

## Report on Salvaging Rock Fragments, 2004

At the Western Buddha the rubble heap resulting from the explosion of the Buddha had a maximum height of eight metres, an average width of 22 metres and a depth of 16 metres. This equalled a volume of c. 1400 m<sup>3</sup>, which – if one reckons that one wheel barrow can take 50 l – would amount to 28,000 wheel barrow loads. The entire original substance of the Western Buddha, from sand to fist-size stones up to rocks weighing between 80 and 100 tons, had to be recovered from the niche, then documented and protected against the weather. Fastening a protective net of wire cloth on the niche's back wall protected to a certain extent against rockfall during the work in the niche.

Only the surface of the rubble heap had been cleared of landmines. More unexploded ammunition, such as anti-tank mines and aircraft bombs, had to be expected in the rubble. The search for mines in the Buddha rubble, which was necessary every day, was carried out by professional de-mining experts of UNMACA. The de-miners instructed the Afghan workers how to handle metallic finds properly and took care of the appropriate removal of live ammunition. This careful handling with metal and mine detection sometimes led to considerable delays in the excavation work.



Niche of the Western Buddha with rubble heap before beginning of the salvage work in July 2004



The construction of the shelters begins.

### *Salvage and classification of rock fragments*

After on-site inspection the stone material was divided into two main categories. Conglomerates with mostly red colouring and of differing grain size (from sand to gravel graining) alternate with reddish sandstone-like layers (silt). The silt stone appears very stable, but just like the coarser conglomerate it is extremely moisture-sensitive and erodes very quickly into salty, brittle clay layers.

All fragments were photographed both at the find spot and in the depot and then described on a data sheet. For the salvaging of the rock fragments at the Great Buddha we differentiated between fragments with visible traces of the statue and fragments without traces of the original stone surface. For the first category there were different identifying features. First of all, on the whole we could recognise a yellow-ochre (Indian?) coating; secondly, there

were traces of hewing by means of pick hammers. Another unmistakable feature were the typical conical reinforcement holes of 4–5 cm diameter for the wooden pegs that gave the clay plaster a better adhesion and supported the modelled course of the folds. Additional features were the blackened spots. This blackening could be the result of the explosions or of smoke and soot, if the pieces originate from somewhere near the caves.

The fragments were salvaged by hand (shovel and wheelbarrow) and with the aid of machines (forklift, heavy-duty crane). During the process of loading the wheelbarrows every shovel of rubble from the niche was checked for fragments of clay plaster, wooden pieces and other distinctive features. Larger stone fragments could be transported by means of a Volvo forklift (up to six tons) and a heavy-duty crane (Nissan-Kato, maximum capacity 30 tons). For the crane transport the rock fragments were equipped with



△ a



△ c



▽ d

▽ b

Fig. a. Rock fragment weighing tons with typical rows of reinforcement holes

Fig. b. Heavy-duty crane salvaging fragments

Fig. c. Salvaging fragments with a crane

Fig. d – Fig. f. De-miners at work

Fragments being lifted into the shelter through the open roof ▷



▽ e

▽ f







△ ▽ Afghan workers removing the rubble with shovels and wheel barrows





△ Clay plaster fragments in situ at the Eastern Buddha: loosened after the explosions, partly detached from the rock surface and in danger of falling off



△ △ Emergency measure, alpine style, spot-bonding of clay plaster fragments in situ

▽ ▽ Clay plaster fragments in situ at the Eastern Buddha, spot-bonding with clay-gypsum mixture



تفريغ پازجه ها / Description of rock fragments / Beschreibung der Felsfragmente

001	شمار پازجه ها / fragment-/Felsfragment-Nr.: <i>GBF-053</i>
002	موقعیت اصلی پازجه / location of find/Fundlage: <i>Nische of Gr. Buddha, niche</i>
003	موقعیت انبار / location of storage/Lagerort:
004	اندازه روی پازجه / measure/Maße (in cm ca.): <i>105 x 160 x 170</i>
005	وزن / weight/Gewicht (in t ca.): <i>8</i>
006	مساحت / surface/Oberfläche ca. m <sup>2</sup> : <i>190 x 130 = 2,47 m<sup>2</sup></i>
007	نوعیت سنگ / stone/Gestein: <i>Conglomerate (red) + few silt</i>
008	تفريغ / description/Beschreibung: <i>oberfläche mit ockaf. Beschichtung, einige steine ausgebrochen, 18 löcher</i> <i>surface with ocre coating, some stones broken out 18 holes</i>
009	علامت روی سنگ / marks of working/Bearbeitungsspuren: <i>18 holes, ocre coating</i>
010	مخصوص / special/Besonderheiten: <i>3 <del>stone</del> Holzpflocke, einer abgebrochen</i> <i>3 <del>stone</del> wooden pegs, one is broken</i>
011	گرفتن نمونه / taking of sample/Probenentnahme:

توسيط / editor/ Bearbeiter:

*Frank*

موقعیت Location, تاريخ date/ Ort, Datum

*Bamayan, 16.8.05*

wire-ropes. To avoid damages to the unstable material and to distribute the pressure wooden boards and square timbers were placed between wire-ropes and rock.

Very large fragments (two tons and more) were lifted through the unroofed roof and deposited on square timbers in the eastern section of the great hall. Smaller fragments were put on pallets and transported with a forklift to the western section of the hall. On the whole, the fragments had to be stored temporarily in the eastern area of the terrain. For the time being, to be able to identify the individual fragments they were labelled with a black felt tip pen. Later on, the fragments were numbered with small tin-plate signs. (Fragments at the Western Buddha were numbered GBF\_001 etc; at the Eastern Buddha KBF\_001 etc.)

### *Fragments of clay plaster*

During the safeguarding of the rock fragments and the removal of rubble and sand pieces of clay plaster and appendant material, such as string and wooden pegs, were regularly found. These pieces were deposited in zinc-plated tin boxes, taken to the office for examination, where they were documented and stored.

### *Stabilisation of plaster remains on the Eastern Buddha*

Some areas of the original clay coating were not destroyed by the explosion. However, they were acutely in danger of falling off as in some parts they had become detached 2–5 cm from the stone surface. Moreover, into the crevice between the clay plaster and the rock small pieces of rubble had fallen that threatened to further detach the clay plaster pieces from the surface.

This rubble was removed. To prevent these original pieces from falling-off, putty links were applied between rock surface and clay plaster. Beforehand, the composition of the putty was experimentally tested and adapted to the fragment materials that needed to be stabilised. A mixture of 3:1 clay powder and gypsum was found suitable. The mass was sufficiently stable and adhesive, but was also elastic and soft enough not to damage the original clay plaster fragments.

This emergency stabilisation was carried out by abseiling from the back wall of the niche. It seems the danger of plaster fragments falling off through vibrations (rockfall, minor earthquakes) has been prevented for the time being. (Only in 2007 after the clearing of the niche scaffolds could be erected and the complete consolidation of the clay plaster sections could be carried out.)

### *Documentation*

For the documentation of the operations the find spot was denoted, the object was described in writing and the storage location recorded. Furthermore, all objects were digitally photographed. For the image files the jpeg format with a low compression level was chosen. Clearly identifiable file names were assigned: the name of the object allows inferences of the type of object.

Example: clay plaster fragment no. 001 of the Small Buddha, image 01: 'KBL\_001\_01.jpg' (KB stands for 'Kleiner Buddha' [= Small Buddha], L for 'Lehmfassungsfragment' [= clay plaster fragment]).

In addition, in the IPTC boxes of the jpeg files basic information about the objects was noted down. Consequently, just by consulting the image file and without any additional text relevant information can be obtained about the object, the name of the mission, the photographer, the type of object, the find spot, the storage location, plus short descriptions and catchwords.

### *Rock fragments*

The rock fragments of the Great Buddha were classified into fragments with original surface and fragments without any traces of treatment. Larger fragments were photographed at the find spot and in the depot and then described on an inventory sheet.

### *Area*

At intervals of several days the area of the Great Buddha niche was photographically documented from above and from the front, depending on the state of the salvaging. This enabled us to document both the progress of salvage and the find spot of the larger fragments. As position for photographing the ground plan one of the upper lateral openings of the Buddha niche was chosen. To be able to document the entire floor surface of the niche with as little distortion as possible the camera was attached to a tripod arm (c. 1.7 m long), which was then held out of the niche opening. The picture detail could be controlled with the fold-out display of the camera. For the referencing of the niche photos four levelling boards (of tin, 15 x 15 cm, white surface) were attached to the side walls of the Buddha niche. The height of these boards was geared to measuring point 17 of the mission of October to December 2003 (see report Mission to Bamiyan, Afghanistan, ICOMOS Germany, P. Smars, U. Dahlhaus, p. 11 ff.). To level the points a barometric level was used, and a tape measure to measure the distance. By means of a metal straddling dowel the measuring points were anchored in the walls of the niche (made by a blacksmith in the Bamiyan bazaar). The height of measuring point 17 roughly corresponds to the height of the rubble heap (from the ground level of the niche 840 cm). The position for taking the frontal pictures was the northeast corner of the big storage building.

A systematic salvage of the Buddha fragments, including storage in an interim depot, could only start in early August as the buildings were not finished before the beginning of October. In the period between mid-September and end of October about 300–400 m<sup>3</sup> of material could be cleared from the Great Buddha niche, two thirds of which were sand or small pebbles.

Bert Praxenthaler