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Tele: +92-51-2601066, Fax: +92-51-9248127  
E-mail: [taxilainstitute@yahoo.com](mailto:taxilainstitute@yahoo.com)

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## **Conservation and Studies at Gumbat-Balo Kale Site (Tahsil Barikot, District Swat, Pakistan)**

**Michael W. Meister  
Luca M. Olivieri**

### **Abstract**

*Gumbat-Balo Kale is a well-known site in Gandharan archaeology. First visited by Sir Aurel Stein in 1926, the site was hastily excavated by Ph. Barger and E. Wright in 1938. The conditions of the main monument, a unique double-domed Buddhist shrine, deteriorated over the time. Recently, the ACT-Field School Project carried out excavation and conservation activities at the site. This paper addresses the architectural features and the chronology of the shrine, along with an overview of the archaeological fieldwork.*

### **Background**

The shrine of Gumbat-Balo Kale in the tributary valley of Kandak, is one of the most interesting and best preserved ancient monuments of the Swat valley. Labeled as AMSV 139 in the Archaeological Map of the Swat Valley (Olivieri, Vidale et al. 2006), it was first visited and described by Aurel Stein (1930: 12-13, figs. 6-7, pl. 4) and Evert Barger and Ph. Wright (1941). The monument was studied in the 60s by Domenico Faccenna (Faccenna 2006: figs. 10-11; Faccenna & Spagnesi, in press). Abdur Rehman (Rehman 1984) suggested a relation to later temple constructions in the Salt Range and proposed a possible date for the monument of 8<sup>th</sup>-9<sup>th</sup> century. Faccenna (2006) associated this monument with the excavated ruins of the “Great Vihara” at the N entrance of Butkara I sacred area, thus indirectly proposing an early-1<sup>st</sup> century CE chronology for the Gumbat-Balo Kale shrine.

### **The Monument**

This Buddhist shrine is a vihara-category chapel with a square plan and enclosed ambulatory set on a high podium (Meister 2011.1). The monument’s entrance lies to the E. The external walls are separated from the inner cella by a vaulted corridor with windows (one each on S, W, and N). This ambulatory corridor is covered by a sloping lower roof.

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The square sanctum chamber rises through a cylindrical necking (with slit windows) above the ambulatory roof, and is covered by an internal domed ceiling, a shallow chamber above. The external ovate dome is thus actually formed by a superimposed double vaulting, a major architectural peculiarity of the monument (Figs. 1.b, 13, 14) (see Harle 1994: 522, n. 3).

Whether the sanctum was supposed to host relics in a stupa-reliquary, as indirectly proposed by Behrendt (2006: 87), or a large votive stele or statue, as suggested by Stein and by Faccenna for the associated “Great Vihara” of Butkara I (2006: 191), is not clear.

The only existing comparison in the area is vihara F of Abbasaheb-china (AMSV 208; Tucci 1958: fig. 33; Spagnesi 2006: fig. 11). This somewhat smaller vihara has the same profile as Gumbat-Balo Kale, with a tall ovate central tower and lower curved roof, but with no interior ambulatory. The square sanctum was roofed by a hemispherical ceiling within the taller ovate tower.

The Gumbat-Balo Kale monument rises at the center of an artificial terrace (approx. 5000 sq. m), supported on the N by a stepped retaining wall (l. c. 54 m; Figs. 17, 18, 27). According to Stein, a major stupa was nearby on the NE corner of the shrine terrace, while minor stupas were along the S portion of the terrace, where also “massive walls” — possibly the remains of a monastery — were at that time discernible (Stein 1930: 13-14). The site, at the time of Stein’s visit, was already heavily looted by treasure-hunters from the village of Nal (Malakand Agency), a place still famous in the region for the “archaeological” skill of its villagers. According to Barger and Wright, who hastily excavated the area in 1938, there were stupas on both N and S sides of the shrine: a major stupa (w. c. 31’) was discovered on the N (Barger & Wright 1941: 16-18). During the excavations of the N stupa and clearance of the site many sculptural pieces were discovered: 40 were selected and brought to England. 16 of them are now in the Victoria and Albert Museum in London (Ackermann 1975)<sup>1</sup>. According to Barger and Wright, the quality and quantity of the sculptural decoration found at Gumbat was higher than the average found in the

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<sup>1</sup> Among the many interesting pieces recovered at Gumbat was a metal bell (Barger & Wright 1941: 18, Pl. VIII, 3). A rough trench excavated by the two explorers was localized during our excavations in 2011 as Pit 26 (see fn. 7).

area, a fact we confirmed by the recovery in 2011 of more than one hundred pieces — even after nearly a century of looting — just from the surface of the shrine terrace. During a more detailed survey carried out in Autumn 2000 two terraces were documented: “The upper one is still visible today and, in addition to the *vihāra*, houses also the remains of three *stūpas*, two of which are large (about 10.00 [m]). Traces of closed chambers may be identified in the corners of the outer walls. Here, more than elsewhere, a substantial presence of pottery has been recorded and sampled. The pottery was probably due to the presence of two dwelling units to the S and W of the complex, each about 3,000 m<sup>2</sup> in area” (Olivieri, Vidale et al. 2006: 108)<sup>2</sup>.

Judging from the photographs published by Stein, the general condition of monuments at Gumbat-Balo Kale had not changed much since 1929 (Figs. 3, 2, 22): most of the masonry structures related to the eastern front — corners, front lower roof, and parts of the aisles — had already collapsed, exposing part of the corridor and inner cell (Figs. 2, 4). Severe cracks were already visible in 1929 along the external dome, but in the decade following 2000 the monument’s physical condition worsened considerably. Cracks along the dome became longer and wider, the corridor partly inaccessible, and the architrave of the inner chamber’s entrance had collapsed (Fig. 5). After a survey conducted in September 2010, the structural health of the building was considered at heavy risk, and a plan of intervention was drawn up together with the Army authorities by LMO.

Stein had made measured sketches of the ground plan and section of the monument, published at the back of his report, which can be compared with an elevation and section prepared for the Italian Mission in 1964. Height discrepancies appear, however, when the widths of both sectional drawings are correlated with Stein’s measured ground plan (Fig. 1.a)<sup>3</sup>. Reducing the height of the upper dome in the

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<sup>2</sup> Actually the terraces are three: the shrine terrace (middle terrace), the upper terrace with traces of a main stupa and monastery S of the latter, a lower terrace to the E. To the W, both the upper and middle terrace are flanked by the course of a rivulet. On the other bank, we documented ancient quarry areas and isolated monastic buildings. For other ruins in the area, see Olivieri, Vidale et al. 2006.

<sup>3</sup> Another weak point in the Stein documentation is the representation of the inner floor/ground level, that absolutely does not correspond to the reality: a trial trench dug in April 2012 actually confirmed that the inner floor of the cella is at the same level of

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1964 section would make the inner dome more nearly hemispherical and the height and profile more closely fit that of Stein's sketched elevation and photographic documentation (Figs. 1.a, 3, 22). This discrepancy may have come from whether total height of the monument in 1964 drawing included what were recorded as 'reconstructed' vs. 'conserved' heights (Faccenna 2006). Stein in 1929 was not aware that there was an upper constructional chamber in the tower, used perhaps to reduce mass and increase height (Figs. 1.a, b, 13). The 1964 elevation proposed an entry portico (or stairway's landing) and 16-step stairway (Faccenna 2006: fig. 10 edited out in Fig. 1.a); the existence of the landing was eventually confirmed after the excavation of the surviving parts of the stairway (Figs. 18, 21).

MWM and LMO

**Recent Conservation Activities**

LMO, in his position as co-director of the Italian Archaeological Mission in Pakistan, was given the responsibility of the "Archaeology, Community, Tourism — Field School" (ACT) project by IsIAO. This project, presented in 2008 to the Pakistan-Italian Debt Swap Program Commission by IsIAO and by then its counterpart in Pakistan, the Department of Archaeology and Museums, Government of Pakistan, was eventually approved in September 2010. Among the project's several goals, the conservation of the Gumbat monument (labeled "Site 8" in the project's documents) was considered. After the devolution of the Federal Ministry of Culture the project is currently implemented by the (formerly IsIAO) Italian Archaeological Mission and the Directorate of Archaeology and Museums, Government of Kkhyber-Pakhtunkhwa, under the vigilance of the Department of Archaeology and Museums, Ministry of National Heritage and Integration.

From February to June 2011, in collaboration with the Army authorities, with the help of the local community, and the unvaluable support of Zain-ul-Wahab of the Hazara University, Department of Conservation Studies, ACT project has supported and guided restoration activity at Gumbat-Balo Kale according to the standard of the Italian Mission's "quick intervention" guidelines.

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the landing of the stairway, as indicated in the 1964 drawing.

The typology of the intervention focused on cleaning and conservative reconstruction, dealing particularly with the filling of all the structural parts that were at risk of collapse. Therefore: a) the vertical profile of the external walls and related lower roof was reconstructed in order to strengthen the overall structure (Figs. 6, 7, 18, 19, 21, 23); b) the inner cell door's architrave and upper masonry wall were reconstructed for the same purpose (Fig. 23); c) the podium's missing parts (lateral and frontal) were reconstructed, both to support the building's elevation and to indicate the possible extension of the original plan (Figs. 18, 21, 23); d) a new access stairway was built on the E, in place of the original one, which was missing in order to provide current access to the monument (Fig. 23)<sup>4</sup>; e) both the inner cell and corridor were provided with new paved floors to ease the visit (Figs. 9-12); f) cross-corner wood pieces that had supported construction of the interior dome — indicated by three surviving examples (SW beams: Fig. 16), a rare case in Gandhara — were replaced where these were missing (SE, NW, NE; Fig. 14)<sup>5</sup>; g) both the inner and outer surfaces of the dome were cleaned (Fig. 13); h) as was the N retaining wall.

The standard guidelines provided for the preliminary conservation were basically related to two simple but mandatory aspects: A) new/reconstructed portions of masonry wall should be distinguishable from old/existing ones by means of offsets; B) use of cement should be reduced in favor of dry masonry with use of clay mortar.

Work started in February 2011 under the responsibility of the

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<sup>4</sup> This activity was completed in November, after we reached the basis of the stairway's podium. The stairway perfectly matches a sculptural model (Fig. 25) pointed to by both Foucher and Faccenna (Foucher 1905-51, I: fig. 41; Faccenna 2006).

<sup>5</sup> During the conservation activity LMO took sample of wood from the upper lintel of the S clerestory window and three preserved corner beams (SW) in Gumbat's interior for xilotoxic and AMS-C14 analysis. After the xilotoxic analysis, carried out in Italy by G. Galotta of the ISCR (Istituto Superiore per la Conservazione e per il Restauro, Rome) and by DEISTAF (Scienze e Tecnologie Ambientali – Forestali, University of Florence), the four wooden elements were determined to be from *acacia modesta* (email communication by Giulia Galotta, December 13, 2012).

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Army authorities. At the end of the same month LMO, while visiting the site, noticed that part of the work already finished (referring to point c and aspect A above) did not match the standard guidelines (new stonework was not sufficiently distinguished from the old; Fig. 8), and a quick training course for local workers was arranged.

During the conservation work 110 sculptural fragments were collected from the terrace's surface and numbered for further study. All work was completed under supervision of the ACT field officers in June 2011 and involved 24 local workers/trainees.

In order to ease both the protection and the visibility of the monument the following actions were also executed: 1) construction of a pedestrian access path from the main Barikot-Kandak road to the monument (approx. 1 km); 2) installation of two information boards, one near the main road and a second one to the right of the stairway to the monument; 3) employment of three permanent chowkidars.

In November 2011 an excavation campaign to focus on the shrine's larger terrace was launched, aimed at documenting the other monuments; the excavation involved 41 local trainees/workers. The trench (50x7m), centered on the shrine, is oriented N-S and it is limited respectively by the N retaining wall and by the limit with the upper terrace: the trench was labeled GBK 1. Excavation lasted 4 weeks and was carried out by the ACT project in collaboration with faculty members and students of the Hazara University, Department of Archaeology, School of Cultural Heritage and Creative Technologies, and of the Taxila Institute of the Quaid-e Azam University (Meister, Olivieri and Vidale, in press; Olivieri and Shah Nazar, eds., in press).

LMO

### **Architectural Analysis**

The monument at Gumbat-Balo Kale is a Buddhist chapel (vihara), set within a large complex, with few parallels from other sites in Swat or Gandhara. Faccenna (Faccenna 2006) suggested it could provide a model for the ruined "Great Vihara" excavated at Butkara I. Above we have cited the vihara F of Abbasahab-china (Tucci 1958: fig. 33; Spagnesi 2006: fig. 11) as a parallel because of its square sanctum, crowned by a hemispherical ceiling set within an ovate tower, with a secondary external curved roof (without, however, an internal

circumambulatory corridor as at Gumbat-Balo Kale). We know of at least two sculptural reliefs — from Mardan (Fig. 25) and Ranigat (Faccenna 2001: pl. 158e) — that represent somewhat analogous viharas, the first with a semicircular dome, corner towers, and attending devotees, the second with a lower roof and taller tower. A small clay model of a circular chapel found at Pir Pai in Gandhara (Nasim Khan 2009: Pls. 18.1, 18.2) represents a sanctum with a hemispherical interior ceiling set within a taller ovate cap, but lacking a lower roof.

Gumbat-Balo Kale's mouldings, ashlar masonry, sloping window slits, and interior dome — constructed above a cantilevered stone ring and corner beams, with no squinches — seem compatible with the Gandharan constructional techniques analyzed and documented by Foucher many years ago (Foucher 1905-51, I). The tall, narrow, vaulted ambulatory corridors, however, (Figs. 9-12) may well have set a local precedent for those used around the upper domed chambers in Udi-Shahi temples built in Swat and the Salt Range in the 10th century (Rehman 1984; Meister 2010, 2011.1, 2011.2) [*Note: MWM follows here the terminology proposed by Abdur Rehman (2002) for the Hindu-Shahi dynasty*].

Conservation of the monument and restoration of the profile of the lower roof and ambulatory walls (Figs. 18, 21, 23) have made the formulation of the vihara much more clearly articulated than before (Figs. 2, 4). As conserved, it is still a truncated monument, however; fragmentary remains of the missing E ambulatory aisle and its roofing are still visible (Figs. 4, 23). It is now possible, with some assurance, for me to reconstruct the frontal aspect of the original structure photographically (Fig. 24), providing a closer parallel to the two Gandharan sculptural models previously proposed (Fig. 25), save in the heightened, ovate, double-chambered elevation of its outer dome (Figs. 1-3).

MWM

### **Chronology**

A possible chronology for the Gumbat-Balo Kale shrine was first proposed by E. Barger and Ph. Wright (1941) who, on the basis of their studies of the masonry technique, suggested a date of 2<sup>nd</sup> Century CE

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(ibid.: 35). Afterwards, despite its unique features and survival, the monument has been neglected by most scholars, with the exception of H.C. Ackermann, D. Faccenna, H.G. Franz (Franz 1984) and Abdur Rahman. Ackermann studied 16 reliefs from Gumbat: 6 he attributed to an “early Hellenistic group” he dated around mid-1<sup>st</sup> century CE, and 4 to a “late Hellenistic group” he dated to the 2<sup>nd</sup> half of the 1<sup>st</sup> century CE (Ackermann 1975: 19, 23). Faccenna’s idea was that the Gumbat shrine could be linked to the so-called “Great Vihara” of Butkara I (i.e. Great Stupa Phase 3: c. 20 CE) and therefore to an early 1<sup>st</sup>-century chronology (Faccenna 2006: 189-190, fn. 4); Abdur Rahman was instead inclined to a later chronology on the basis of elements of composition and construction — narrow vaulted ambulatory aisles, etc. — that he found in later Hindu temples. MM’s assessment of these common elements, in comparison with a structure such as the 10<sup>th</sup>-century ‘Gumbat’, Talash Valley, Dir, (Meister 2010) was rather that “the earlier tradition may have contributed to the unique configuration of later temples in the region”.

At the end of the excavations (see Figs. 24 and 25), we can propose a preliminary absolute chronology. The building periods of the excavated area can be summarized as follows:

Period I: Northern Neolithic? In a deep testing trench below the Buddhist platform (GBK N), we found the edge of an older platform, facing a layer made of fine silt and clay. The platform was constructed on the original bedrock. In the layer we found Northern Neolithic potsherds, hypothetically dated to the 3<sup>rd</sup>-2<sup>nd</sup> Millennia BCE.

Period II: construction phase of the stupa-terrace. In this period the N retaining wall as well as the filling of the terrace were completed. In one of the various layers, we found a fragment of Iron Age pottery (dish-on-stand).

Period III: it corresponds to the first stone floor of the stupa-terrace (layer 55): in this period the monuments 3, 5, 13 and the central shrine were built.

One hypothesis suggests two building phases for this double dome, the chronology of Phase 1 = Period III suggested by the Conventional 14C age of the wooden lintel of the upper South clerestory window (1840 +/-30 BP = 110 CE; see Table 1), and of a second phase of re-building in Phase 2 = Period IV inferred from the

Conventional 14C ages 1760/1790/1800 BP = mid-3<sup>rd</sup> century CE of three wooden planks used as support below the SE corner of the inner dome. This wooden lintel, however, could have been a valuable older beam, preserved and reused, and the 2 Sigma calibrated range for 14C dating of this beam (90-240 CE) does overlap those of the 3 planks early in the 3<sup>rd</sup> century. Anyhow, it seems clear that the first half of 2<sup>nd</sup> century CE is likely to be the *terminus post quem* for the assemblage of the beam system and construction of the shrine's dome. The construction of the monument seems therefore closer to the date initially suggested by Barger and Wright and later on proposed by Faccenna and Ackermann.

The Period III stupa-terrace (lower) is characterized by 3 large buildings aligned with their staircases facing E (from S: building 3, shrine and building 13). The excavated area corresponds only to 1/3 of the ancient terrace, but, given its central location, it may give us a rough idea of the original outlook of a monumental terrace visually marked by 3 major monuments <sup>6</sup>.

Period IV: corresponding to the second stone floor (layer 47), the one, which is visible over the entire excavated surface. In this period were built the majority of the minor cultic monuments crowding the space around the three major buildings including a little apsidal

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<sup>6</sup> This feature resembles very much the Nimogram site stupa-terrace. Here the excavations documented 3 square major monuments, aligned and facing WSW; from N: a stupa-chapel (I), a stupa (II), a vihara (III).

Excluding the central shrine, what can we say about the features of the two other major buildings of Gumbat-Balo Kale? Building 3 is rectangular and building 13 is square in plan; unfortunately both are barely preserved to the height of their first storey or podium, so we don't have material elements to determine whether they were stupas or vihara-class monuments. In front of the building 3 was documented a small jars inserted in the center of a circular hole cut out of the floor 47, just in front of the staircase. This association between viharas, stairways and offer jars had been documented in other Buddhist sacred areas. At Butkara I, two jares were documented aside the stairway (respectively at its right and left) of the "Great Vihara" (Faccenna 1981-85: 158, fn.3, pls. 353a-b). At Saidu Sharif I, two jares (S 2354 and 2355) were found in a respectively at the right and left of the front of Vihara [35] 28 (G. Di Marco in Faccenna 1995: 264-269, figs. 88-91). However the association is not univocal. Offering vessels are sometime found near minor stupas. and in front of major stupas (as in the case of the green schist basin in front of the Stupa 1 at Panr I; Faccenna et al. 1993:154).

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monument (a chapel?), whose lay-out is revealed by a negative outline of the paving slabs. Maybe in this Period a reconstruction intervention in the central shrine occurred (=Phase 2, see above).

Period V: the stone floor (layer 91) was raised a few cm in correspondence to monument 31.

Period VI: abandonment of the site. On the upper layer of the filling, before it was sealed by a layer of fine gravel and by the stone floor, we dug a pit filled with ash, charcoal and food waste. The samples of charcoal sent to the CEDAD, University of Salento for 14C analysis, gave a 11<sup>th</sup> century chronology, that might be considered as the last traces of human presence left when the stupa terrace still visible.

The base of the shrine was finished with white-painted stucco, while the exterior of the ovate dome bears traces of rough thick red-colored plastering. An analysis of plaster samples is in progress with the Istituto Superiore per la Conservazione e il Restauro (ISCR), Rome. Almost all the stupa bases and cornices also show traces of complex painted stucco decoration. White, red and blue in that order are the dominant colors.

During the fieldwork, 227 fragments of sculptures and carved schist cornices, panels and slabs were recovered from the ploughed surface and several hundreds were recovered abandoned by the treasure hunters in the filling of their pits. In total 426 fragments have been registered so far. The rest, presently stored in the ACT store in Saidu Sharif, will be registered in the next seasons. Among the registered finds, 98 major decorative and figurative reliefs were inventoried and handed over to the Directorate. Some of them show close affinities with the pieces collected on the spot by Barger and Wright in 1938<sup>7</sup>.

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<sup>7</sup> The fragments GBK 4, 5 and 6, found near stupa 3 apparently belong to the same frieze of I.M. 89-1939 (Victoria and Albert Museum; Ackermann 1975: pl. Vc) and the fragment GBK 7 (surface), to the frieze of I.M. 88-1939 (ibid.: pl. Vb); GBK 19 (surface) clearly belongs to a monument similar to those of I.M. 111-1939 (ibid.: pls. XXIIa-b); GBK 22 (SE of the shrine), is similar to I.M. 79-1939 (ibid.: pls. XIIb); GBK 24, 28, 30 and 31 have the same features of the frieze I.M. 86 & A-1939 (ibid.: pls. Va). In this case it is worth noticing that GBK 24 and 31 were found near stupa 3, and belong to the same frieze; GBK 28, on the surface; GBK 30 near stupa 35 and 37 at the bottom of the pit 26. Pit 26 corresponds to the trench opened by Barger and Wright N of the stupa 13 (Barger & Wright 1941: 17). Evidently this decoration was

**CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS**

(Variables: C13/C12=-25.1;lab. mult=1)

Laboratory number: **Beta-304223**

Conventional radiocarbon age: **1840±30 BP**

2 Sigma calibrated result: **Cal AD 90 to 240 (Cal BP 1860 to 1710)**  
(95% probability)

Intercept data

Intercept of radiocarbon age  
with calibration curve: **Cal AD 140 (Cal BP 1810)**

1 Sigma calibrated result: **Cal AD 130 to 230 (Cal BP 1820 to 1720)**  
(68% probability)

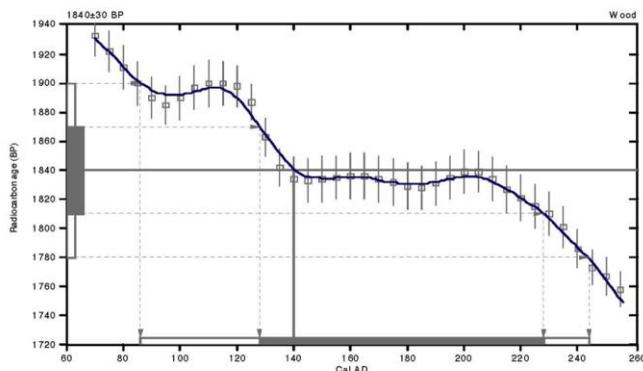


Table 1

LMO and MWM

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employed at a certain moment of the sacred area's life in more than one building.

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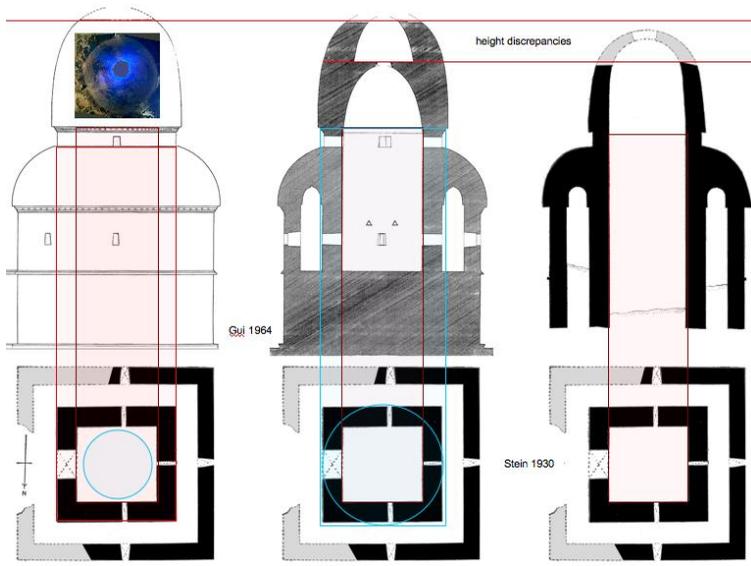


Fig. 1.a  
(Drawing by MM)

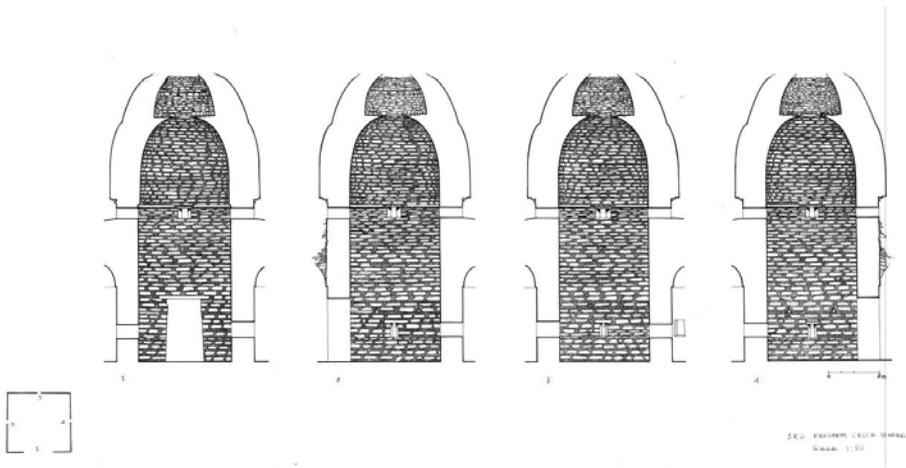


Fig. 1.b  
(Drawing by F. Martore)



Fig. 2  
(After Stein 1930)



Fig. 3



Fig. 4

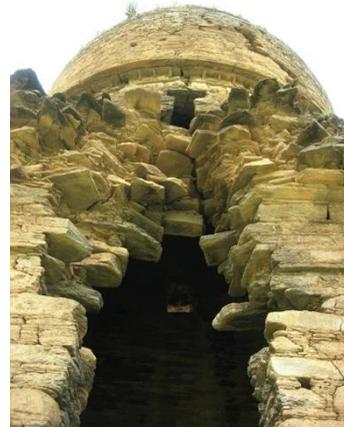


Fig. 5

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Fig. 6



Fig. 7



Fig. 8



Fig. 9



Fig. 10



Fig. 11



Fig. 12

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Fig. 13



Fig. 14



Fig. 15



Fig. 16

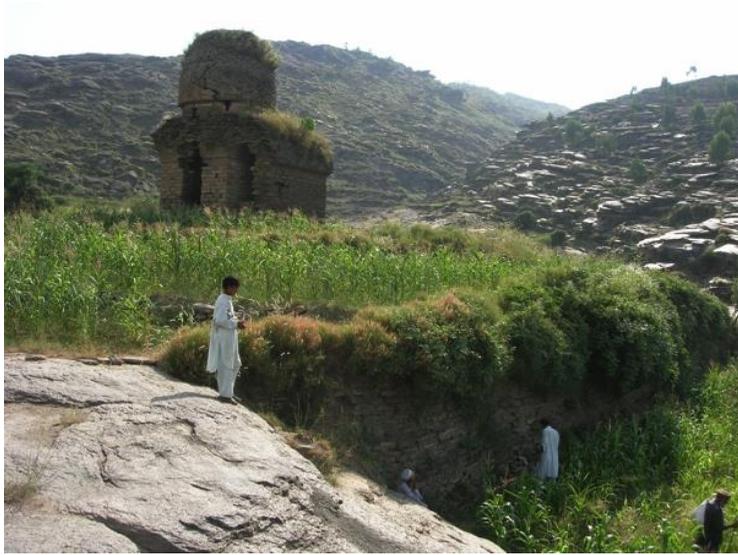


Fig. 17



Fig. 18

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Fig. 19



Fig. 20



Fig. 21



Fig. 22  
(After Stein 1930)

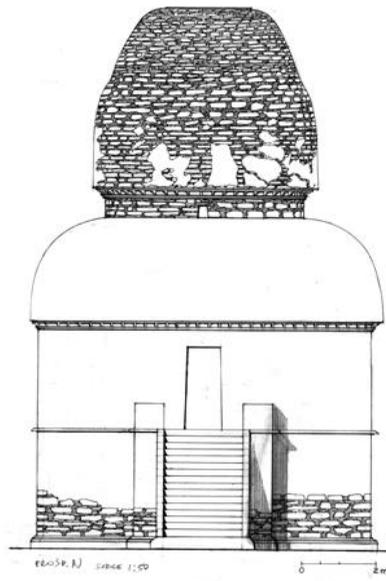


Fig. 23  
(Drawing by F. Martore)

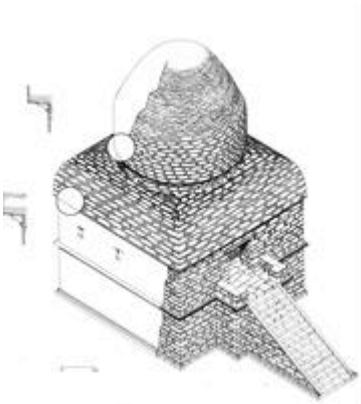


Fig. 24  
(Drawing by F. Martore)



Fig. 25  
(After Spagnesi 2006)

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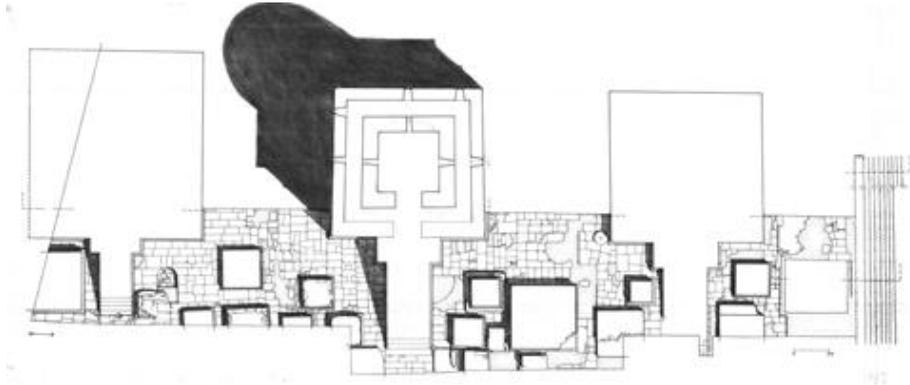


Fig. 26  
(Drawing by F. Martore)

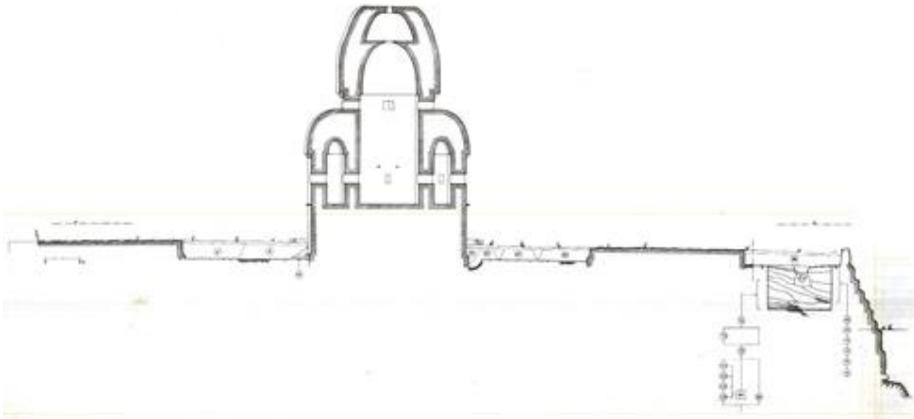


Fig. 27  
(Drawing by F. Martore)