



香港地貌岩石保育協會  
Association for Geoconservation, Hong Kong

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URGENT

Dear Sirs/Madams,

## **NORTHERN METROPOLIS AND MA TSO LUNG COMMENTS**

The Association for Geoconservation, Hong Kong (AGHK) was founded in 2007 as a conservation NGO with the primary objectives of conserving the valuable geological heritage and landscape of Hong Kong; to disseminate scientific information of our earth; to promote sustainable geotourism and eco-tourism as well as to make Hong Kong a better place to live.

### **Geodiversity, Geoheritage, Geoconservation**

The concepts of “Geodiversity” and “Geoconservation” have become a key focus for nature conservation. This is reflected by various resolutions by the International Union for Conservation of Nature (IUCN) since 2008. Furthermore, in 2021 UNESCO designated 6 October of every year to be the International Geodiversity Day. In Hong Kong, the importance of geoconservation is becoming well appreciated with the designation of Hong Kong UNESCO Global Geopark.

### **Geodiversity and Geoconservation**

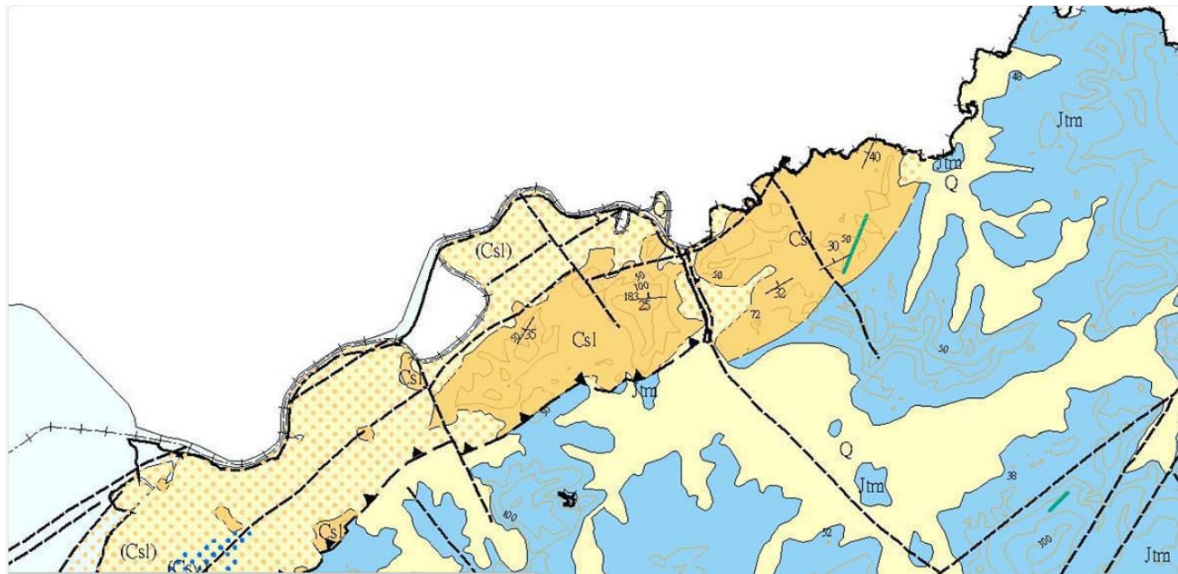
While many advanced countries have now been mapping “Geosites” and increasingly incorporating Geodiversity into their planning process, the concepts of Geodiversity and Geoconservation have not been considered at all in Environmental Impact Assessment (EIA) in Hong Kong. Current Landscape and Visual Impact Assessment (LVIA) is grossly inadequate in both depth and scientific basis in assessing development impacts on geodiversity.



**Geodiversity around the Northern Metropolis**

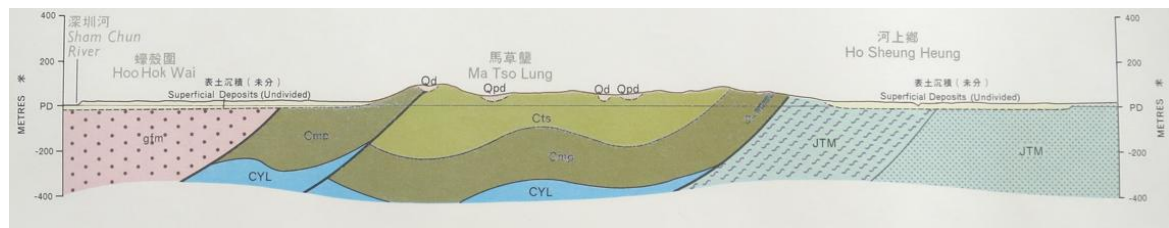
According to geological information from CEDD, the areas around the Northern Metropolis consist of Carboniferous sedimentary formation (Lok Ma Chau Formation/Csl) in the north and Jurassic volcanic formation (Tai Mo Shan formation/Jtm) in the south and east. The two geological formations of different ages are bounded by a Thrust Fault with the older Csl thrust over the younger Jtm.

Lok Ma Chau Formation are all metamorphosed sedimentary rocks which are not common in Hong Kong and representative of the Northern region bordering Shenzhen. Obvious metamorphic features include the conversion of carbonaceous materials to graphite and the schistose foliation. On the other hand, volcanic tuff of the Tai Mo Shan formation has also been metamorphosed due to the tectonic movement of the thrust fault.



Geological Map of the Northern Metropolis (source: CEDD)

Csl Carboniferous metamorphic rocks      Jtm Jurassic Volcanic rocks  
▲▲▲ Reverse fault



Geological Cross-section around Ma Tso Lung (source: CEDD)



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### **Geoconservation and Engineering Geology**

Hong Kong already has a wealth of geological data and inventory being managed by the Civil Engineering and Development Department, but the primary aim of such knowledge is for engineering needs in developments.

In contrast, based on such information while respecting the need for development, Geoconservation aims to:

- Conserve features for their scientific and education value
- Promote the unique geology-landscape character and sense of identity for the Northern Metropolis
- Integrate geodiversity and biodiversity into landscape planning, leisure and geotourism

We always advocate in-situ preservation of prominent features. Where excavation is unavoidable for site formation and road infrastructure, our recommended approach is to integrate exposed rock strata into the landscape for appreciation and education.

### **Impacts on Geodiversity in Recent Years**

In recent years, the natural landscape in the Northern Metropolis and surrounding areas have been subject to destruction due to large-scale site formation. These include:

Sandy Ridge/Sha Ling Columbarium development- Entire hills removed and replaced by incompatible cuttings and embankments forms and accessories. Landscaping with granite setts is incompatible with the unique metamorphic rock formation.





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*Rolling hills of Sandy Ridge and Incompatible site formation design*

Service Reservoirs at Tai Shek Mo, Kwu Tung North - These service reservoirs are constructed on the foothill of Tai Shek Mo with enormous cuttings across the main ridge and spurs of the landmark hill feature of Carboniferous geological formation in the area. These cuttings are in shapes and forms incompatible with the overall landscape. However, as these damages have been realised, the access road and service reservoirs should be better utilised for public access with connectivity in mind.



*Cuttings and site formation at Tai Shek Mo (source: DevB)*



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## **Recommendations**

It would be crucial to understand, promote, and highlight the regional Geodiversity to give the Northern Metropolis a unique identity.

We advocate the following approach for Geoconservation in the Northern Metropolis:

- Conduct a review of geodiversity resources in the area
- Preserve low hills in the area as far as practicable
- Identify any notable outcrops of the Lok Ma Chau formation and the thrust fault
- Preserve important outcrops and features of the volcanic formation and integrate with the overall landscape design
- Formulate better guidance for site formation works to be compatible with the natural landscape
- Integrate geodiversity resources with leisure and geotourism and greenways

In general, we would like to advocate actively bringing the Nature into the development areas, particularly in the design of parks, wetlands, river corridors, greenways, etc. In this respect, we would like to make the following points:

- Emphasis of naturalistic design in place of over-artificialised design
- Systematic use of locally excavated rock materials, i.e. Carboniferous metamorphic rocks and volcanic rocks, for visible landscaping design

We would like to point out that indiscriminate use of standard granite setts and fake rocks for landscaping e.g. planter walls, retaining walls, river channel side walls, amenities, etc. will undoubtedly destroy the local geodiversity characteristics. This point needs to be recognised at an early stage. Our experience is that once design work commences, designers will often just rely on existing standard drawings. In the end, this will lead to just another typical development of Hong Kong.

Finally, we wish to reiterate that both Geodiversity and Biodiversity are important and should be well integrated into the development of the Northern Metropolis.

We look forward to your positive feedback. In addition, we would be pleased to be included in your list of organisations for consultation in the future.

Best regards,

(As signed)

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