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## Abstract

This thesis entitled "**Architectural elements and constructional technology of the Jetavana Stupa**", is submitted to the Postgraduate Institute of Archaeology, University of Kelaniya, for a degree of Master of Philosophy in Archaeology.

### **The history of the monument and of archaeological intervention**

The dissertation has ten chapters. The first chapter is an introduction and is in three separate parts. The historical period of the Jetavana Stupa is highlighted in the first part. Here the relationship between the place where the ancient "Theranambaddha Malakaya" or "Isibhumangana" was built and the place where King Mahasen (276-303AC) built the present Jetavana Stupa is discussed. In the first annexure attached therewith containing these details an attempt has been made to identify a building constructed in the third century BC on the location where the Jetavana was constructed at a later date.

The second part of the first chapter is the pre- and post-1890 period. In this section the archaeological work undertaken at the Jetavana Stupa during the British colonial administration and especially after the formation of the Archaeological Department, upto the establishment of the Central Cultural Fund (CCF) in 1980, is discussed.

In the third part of this chapter the archaeological work undertaken at the Jetavana Stupa by the "Jetavana Project" of the CCF after 1981 is detailed. A complete list of archaeologists and the places where they undertook excavations at various parts of the stupa is given.

### **The stupa maluva or "angana pradesaya"**

The second chapter deals with the stupa maluva or the "angana pradesaya". This contains details of the area demarcated by the outer wall surrounding the stupa on all four sides. This includes the (a) the outer wall; (b) the sand terrace; (c) the inner brick wall; (d) the Paved Stone Terrace; and (e) the four entrance porches. All the archaeological work undertaken at the stupa maluva area during a period of one century between 1894 and 1994 is discussed here. Special attention is drawn to expert opinion on all the main architectural features found in this maluva area and their symbolic importance.

In the second annexure a list is attached of all the archaeological finds unearthed from the excavations done in the maluva area. Although such archaeological finds have been discovered from every section of the stupa definite conclusions regarding these cannot be given until the excavators' archaeological reports are published. Therefore this annexure is

attached only as a list with a provisional and inconclusive identification of these artifacts.

### **The basal rings and basal foundation of the stupa**

The third chapter of this thesis contains a discussion of the stupa's basal rings (pesa valalu). The method of construction and the specific technical details of the foundations of the stupa, which is the world's largest brick monument, are discussed in detail in a separate section of this chapter.

### **The clearing of the dome**

The fourth chapter continues a detailed account of how all-overgrown bushes and the excess earth were removed from the stupa surface before the commencement of the restoration work of the dome.

### **The construction of the dome**

The fifth chapter examines the technicalities involved in the construction of the great dome. Once the excavation and removal of earth from the dome surface as described in the fourth chapter was completed, it was possible to identify in the main five methods of construction in the brick laying patterns used in the construction of the dome. Comparison has also been made between the brick laying methods used in the dome of the Jetavana stupa with construction techniques employed in other stupa domes as previously identified by experts. In the basic construction of the interior of the dome an attempt has been made using available data to identify the place where the relic chamber (or chambers) of the stupa was constructed.

### **The excavation of the hataras kotuva**

Close attention has also been paid to the study of the huge walls, each measuring 38.7 feet tall and 84 feet long, of the massive "hataras kotuva" (or cube) standing on the dome of the stupa. This was cracked and facing the danger of imminent collapse. For this very reason a necessary restoration had been carried out between the years 1885 and 1890 and attempts had been made to study the construction pattern inside this historic brick edifice. It was possible during this study to pay special attention to this feature as the present writer was the field archaeologist handling the investigation and repair and conservation of the hataras kotuva under the CCF Jetavana Project.

This necessitated the investigation and identification of the foundation of the ancient hataras kotuva, which was hidden by a 9 ft tall mound of earth on top of the Dome at the base of the hataras kotuva. For this purpose ten excavations on the top of the hataras kotuva and the base of the structure were carried out. They are numbered and shown here from A to E<sub>4</sub>.



In the sixth chapter all these excavations and their results are detailed. Complementing the historical data from these excavations is information gathered during the demolition of the three walls restored between 1885-1890. A significant aspect placed at the end of this chapter is an assessment of all ancient bricks and coins found during these wall demolitions and excavations.

### **The construction of the hataras kotuva**

The seventh chapter of this thesis contains a study of the technical aspects of the construction of the Hataras kotuva. Identification of several main construction stages is available, namely: (a) the basement (adishthana); (b) foundation outer cover; (c) internal structure-1; (d) internal structure-2; (e) surface cover: and (f) surface lime plaster. All the data obtained from the excavations and wall demolitions discussed in the sixth chapter are classified according to the construction stages identified above.

### **The devata kotuva and the pinnacle**

A detailed study of various ideas, theories and opinions on the devata kotuva and the pinnacle and their ancient building techniques is given in the eighth chapter. On the basis of these expert opinions an identification of the architectural features seen in these particular sections of the stupa is presented here. Also a comparison of these architectural features with such other features used in other stupas has also been attempted.

### **The vahalkadas**

The ninth chapter consists of a description and discussion of the architectural elements used in the 'frontispieces' or vahalkadas (adimukkha, ayaka) as the last of several consecutive architectural features of the Jetavana Stupa. Since a vahalkada is added to a stupa after the completion of the main structure and it is an addition to the main building, a detailed study of this is done separately in the final section. Identification of the vahalkada has been done on the basis of expert opinions on it. Using archaeological data found at this Stupa it has been argued here that the Jetavana vahalkada was at the zenith of the architectural evolution of vahalkada construction in early times. Historical evidence from the chronicles and archaeological data from field studies have been used here to determine the period of construction of the Jetavana vahalkadas.

### **Concluding observations**

Concluding observations form the tenth and final chapter of this thesis. A detailed discussion of six important topics architectural features of the Stupa, which have not been discussed in the chapters, has been addressed here. These six features are numbered 10.1 to 10.6 consecutively, as follows: (a) 10.1-The last historical restoration of the Jetavana Stupa in the 12th century; (b) 10.2 – the 1885-1890 restoration; (c) 10.3 - the architecture of the hataras kotuva; (d) 10.4 - the colour schemes of the

hataras kotuva; (e) 10.5 - stone pillar stumps on the dome; (f) 10.6 - the height of the Jetavana Stupa.

The third annexure is related to the topic numbered 10.2 under the heading "1885-1890 restoration". Also included here are the subsequent recommendations of eminent international experts on archaeology and architecture who were associated with the Jetavana Stupa restoration work under the CCF. The regnal years of Sri Lankan rulers obtained from "A Concise History of Ceylon" edited by C.W. Nicholas and S. Paranavitana (Colombo: University of Ceylon Press, 1963) is attached at the conclusion of this thesis as its fourth annexure.

There are 502 pages, 213 photographs in both black and white and colour and 69 plans in support of evidence discussed in these ten chapters and as well as 30 sketches.