

ARCHITECTURE OF AKSUM

There are no remaining complete examples of Aksumite architecture above ground level; so that it is from the six decorated stelae together with a number of tombs and foundations of buildings that one must attempt to analyse their building construction.

The Aksumites were master masons and with limited tools they cut the hard blue ^{anorthoclase} ~~monolithic~~ granite, slicing it out of the quarries at Wushato Gobo with wooden wedges and hauling the large pieces along the valley floor to be erected in any of the stelae grounds. They also shaped the granite to build in ashlar (dressed) stonework, without any mortar joints, as can be seen in the recently uncovered tomb in the Road (Chittick 1973). They used the same technique to cut limestone and sandstone which can still be seen in a number of indented foundations, as corner stones, (Maryam Tsion excavations - Contensen) and (Maryam Tehot, Agame).

In addition they incorporated rock wherever it was found (Kaleb's tomb).

The Aksumites soon discovered that their walls were unstable and to rectify their lack of cohesion, due to use of only earth mortar, they indented their walls in plan, which allowed for expansion and contraction due to changes in climate and stepped the foundations at a cubic in height. (46 cms = the length of a man's fore-arm to the tip of his fingers). At each step, two slivers of stone, projected over the course below and the next stepped back $\frac{2}{3}$ cms. This weathering helped to tie the infilling. There could be 2, 3, 4, 5 or even 6, 7 such steps depending upon the size of the super structure. (Maryam Tsion, Aksum and many examples).

Between the dressed corner stones and at all indentations too, the walls were built of small rough stones and packed or infilled with earth. On rare occasions the stones were shaped and laid in courses.

roughly?

The foundations of the Palaces, as excavated by D.A.E. showed four corners projecting and square on plan: Christian churches 6th Century and later took the palace plan and elongated it (Cherkos. Agula), forming a three aisled church with at least three bays to the chancel arch, three chambers beyond, two of which had direct access from the nave of the church, one usually had access only from the sanctuary. On rare occasions, as at Debre Damo ^{access for} (men only), there were stairs to an upper floor over the side aisles. The plan pattern has some connection with that used by the early Syrian Christian Church which was destroyed at the end of the 7th Century A.D. but whose influence filtered down to Aksum via the Cenobite tradition of the desert monasteries in Egypt.

If we look very carefully at the six decorated stelae, they depict a form of construction idiosyncratic to this area. At the ground level there is a false door, in a frame, whose members (once in wood) project in all four corners - sometimes the lintel is carved with dentils. The side walls are represented as if they were constructed of small stones in earth mortar and tied in with large scantlings of wood, which themselves are held in position by cross members of wood housed over the horizontal ties. ^{There are no nails used in this construction.} These cross members project on the face of the stele in a row like "monkey heads". Each of the six decorated stele is different in detail. No. 1, the giant stele, starts by a series of triple framed windows over the doorway and is indented on all four sides. It consists of eleven storeys whose base and apex are missing. The top two storeys have double windows depicted as if they had carved lattice openings. The whole stele gently diminishes in plan section to the apex.

No. 2 stele was in pieces and renovated by the Italians and re-erected in Rome not far from the Colliseum; No. 3 is still standing in position, although the axial stairs are modern, both front and back base plates are housed around the stele. check

No. 4 lies broken by Ende Yesus churchyard with the remains of its great base plates almost in position. These are housed round the stele and rested upon vertical dressed blocks of granite and were packed with small stones. The apex of No. 4 is now erected in the Ezana gardens and the intermediate piece,

called the Stele of the Lances, lies in Maryam Tsion churchyard (men only).

No. 5 is a bastard stele started by being carved on the reverse, probably broke and was recarved on the front, now lies in the river.

No. 6, a charming, three storeyed stele lies just beyond to the East, the front base plate was found by the B.I.E.A. (Chittick) in 1973, lying buried in the ground. It has one shallow kyrie shell carved in the centre.

kyrie
Architecture is derived from the use of available building materials. In the Aksumite Civilisation and the years since then, the materials have remained much the same, except that wood in large scantlings is no longer available. So, too, tradition has continued to repeat the method of building, which is fortunate as there are still rare mediæval wooden built churches to compare with the isolated Aksumite examples.

Within the buildings the Aksumites used columns, often on granite chamfered shafts with simple bases, but the capitals might have been of many steps, or a cube with splayed corners or even a floriated capital (Aksum).

The roofs, none of which survive, would probably have been made up of cross members of wood and thatch. Occasionally large rainwater shootings were utilised. We can see from the rare remaining examples, Debre Damo and Asmara, that some of the roofs were decorated with panels depicting the flora and fauna, carved in low relief on the wooden panels.

Arch construction, used by the Romans to such good effect, was rarely used by the Aksumites, although with the uncovering of a brick arched tunnel and the Tomb with a brick arch, as well as the suggested use of wooden carved lattice window on Stele No. 4, it must now be considered as part of their building technique.

Although there was plenty of limestone, sandstone and wood, ^{where} to create lime and cement, there are few examples of its use - Maryam Nazaret and Cherkos Agula.

It is surely only due to the use of building materials of great lasting value, such as the granite blocks of stone, sandstone and limestone, that there are any examples of buildings left after nearly two millenium. The climate with the driving monsoon rains, resulting in flash storms and earth tremors, as

well as the isolation of these mountain ranges since the fall of the Aksumite civilization, and the subsequent attitude that the repair of old buildings was unimportant, led to the re-use of any dressed stone in a more modern building and as well as the tradition that each man built anew his house. Their method of construction of loose stones in earth mortar tied in with wood and the framing of all openings all round, shows how they understood the vagaries of their building construction.

Ruth Plant .

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