three stations located in the vicinity. The SCVA is well connected to the rest of the territory by major road network, such as Tseung Kwan O Road, Tseung Kwan O Tunnel, Clear Water Bay Road and Kwun Tong Road. There is potential for the SCVA to support its nearby development.

The residential areas consist of high-rise residential developments in Jordan Valley and Sau Mau Ping (e.g. Shun Chi Court, Sau Mau Ping Estate, the ongoing DAR and the proposed development at ARQ) and some local villages in Tseng Lan Shue and Ma Yau Tong (e.g. Lung Wo Tsuen and Ma Yau Tong) supported by various GIC facilities (e.g. sports ground, service reservoir, hospital, school, etc.). Should there be any need for providing additional land for residential use, the SCVA may provide the solution space (subject to assessments) by, for example, housing some of the suitable ‘Not-In-My-Backyard’ (NIMBY) type of facilities, such as refuse transfer station, to minimise the nuisance to the community and to release surface land for other beneficial uses (e.g. residential developments and/or community facilities). Given the SCVA is also well connected to the rest of the territory by major road network, provision of the facilities in the SCVA could possibly serve a wider catchment in a regional context.
The proposed development at ARQ, partially overlapping with the SCVA, will be a new residential community with about 25,000 planned population supported by various commercial uses and GIC facilities. There are also proposals to utilize rock cavern spaces for various uses, including a quarry museum and commercial developments (such as retail) inside caverns. Vehicular road system, pedestrian connectivity and public transport facilities will be provided and/or enhanced to support the proposed development. In this regard, there is great opportunity for the SCVA to be integrated with this development to bring about greater synergy effects, for example, by providing community facilities (such as civic centre, cultural/performance venues or recreational complex) and commercial uses (such as retail, food and beverage or warehousing including mini-storage). Project proponents should take into account the findings of the relevant study aforementioned as well as the implementation of the proposed development.

Given the good connectivity of the SCVA which will be further enhanced by the proposed development of the ARQ and the proposed East Kowloon Line, the SCVA also has the potential to support uses which require good connectivity and easy access by the public, for example, by providing solution space for the relocation and/or expansion of the archive facility in the Hong Kong Public Records Building of the GRS, to sustain the public records services to both the locals and general public.

4.4. Environmental

Environmental sensitive receivers to cavern development in the SCVA are the nearby existing and planned residential developments (e.g. Sau Mau Ping Estate, the ongoing housing development at Anderson Road, Lung Wo Tsuen, Tan Shan and Siu To Yuen Village in Tseng Lan Shue, villages in Ma Yau Tong and the planned residential development in ARQ). The northeastern part of the SCVA encroaches onto the Conservation Area at Tai Sheung Tok. Some extent of the potential portal location along Clear Water Bay Road adjoins the hillside with mature vegetation. Within and in proximity to the SCVA, there are wooded areas and water courses. Ma On Shan Country Park and Li Ancestral Hall (Grade 3 historic building) are located to the northwest and southeast of the SCVA respectively. A traditional burial ground is located to the north of the SCVA across Clear Water Bay Road.

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 northern, southwestern and southeastern edges via Clear Water Bay Road, an access road on ARQ and Po Lam Road respectively. There have been local concerns (including those from Kwun Tong District Council members) on traffic capacity of the local roads. Project proponents should take account of this in formulating development proposals.

The extent of potential portal location at the northern side of the SCVA via Clear Water Bay Road is directly accessible from the primary road network given its linkage with the nearby expressway network in Choi Hung. The access through ARQ on the southwestern side of the SCVA will depend on its future development and provisions of access roads. The access via Po Lam Road is close to the expressway access point via Lin Tak Road, which allows for good connectivity to the rest of the territory.

4.6. Other Key Issues / Constraints on Cavern Development

A Water Supplies Department’s tunnel, namely Ho Chung/Tseung Kwan O Tunnel, is located approximately 50 m to the east of the SCVA. A vehicle tunnel, the Tseung Kwan O Tunnel, is approximately 300 m to the southeast of the SCVA. As these tunnels are far from the SCVA, they would not pose any insurmountable constraint on cavern development.
5. **Potential Land Uses**

The potential land uses for the SCVA are as follows:

<table>
<thead>
<tr>
<th>Land use</th>
<th>Description</th>
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<tbody>
<tr>
<td>Archives</td>
<td>The SCVA has good connectivity to other parts of the territory through the nearby major road networks such as Tseung Kwan O Road, Tseung Kwan O Tunnel, Clear Water Bay Road and Kwun Tong Road, and the connectivity would be further enhanced by the proposed developments at ARQ with a network of pedestrian links connecting MTR Kwun Tong Station (about 2 km to the southwest of the SCVA) and by the provision of new railway stations (located to the west and south of the SCVA) of the proposed East Kowloon Line. There is thus potential to develop suitable land uses that require good connectivity and easy access by the general public, such as archives. The Hong Kong Public Records Building of the Government Records Service (GRS) about 1.4 km to the southwest of the SCVA (at Tsui Ping Road, Kwun Tong) serves both the locals and general public by acquiring and providing public access to Hong Kong’s archives. The SCVA has the potential to provide solution space for the relocation and/or expansion of the archives and related facilities in the Hong Kong Public Records Building to sustain the public records services to the public.</td>
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<tr>
<td>Land use</td>
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<tr>
<td>Civic Centre/</td>
<td>The SCVA is located in an area serving a large population catchment as it is adjacent to various existing/proposed major residential communities in East Kowloon, including Sau Mau Ping, Ngau Tau Kok, the ongoing public housing in DAR, and the proposed development at ARQ. The proposed development at ARQ will include a new residential community supported by various commercial uses and GIC facilities. There are also proposals to utilise rock cavern spaces for public uses, including a quarry museum and commercial developments (such as retail). The SCVA is also easily accessible by the general public via the pedestrian network to MTR stations and the future railway stations of the proposed East Kowloon Line. There is great opportunity for the SCVA to support these existing/proposed developments and to be integrated with the proposed development at ARQ to bring about greater synergy effects by providing supporting community facilities, such as civic centre, cultural/performance venue or recreational complex in caverns, to maximize community benefits.</td>
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<tr>
<td>Cultural/ Performance Venue</td>
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<tr>
<td>Recreational Complex</td>
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<tr>
<td>Refuse Transfer Station</td>
<td>The SCVA is at a strategic location which could serve a wider catchment in a regional context, and it is with good road connection to various major residential communities in East Kowloon, including Sau Mau Ping, Ngau Tau Kok, and the ongoing public housing in DAR. There is potential for the SCVA to support the potential expansion of these areas by relocating and/or expanding some of the suitable ‘NIMBY’ type of facilities, such as refuse transfer station, to minimise the nuisance to the community. Some of the extent of potential portal locations of the SCVA is away from the existing/proposed residential areas, which makes the SCVA compatible with such land use.</td>
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<tr>
<td>Land use</td>
<td>Description</td>
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<tr>
<td>Retail/ Food and Beverage</td>
<td>For the same reason as described for ‘civic centre’ in the above, there is also opportunity for the SCVA to provide commercial uses, such as retail, food and beverage or warehousing with mini-storage in caverns, to meet the increasing demand from the existing/planned communities.</td>
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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 the Clear Water Bay Road to the north, Po Lam Road to the south and an existing cut slope of ARQ via Anderson Road to the southwest.

Clear Water Bay Road is a dual carriageway while Po Lam Road is a three-lane road, both would likely be able to support a range of traffic generating activities. The SCVA can also be accessed directly on the existing quarry slope in ARQ, where the formation of multiple portals is possible. The development of the SCVA could be integrated with that of the ARQ to minimise the interfacing issues with the proposed development at ARQ and bring about greater synergy for future development.

There are natural slopes above the potential portal locations at Clear Water Bay Road and Po Lam Road. There may be potential natural terrain hazards in the vicinity which may require further study by the project proponents. The extent of potential portal location at the western portion of the SCVA is at the existing cut slope of ARQ. There are no natural terrain hazards affecting this potential portal location.

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 placing suitable land uses in rock caverns to serve the nearby large population catchment (e.g. refuse transfer station), and could be integrated with the proposed development of ARQ in the long term (e.g. by providing community and commercial uses, including civic centre, cultural/performance venue, recreational complex, retail, food and beverages, warehousing including mini-storage related uses). It also presents the potential for housing archive type of facilities, so to utilise the good connectivity and to serve the general public. Project proponents for cavern development should take due consideration of the existing and proposed residential developments, environmental sensitive receivers, accessibility for cavern development and the latest progress of the proposed ARQ 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.