

IAEA

Workshop Abstract

Theme: Innovative Approaches of Accelerator Science
and Technology for Sustainable Heritage Management

Date: 13-16 June 2022

Human Skeleton Conservation at Choeng-Ek Genocidal Center in Phnom Penh, Cambodia

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The Choeng-Ek Genocidal Center in Phnom Penh, Cambodia, is one of the 19,733 mass grave sites that have been located (DC-Cam 2004). Choeng Ek was originally a Chinese burial site where Chinese tombs still exist. It was used by the Khmer Rouge as a “killing field” and mass burial site between 1975 and 1979. The site is located about 17 kilometres (11 mi) south of Phnom Penh, Cambodia. Many of the dead were former political prisoners who were kept by the Khmer Rouge in their Tuol Sleng detention center. Exhumations took place in 1980s, with 89 mass graves disinterred of the estimated 129 graves in the vicinity. The remains of 8,985 individuals were exhumed and are now housed within a memorial stupa (Buddhist shrine).

In 2013, the Ministry of Culture and Fine Arts (MoCFA), Municipality of Phnom Penh and Choeng-Ek Genocidal Center proposed to the government for preserving all skeletal remains. In result, a Laboratory of Conservation of Human Skeleton to be installed at Choeng-Ek. The laboratory aims were to preserve any remaining evidences from the recent conflict after four decades.

There are 3 types condition of skeleton decay on this preservation project. The skeleton selected on basis of 40% to 50%, 25% to 40%, and 15% to 25% preservation. It means that the badly preserved bones are consolidated first, then the next preserved, then the best of the preservation. The process of conservation, first of all the bones moved from Stupa and created new Choeng Ek Identification number. So each cranium had a plastic tag with its new “Choeng Ek project number” attached. And the next preservation started with measurement, violent trauma assessment after the bones taken to the Laboratory. This step an “Inventory List” was made for each cranium and everything on cranium were recorded such as the color of bone, the mud on the bone, and the trauma etc. After that the cleaning and consolidation started. The bones were cleaned by spraying with reverse osmosis (purified) water in a pressure spray and consolidating mixture by Acryloid B-72 and Acryloid B-48 mixed with acetone, with added Don Thorn Phong and Ponal chemicals. The last step it was documentation work, the inventory sheets transferred to the Access Database. The information on the Inventory sheet was entered into the Access database for that Choeng Ek Identification number and data sheets were printed as inventory book. Access Database is backed up in 2 ways, one in CD and two in external Hard-drive back-up.

This is the first time in the history of the exhumation of the Choeng Ek gravesites in Cambodia; scientific program of data collection was completed on the group of human remains in the Memorial Stupa. It is a significant achievement and is an example of the capacity of Khmer researchers. The results of this work indicate that 6426 crania and 63,112 other skeletal elements including long bones, vertebrae, pelvis, were consolidated.



Creating Identification number of Cranium



Analyzing Cranium Before Cleaning



Cleaning by hand and spraying with reverse osmosis (purified) water



Drying by Sunshine and by machine



Analyzing Cranium after Cleaning



Cranium Consolidation by special glue component



Finding missing part of cranium for rejoining



Rejoining the missing part by special glue



Database and documentation work

