# The Four Commandments:

## The Response of Hong Kong SAR to the Impact of Seabed Development on Underwater Cultural Heritage

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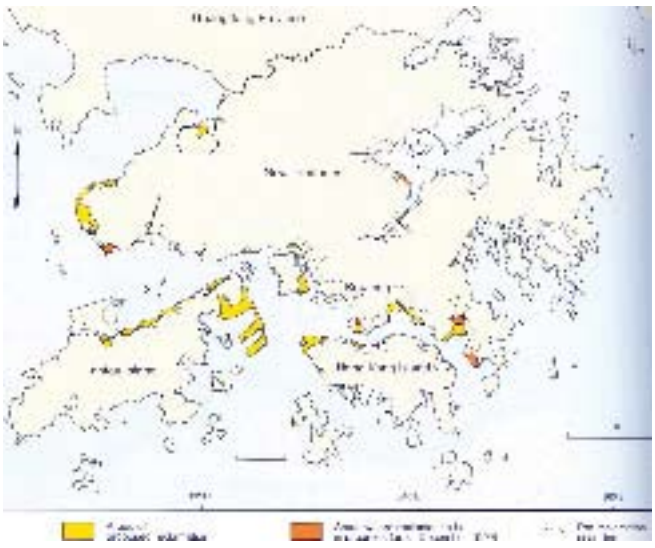
Historically, the impact of seabed development has often been relegated to a position of low priority on the list of threats to underwater cultural heritage. This is largely due to the fact that the more highly preserved underwater sites are generally situated in remote or deep locations where seabed development was less intense. However, threats to underwater cultural heritage via seabed development are increasing due to the rapid increase of urbanisation and expansion of coastal development into such remote areas. The situation is further exacerbated by the irony that the bulk of underwater cultural heritage sites generally occurs in close proximity to coastal urban population centres – centres which have usually been established for centuries, if not millennia, and hence have accumulated a plethora of archaeological sites, varying from maritime related infrastructure to shipwrecks.

Governments, or the agencies that are tasked with the protection of underwater cultural heritage, deal with the impact of seabed development in differing manners ranging from reactive to proactive. The reactive approach involves the development of protection strategies in response to the identification of archaeological sites as they get reported, either directly or indirectly, to the authorities. The effectiveness of this stratagem varies according to the quality of communication networks within local communities and development organisations. This strategy thus has significant flaws, as it relies on incidental observation and goodwill on the part of the sea bed developer. Unexpected archaeological discoveries during construction programmes generally cost money in terms of time lost. Unless there is some financial advantage in publicising a site – or the authorities have been unofficially alerted – such sites are usually severely compromised or destroyed by the construction works. The presence of legislation protecting such sites does not always help, as the developer can claim that the significance or antiquity of the site was not apparent as it was being destroyed. This is especially the case when dealing with seabed development where the impacts can be relatively "invisible."

**Figure 1: Past and proposed reclamations in Hong Kong SAR (Figure 13.2 in J.A. Fyfe, B. Shaw, et al, May 2000, The Quaternary Geology of Hong Kong. Hong Kong Geological Survey)**



Proactive management of underwater cultural heritage in response to seabed development involves engagement at the initial planning stages. This approach enables the construction programme to be planned with full knowledge of the constraints posed by underwater cultural heritage, thereby mitigating losses which may be incurred by the developers through unexpected setbacks and delays. The integration of archaeology and heritage issues at the "ground level" in the development process is consequently more likely to ensure a better outcome with regards to the preservation of underwater cultural heritage.

An excellent example of proactive management of underwater cultural heritage with relation to seabed development is that practised in Hong Kong Special Administrative Region (SAR). It is a model that could well be adapted by other countries. The programme, established three years before the adoption of the UNESCO Convention for the Protection of the Underwater Cultural Heritage, compares well with the Articles and Rules of the Convention.

The Hong Kong we see today, with its skyscrapers and state-of-the-art transport infrastructures, belies the antiquity of the place. Hong Kong's heritage reaches back to 8,000 years ago where Late Neolithic sites have been found on many islands and undeveloped shorelines of the Hong Kong SAR archipelago. These sites are coastal and post date the cessation of the last great sea level rise at 6,000 years ago. It is expected that evidence of earlier human occupation of the Hong Kong region may be found buried under the current seabed.

Hong Kong SAR flanks the western entrance to the Pearl River delta, upon which is sited Guangzhou, one of the world's busiest trading ports for the last 4,000 years. Hong Kong itself straddled the maritime trunk route between southern and northern China. The amount of trade that passed through the Hong Kong archipelago also attracted more than its fair share of piracy and naval warfare. Prior to the establishment of Victoria on Hong Kong Island, the main population centres within Hong Kong SAR were Tuen Mun and Kowloon. Kowloon, and possibly Tung Chung on the island of Lantau, were for a short time Imperial cities hosting the court of the last Song Emperors in the 13th-century.

The heritage of Hong Kong SAR is essentially maritime in character, whether it be through trade, industry, fishing,

piracy, or warfare, and numerous expressions of this rich and ancient cultural diversity can be found on the seabed of the region.

The threats to underwater cultural heritage from seabed development are acute in Hong Kong, possibly more so than most other coastal centres in the world. Hong Kong SAR is situated on a relatively small, mountainous peninsula and equally small, mountainous islands. Population pressures are such that the expansion of the urban sprawl is directed out to sea. Reclamation for housing, commerce and transport infrastructure is a common feature in Hong Kong development.

Underpinning the protection of the underwater cultural heritage of Hong Kong SAR is the Antiquities and Monuments Ordinance (Chapter 53 of the Laws of Hong Kong).

The Antiquities and Monuments Ordinance contains provisions for the protection of cultural heritage which are not dissimilar to other like laws from around the world. For example, cultural objects that pre-date 1800 AD, whether in, on or under land or sea, cannot be removed without a license (Sections 2 and 12).

However, as stated previously, the presence of such laws is not enough to efficiently protect underwater cultural heritage. On their own, these laws are often applied after the act, the act being the discovery of a site during construction. In such circumstances the site may have been already been irretrievably destroyed or severely compromised.

The use of heritage specific laws for the proactive, and therefore more effective, management of underwater cultural heritage requires that they be linked to planning instruments which regulate and monitor the effects of proposed developments. In Hong Kong SAR the relevant planning instrument is the Environmental Impact Assessment Ordinance (Chapter 499).

This Ordinance requires the impacts of a designated project, such as dredging operations, reclamations, etc., on sites of cultural heritage importance be mitigated as part of the project approval process (Schedule 4, Part 6:f). Sites of cultural heritage are defined in the Ordinance as being in accordance with the definitions of 'antiquities' and 'relics' in the Antiquities and Monuments Ordinance.

Annexes 10 and 19 of the Environmental Impact Assessment Technical Memorandum associated with the Environmental Impact Assessment Ordinance give guidelines for assessing impact and significance. The Technical Memorandum identifies a general presumption in favour of the protection and conservation of all sites of cultural heritage and requires impacts on such sites to be kept at a minimum. There is no quantitative standard for assessing the significance of cultural heritage sites, but it is generally accepted that sites of unique archaeological and historical value should be considered highly significant.

Environmental Impact Assessment (EIA) Study Briefs issued by the Environmental Protection Department almost always include the requirement to engage "a qualified marine archaeologist" to "..identify whether there is any possible existence of sites or objects of cultural heritage, for example shipwreck, within any seabed areas that would be affected by the marine works of the Project." The archaeologist is required to adhere to the Guidelines for Marine Archaeological Investigation (MAI) as issued by the Antiquities and Monuments Office. These Guidelines are often appended to the Study Brief.

The MAI guidelines were developed by a British maritime archaeologist Sara Ali (née Draper) who resided in Hong Kong during the 1990s. The Guidelines clearly articulate four tasks — colloquially referred to as the Four Commandments — that have to be followed for the successful undertaking of the MAI. These tasks are as follows:

Task 1 Baseline Review

Task 2 Geophysical Survey

Task 3 Establishing Archaeological Potential

**Figure 2: Kowloon Rock (N. Richards)**

Task 4 Remote Operated Vehicle (ROV)/Visual Diver Survey/Watching Brief

The Baseline Review is in essence a desktop study which examines existing archaeological, historical, geotechnical and hydrographical data associated with the study area. The aim of the exercise is to predict the extent, variety, condition and significance of the underwater cultural heritage within the development envelope.

The Geophysical Survey involves remote sensing techniques such as seismic profiling, side scan sonar and echo sounding. Marine geophysics contractors almost always carry out such surveys during the EIA process for development, principally for project engineers. When the opportunity arises the findings of the Baseline Review (Task 1) are communicated to the marine geophysicists so that they can calibrate their equipment accordingly for the best results. Desired output formats, presentation and basic data interpretation are also requested for Task 3 of the Guidelines.

The Establishing of Archaeological Potential combines the results of Tasks 1 and 2 and identifies, or isolates, areas or anomalies of archaeological potential. The findings of the studies form the basis for the formulation of a strategy for further investigation – Task 4. If no anomalies or areas of archaeological potential are identified then Task 4 is not required.

Task 4, Remote Operated Vehicle (ROV)/Visual Diver Survey/ Watching Brief, allows for a combination of investigation techniques to be employed. The choice of techniques is dependant on the nature of the anomaly or area, whether it is buried or on the seabed surface, and environmental conditions such as high concentration of contaminates, water depth, strong currents or heavy marine traffic. Task 4 also requires that the AMO be contacted immediately if archaeological material is found to seek guidance on its significance and the preparation of appropriate mitigation measures.

The Guidelines for Marine Archaeological Investigation issued by the Antiquities and Monuments Office are founded on solid archaeological principles which conform to the UNESCO Convention for the Protection of Underwater Cultural Heritage.

One of the main strengths of the MAI Guidelines is that they provide developers, project managers and non-heritage related government departments with a clear understanding of the steps involved in the management of underwater cultural heritage at the project development and approval stage. Such proactive engagement is one cornerstone in the effective and successful management of underwater cultural heritage with relation to seabed development.

## Information Sources

Antiquities and Monuments Office website http://www.amo.gov.hk/en/about.php

For details of the Antiquities and Monuments Ordinance (Chapter 53) and the Environmental Impact Assessment Ordinance (Chapter 499):

http://www.legislation.gov.hk/eng/home.htm

For information on the Hong Kong Environmental Protection Department, the interpretations and implementation of the Environmental Impact Assessment Ordinance and the Environmental Impact Assessment Technical Memorandum:

http://www.epd.gov.hk/eia/

**Figure 3: Typical view of Hong Kong waterfront (C. Coroneos)**