

# Shuilu'an

## Final report

East wall, southern part: *yingshen fo*



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Technische Universität München,  
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Kunsttechnologie und  
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Research Institute for Conservation of  
Cultural Heritage of Shaanxi Province  
陕西省文物保护研究院

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Research Institute for Conservation of Cultural Heritage of Shaanxi Province 陕西省文物保护研究院

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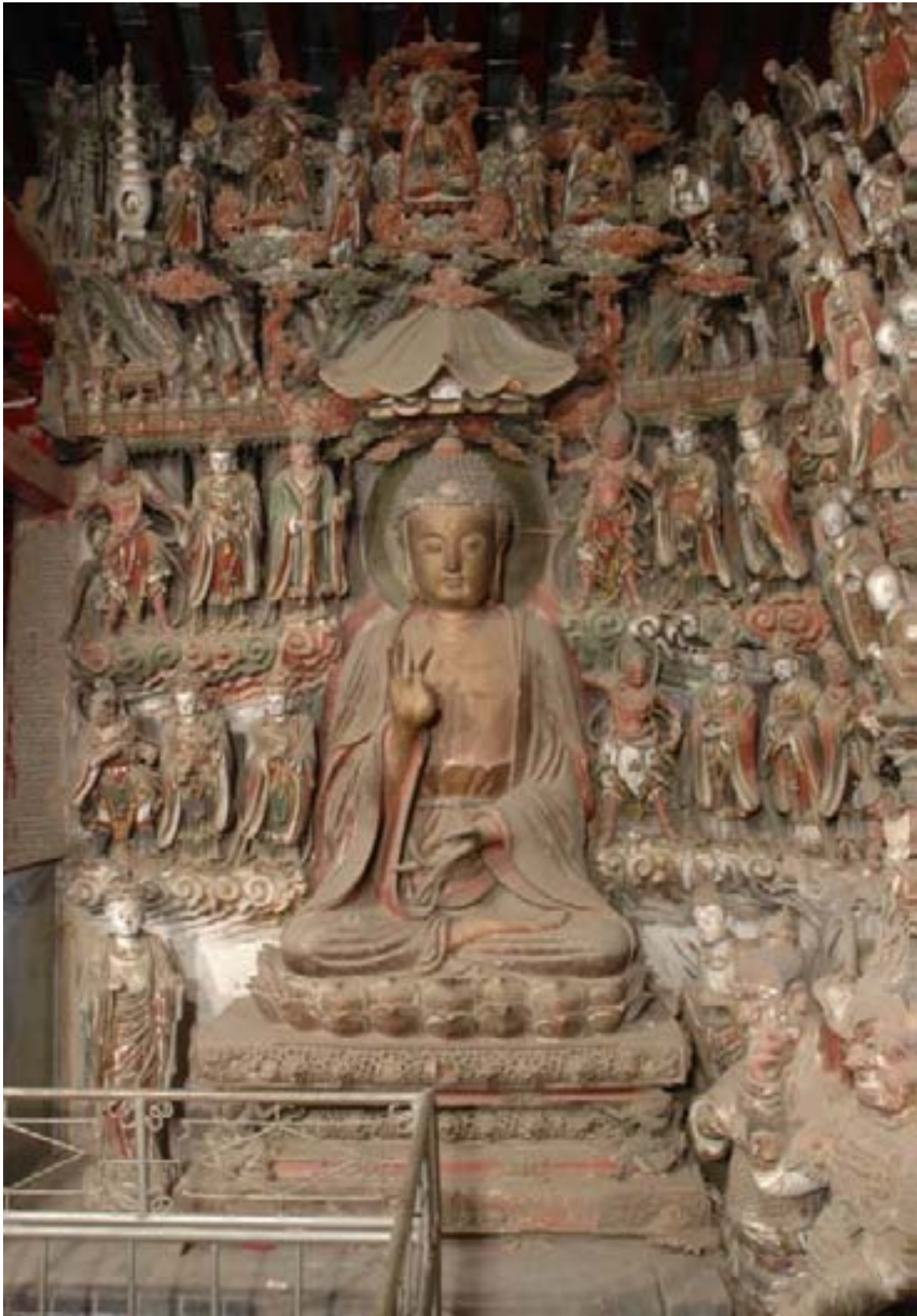


Fig. 1  
East wall, southern part (= ES wall) [Shaanxi Institute for Conservation 2005]

## Ground plan of the Shuilu hall

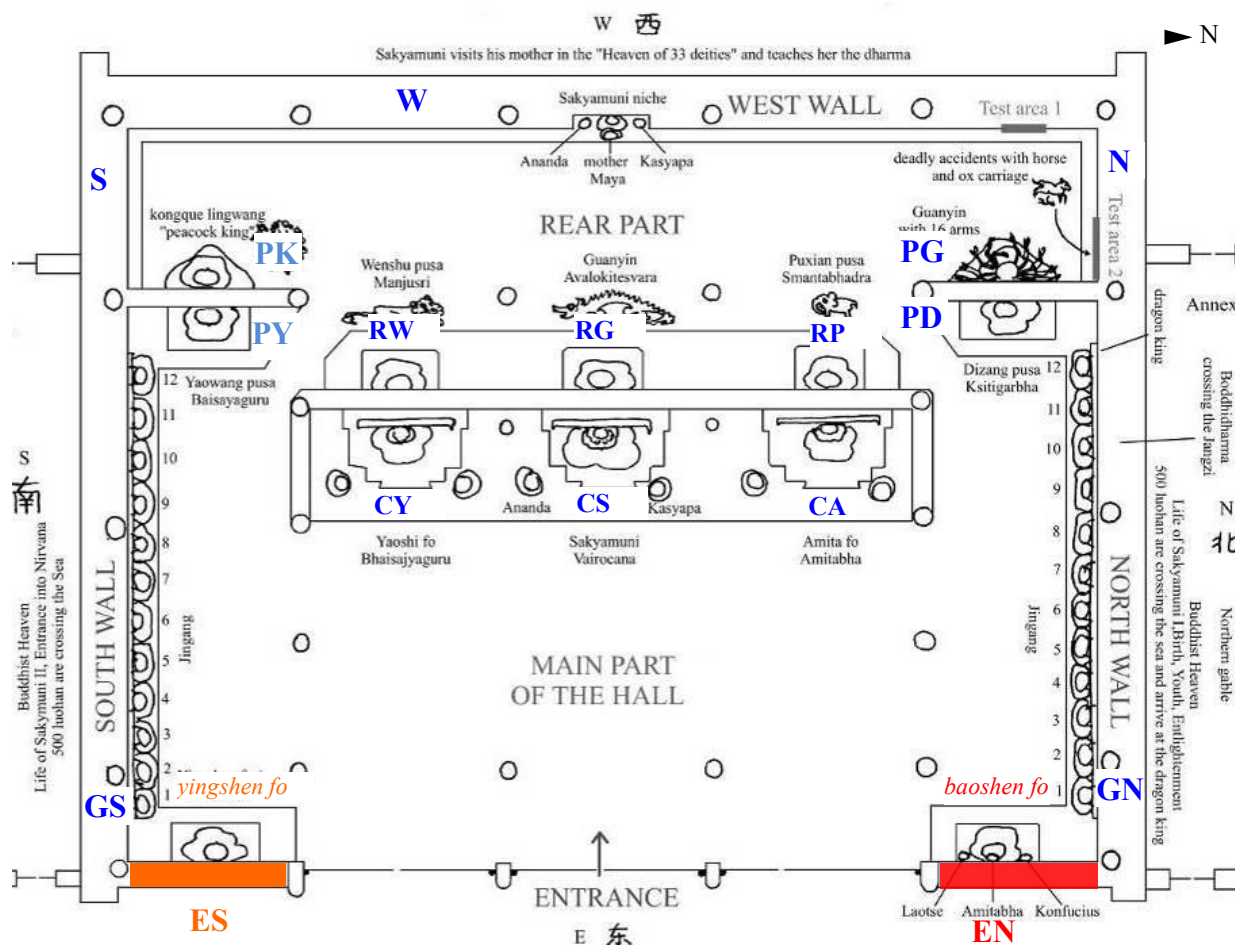


Fig. 2

Ground plan of the Shuilu hall. The letters indicate the abbreviations for the individual wall parts. (Plan by Catharina Blaensdorf, scientific employee, Chair of Restoration, Art Technology and Conservation Science, TUM)

### List of abbreviations for labelling the walls

For the identification of the walls abbreviations with letters have been introduced that are also part of the numbering system of the figures:

ES	east wall, southern part, <i>yingshen fo</i>
EN	east wall, northern part, <i>baoshen fo</i>
GS	southern gable wall
GN	northern gable wall
PK	southern partition wall, eastern side, <i>kongqueling wang</i>
PY	southern partition wall, western side, <i>yaowang pusa</i>
W	west wall

**Shuilu'an, *Shuilu dian* (All saints Shuilu hall)  
Report on the conservation of the east wall, southern part (*yingshen fo*)  
August and September 2013**

**PREFACE**

Since the year 2000 the main hall of the Shuilu'an is part of the German-Chinese cooperation for the Preservation of Cultural Heritage. The objective of the project was the development of methods for the conservation of the polychrome sculptures and reliefs inside the fane. In 2001 the work on-site started and was continued in the years 2002 and 2007 to 2012. During this period damage assessment, conservation test-series and conservation of specific parts of the walls were carried out. As in 2011 and 2012 conservation work was conducted at the northern part of the east wall (EN wall) in 2013 conservation work was to be done at the southern part of the east wall (ES wall) to give the same, i.e. preserved, condition to both partial walls of the east wall.

The objectives of this work-stay were defined after a visit of the Shuilu'an in April 2013. According to the visible damages they included cleaning of sculptures and reliefs, examination of cracks, fixation or reattachment of tilted figures, gluing of loose or broken parts of ornaments, grouting of voids, isolation of corroded iron wires and cataloguing of findings. The fine cleaning and the consolidation of the paint layers were not part of this work-stay. They are postponed to a later time when the cleaning of the adjacent walls (gable walls) has been done. As the northern and the southern part of the east wall are very similar in their overall construction (wall, upper part, figures) the concept for dealing with the visible problems of the ES wall was quite similar to the methods carried out at the EN wall. But at the same time there were different problems to solve. Because of the similarity of these two wall parts the results of the technological examination of the ES wall will be partly referred to the EN wall in this report.

On the Chinese side, Mrs. Yang Qiuying 杨秋颖 from the Research Institute for Conservation of Cultural Heritage of Shaanxi Province 陕西省文物保护研究院 (in the following abbreviated as Shaanxi Institute for Conservation) was in charge of the project. Ms. Gao Yan 高燕 and Mr. Wu Xin 吴新 from the Shaanxi Institute for Conservation worked with the German team on-site. On the German side, the team had changed: Judith Regensburger from the Technical University of Munich (in the following abbreviated as TUM), Chair of Restoration, Art Technology and Conservation Science, acting as deputy of the head of the German side of the project, Professor Erwin Emmerling, Laura Thiemann, a free-lanced diploma-restorer, and Christian Kaiser, student of the chair of restoration at the TUM, worked in the Shuilu'an between August 13 and September 6.

## 1 DESCRIPTION OF THE WALL

The east wall belongs to the main part of the Shuilu hall. It is divided into sections: the middle part overlaps three bays of the building and contains the entrance into the fane. The parts on each side of the access are walls and span one bay of the building each. The section on the left hand side of the door is labelled as “eastern wall, southern part” (ES wall) and the one on the right hand side is labelled as “eastern wall, northern part” (EN wall). Both walls are richly decorated with sculptures and reliefs. For the general composition of the figural decoration is nearly identical on both walls a symmetrical appearance is given to the east wall.

The composition of the ES wall is dominated by a central figure: the large Buddha. Next to and around him reside many figures of different sizes. These are organized in four horizontal zones: two standing bodhisattvas attending him, then twelve figures arranged in four groups both sides next to him, then two little scenes and in concluding seven figures above his head imbedded in mountain scenery. Through this structure the wall shows symmetry in itself with the Buddha acting as the centre axis.

The large Buddha is identified as *yingshen fo*<sup>1</sup> and sits on a lotus flower seat on top of a pedestal. He sits in his typical position, the so-called *ardhapadmāsana* (“lotus position”), meaning that his legs are crossed and only the right foot remains visible while the sole of his foot points upwards. His posture is completely straight and his eyes are almost closed. His arms are angled and his right hand is raised to the level of his breast and the palm points to the front. His left hand is raised to nearly the level of his chest and the palm points upwards. Each time the middle finger is angled in 90°. His hair is curled and his upper lip and chin are covered with a beard. He wears highly girded trousers and a shawl while the upper part of his body is naked. Two aureoles are behind him: one is round and surrounds his head and the other one imitates his body. Over his head is a canopy to which clouds are attached to its front and sides and on its top.

The lotus flower seat is oval in ground view and has got two rows of petals. It is seated on a square pedestal with five steps. The steps are richly decorated with ornaments like flowers, blossoms and network. In between the lowest and the highest step are two little figures at the corners of the pedestal, whose seem to support the highest board of the pedestal and thus quasi the Buddha. Underneath the lowest step of the pedestal is a foot at each side that seems to carry it, but it has got only ornamental character.

On each side of the Buddha there is one standing figure attending him; both of them are *bodhisattvas*. They stand upright with angled arms and wear floor-length skirts and shawls, but the upper part of their bodies is naked. On their heads are richly decorated crowns and around their throats are necklaces. The hair is tied up. With bare feet they stand on a round base that is surrounded by lotus petals.

These three figures are positioned on top of a dais. The further figures surround the Buddha and are positioned next to and above him directly to the wall.

Next to him – from the level of his upper part of the body to the end of his head – twelve smaller figures are organized in two rows, three figures per side and row, and are forming groups. Each of these groups comprises one *tianwang* 天王 (king of heaven) and two male figures, the *tianwang* always standing on the left hand side of the group. The *tianwang* look fierce and gesture in the same way. Three of them are dressed barely and wear only short trousers with something resembling a skirt over them; even their feet are bare, only circlets enclose their ankles.

<sup>1</sup> The interpretation of this and the following figures is given by Catharina Blaensdorf, scientific employee, Chair of Restoration, Art Technology and Conservation Science, TUM, if no other reference is made.

The other one is dressed completely with trousers, a skirt above it, a shirt with wide sleeves and knee-length boots. All of them are surrounded by flying bands, the so-called *piaodai*. The other eight male figures stand still and their facial expression is quiet. They are dressed and decorated richly. Their clothes comprise a floor-length skirt, another knee-length one above it and a girded cloth around their waist; furthermore they wear two long-sleeved shirts, a shawl with wide sleeves and pointed shoes. Their decoration includes necklaces, ear-rings, a highly decorated crown and pendants in front of their legs. Flying bands (*piaodai*) surround their bodies; sometimes they hold attributes in their hands. Gloriettes are around the heads of all twelve figures; with the *tianwang* they are built by a flying band and are not completely round therefore. All twelve figures stand on cloud ledges.

Over them, in the level with the canopy, there is a little scene with even smaller figures on either side of the canopy. On the left is a scene with a godhead sitting on the left side of a desk, where donations are placed, and a family kneeling with folded hands one after another on the right side of the desk.<sup>2</sup> The godhead wears a foot-length cloth, a skirt above it, a long-sleeved shirt and a shawl and is ornamented with necklace, headgear and flying bands. The members of the family are ordinary dressed: the father wears a floor-length girded robe, the mother a foot-length skirt and a coat, the elder boy a floor-length robe and the younger boy a floor-length skirt, a long-sleeved shirt and a short-sleeved coat above it. The scene on the right is not recognisable anymore, because one of the three figures is missing. The man positioned in the middle is very poorly dressed with a tattered skirt and coat, is barefoot, holds a stick in his right hand and looks to the front. The other man wears a foot-length robe and a hat and looks at the first man. These scenes protrude a little bit into the room, and with the ornamented fence they are closed in themselves and there is also a notable separation between the rows with the twelve figures next to the Buddha and the upper zone of the wall.

This upper zone depicts a mountain scenery with a Buddha, two bodhisattvas, two monks, one male figure, one *sudhana*, monkeys and a pagoda. The beginning of the mountain scenery is already marked in the lower row of the figures next to the Buddha however it is only painted in the way of the mountains above. In the upper row of the figures the modelling of the mountains starts and it raises with the level of the little scenes and is completely formed in the section with the figures. As a result, a slight relationship exists between all figures.

The upper part of the wall protrudes a bit. Out of this protruding and out of the additional slightly tilted fixation of the seven figures arise the better and more clearly relation to the large Buddha below. Moreover, the figures in the exterior positions are turned a little bit to the middle of the wall, i.e. the Buddha. Above this Buddha there is another little Buddha, who is framed by clouds; he sits in an identical position to the Buddha below, but his hands rest on his womb and his eyes are closed. He is dressed like the Buddha below and an aureole surrounds him in the same manner. On each side next to him, there sits a *bodhisattva* in the *ardhapadmāsana* who is enclosed by clouds, too. Their arms are angled and they hold an attribute in their hands; their eyes are closed. Both are dressed similar to the Buddha, but additionally they wear a long-sleeved shirt, a necklace, a highly decorated crown and *piaodai*. They are connected with the sphere of the large Buddha below by an ornamental band which arises out of the clouds over the head of the large Buddha. In a level that protrudes even a little bit more as the one of the little Buddha and the *bodhisattvas* are three more figures; under their feet are clouds. Between the Buddha and the *bodhisattvas* stands a monk at each side, next to the left *bodhisattva* is a standing male man and

<sup>2</sup> The interpretation of these figures is given by Dr. phil. Shing Müller 宋馨, scientific employee, Institute of Sinology, Ludwig-Maximilian-Universität München.



next to the right *bodhisattva* is a so-called *sudhana*, who is additionally bowing. The monks have bald heads, their arms are angled and their hands are folded in prayer. They wear floor-length girded robes with wide sleeves, a long-sleeved shirt underneath and shawls, which are torn around the lower part of the body and caps their left shoulders. The male man has angled arms and holds an attribute in his hands. The hands are covered by his clothes. He is dressed like the eight figures in the rows below, but is not ornamented that richly. The *sudhana* wears only short trousers and *piaodai* surround him; his arms are angled and his hands folded. On the left side is a pagoda with four monkeys<sup>3</sup> next to it. On the right side there are no further figures or other elaboration belonging to the ES wall.

At first sight the ES and the EN wall seem to be very similar, but essentially there are several differences to state. The most significant one is that the ES wall is about 50 cm higher than the EN wall, mainly because the mountain scenery reaches higher but also because the twelve figures of the two rows are taller than the ones on the EN wall. But these figures differ not only in their height – there are also differences in their entire shape. The ones of the EN wall are more corpulent, however their clothes, suits of armours etc. are much more detailed and richer. Also, the canopy of the EN wall is gracefully built and highly decorated while the one at the ES wall is laminar and has got no fine ornamentation. Contrary the pedestal of the ES wall is much richer decorated; the fronts of the highest, middle and lowest step are completely decorated with modelled ornaments and even in the corners are two figures while the surfaces at the pedestal of the EN wall are only painted; only the corners were decorated with ornaments once. Even the overall situation in the mountain scenery differs; at the ES-wall it seems a lot more organized. Furthermore, the two little scenes and the separation between the upper and the lower part because of a fence exist only at the ES wall.

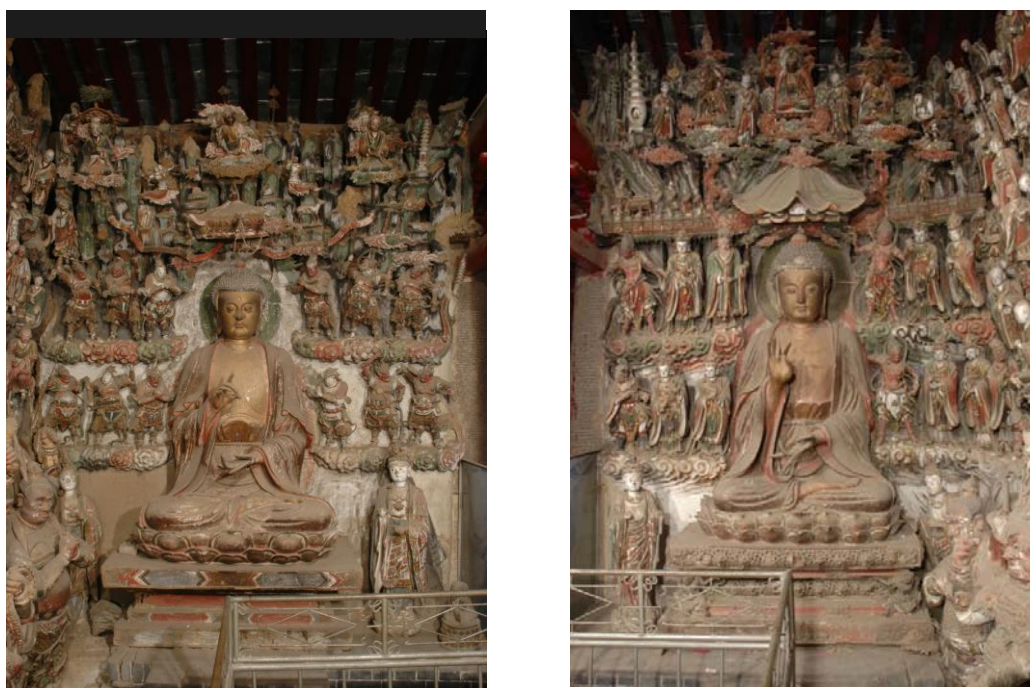


Fig. 3  
Northern (EN) and the southern (ES) part of the east wall [Zhen Gang, Shaanxi Institute for Conservation, 2005]

<sup>3</sup> Two monkeys were found during the work on-site and were reattached.

### Dimensions of figures and wall parts

Some figures and wall elements were measured; Table 1 and 2 give the dates. Comparing the dimensions of the ES wall to those of the EN wall there are differences. This does not come as a surprise because of the described obvious distinctions. Thus, the Buddha is taller than the one on the EN wall (175 cm to 178 cm minus lotus flower seat); even the twelve figures of the two rows are taller than their counterparts at the EN wall (68-75 cm to 58-59 cm). Furthermore the two pedestals have different heights (61 cm to 55 cm).

The entire height of the ES wall constitutes 457 cm and the entire width constitutes 283 cm.

Tab. 1 Height of figures

<i>position</i>	<i>height of figures [cm]</i>
<i>yingshen fo</i>	175
lotus flower seat	22
<i>yingshen fo</i> including lotus seat	ca. 190 (estimated)
<i>bodhisattva</i> (including crown and lotus base)	116
<i>tianwang</i> and eight further figures (including headgear or hair, but without glorioles)	68-75 ( three figures measured)

Tab. 2 Height of wall elements measured from the tile floor (the level of the floor was not checked)

<i>position</i>	<i>height above floor [cm]</i>
dais, brick revetment	72
top of pedestal of <i>yingshen fo</i>	133
top of lower cloud ledge (5.Y28)	182
lower edge of upper pole	410

### Numbering of figures and parts of relief

The numbering is based on the system set up by Siegfried Scheder and the restorers of the Center for Conservation, Zhang Xiaorong 张孝绒, Liu Linxi 刘琳西, Yang Qiuying 杨秋颖 and Dang Xiaojuan 党小娟 in July 2002. As the big Buddha sculpture was numbered as BU 5, the smaller figures are numbered as 5.1 to 5.33. 5.A1 to 5.A6 are architectural elements, 5.B1 to 5.B4 are animals, 5.S1 to 5.S 21 are mountains and 5.Y1 to 5.Y31 are clouds, sometimes supplemented of the letters “l” (left), “m” (middle) or “r” (right) to distinguish between the adjustment of the single components.

The system of abbreviations followed the one used with the EN wall in 2011 and 2012. The prefix “ES” was added as acronym for “east wall, southern part” in front of the individual numbers of figures and further wall elements for the definitely differentiation from other walls. Some elements as the lotus flower seat (ES 5.A3), the pedestal (ES 5.A4) or the fence (ES 5.A5 and ES 5.A6) were included in the numbering system. Mountains and clouds got the same characters as at the EN wall and were numbered. The pagoda was already mapped as ES 5.A1 and thus this numbering was not changed even if the pagoda at the EN wall had a “T”-characterization. New findings got a consecutively number in the way of the existing scheme. However, the two figures ES 5.16 and ES 5.17 were written off the ES wall. According to their construction (fixation of the peg) they belong to the GS wall (gable wall, southern side). For this reason they were cancelled of the ES wall and the numbers ES 5.16 and ES 5.17 do not exist on the ES wall any more. In fact these two figures shall be admitted and numbered to the GS wall.

Fig. 4-6 show the numbering system. Table 3 gives an overview of the used abbreviations. Table 4 gives the names of the figures which can be identified.





Fig. 4

East wall, southern part: Numbering of figures and parts of reliefs

Red: figures, pink: animals, blue: architecture (5.A5 and 5.A6 were added in Germany)

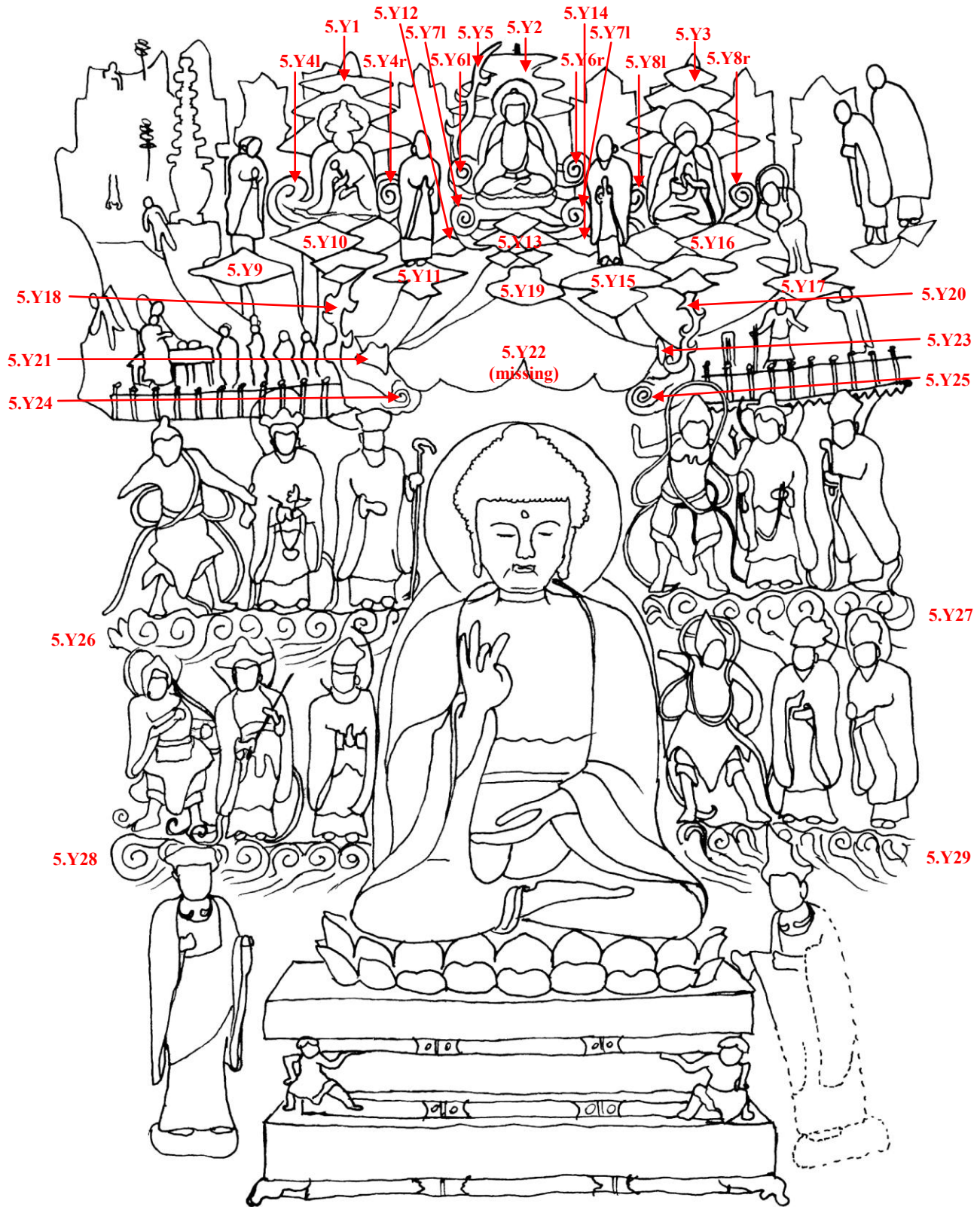


Fig 5

East wall, southern part: Numbering of clouds (Y=yun 云)



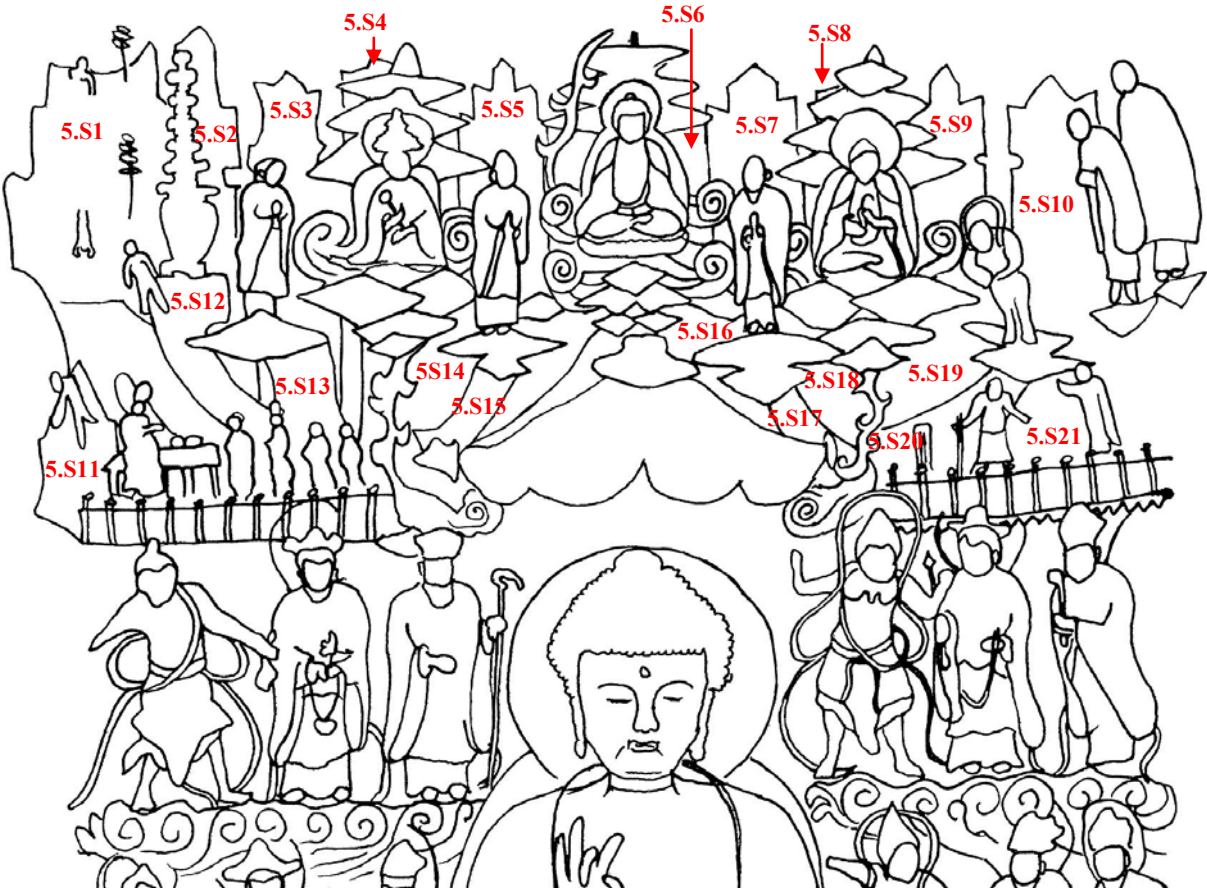


Fig . 6  
East wall, southern part: Numbering of mountains (S = *shan* 山)

ID code	abbreviation for	indicating
ES	east, south	east wall, southern part
5	BU 5	large Buddha in front of ES wall
5.1 – 5.33		human figures of ES wall
A	“architecture” (2002)	architectural elements on ES wall
B	“beast” (animal, 2002)	animals on ES wall
S	“ <i>shan</i> ” 山 (2011)	mountains on ES wall
Y	“ <i>yun</i> ” 云 (2011)	clouds on ES wall

Tab. 3  
Identification codes for numbering of figures and relief parts on ES wall

number	position	identification
BU 5	centre of ES wall	Buddha, <i>yingyshen fo</i>
5.2	mountains, left side, top	bodhisattva
5.3	mountains, left side, top	monk
5.4	mountains, centre, top	little Buddha
5.5	mountains, right side, top	monk
5.6	mountains, right side, top	bodhisattva
5.7	mountains, right side, top	<i>sudhana</i>
5.8	little scene, left side	godhead
5.18, 5.21, 5.24, 5.27	on cloud ledges	<i>tianwang</i>
5.30, 5.31	on dais, flanking the <i>yingshen fo</i>	bodhisattva

Tab. 4  
Identification codes of figures which could be identified

## 2 TECHNIQUE OF WALL CONSTRUCTION AND MODELLING OF SCULPTURES AND RELIEFS

The general construction of the wall and the upper zone of the mountain scenery, the attachment of the figures to the wall and the modelling of the sculptures and reliefs of the ES wall are nearly identical to those of the EN wall. These topics will be described in this report not too detailed as Catharina Blaensdorf has given a detailed description of the entire construction illustrated with schematic drawings in their former reports of the Shuilu'an<sup>4</sup>. This report will give a general overview of the construction and will then report the characteristics of the ES wall. Furthermore it will name differences to the results of the EN wall.

The examination of the wooden pole construction and of the construction of the upper part of the ES wall as well as of the attachment of the figures to the wall was done from the scaffold on the front and right underneath the eaves after the removal of two wooden panels on the back<sup>5</sup>. Due to this removal it was possible to see and to examine the wooden pole construction as well as later changes of the construction like changes of the position of diverse poles. Furthermore, it was possible to have a close look at the construction of the upper part of the ES wall. Because of the light shining through the gaps in the mountains scenery there was the possibility to see the wooden pole construction from the front in parts, too.

As written above the two wall parts look very similar at first sight, however there are some differences in the details of the construction, the modelling and the manufacturing technique. The most obvious difference regarding the overall design is that the ES wall is higher than the EN wall.



Fig. 7  
Examination of the construction of the ES wall from the back after the removal of some panels.



Fig. 8  
Scaffold in front of ES wall.

<sup>4</sup> See Blaensdorf, Catharina: Shuilu'an, Final report, East wall northern part: *baoshen fo*, 2014, p. 15 ff., fig. 8 ff.

<sup>5</sup> After the examination the wooden panels were inserted again.

## Wall construction

### *Lower part of wall – clay wall*

The ES wall spans over one bay of the wooden pole construction of the building. In between the wooden columns there is a wall of rammed earth and adobe bricks presumably. As on the other walls neither structure nor material of the assumed clay wall is visible at any place of the ES wall. But in all probability the structure corresponds to that of the walls examined in former work-stays (west wall, rear part of the north wall and southern insertion wall): “the lower part probably consists of rammed earth, while the upper is made of adobe bricks. The adjustment of the adobe bricks is unknown. Joints visible from above may indicate that the adobe bricks at the top of the wall are arranged lying and as stretcher bricks.”<sup>6</sup> As well as the definite structure of this wall is unknown its height is unknown, too.

### *Upper part of wall – support of mountain scenery*

The upper part of the ES wall, the zone with little scenes and mountain scenery, surmounts the clay wall. Therefore there is need of a substructure for the attachment of the reliefs and sculptures. This substructure consists of two horizontally laying wooden poles and a lot of vertically running thick reed bundles. Both poles are nearly round; the upper one is thinner (diameter ca. 9 cm) than the lower one (diameter ca. 14 cm). They lie on elements of the wooden pole construction in different heights. The upper pole lies with northern end on the upper into the building extending beam of the wooden pole construction (beam B)<sup>7</sup>. Two iron pins are hit into this upper beam, and in between them the upper pole rests secured against sliding forward. Its southern end is in the air. The position of this pole is in level with the heads of the two Bodhisattvas. The lower pole lies with its northern end on the lower into the building extending beam of the wooden pole construction (beam A)<sup>8</sup>. This lower beam has got a flat gap wherein the lower pole rests prohibited of moving. The other end of the pole is not visible, but it probably ends somewhere in the GS wall. The position of this pole is in level with the fence of the little scenes. (The position of both poles is marked in mapping fig. 106)



Fig. 9  
Northern end of the upper pole lying on beam B and being secured with two iron pins.



Fig. 10  
Southern end of the upper pole hovering in the air.

<sup>6</sup> See Blaensdorf, Catharina: Shuilu'an, Final report, East wall northern part: *baoshen fo*, 2014, p. 20.

<sup>7</sup> See Blaensdorf, Catharina: The Shuilu'an, Final report, East wall northern part: *baoshen fo*, 2014, p. 16, fig. 8.

<sup>8</sup> See Blaensdorf, Catharina: The Shuilu'an, Final report, East wall northern part: *baoshen fo*, 2014, p. 16, fig. 8.





Fig. 11  
Northern end of the lower pole lying on beam A and resting in a flat gap.



Fig. 12  
Upper part of the ES wall with beam A and B. The levels of both poles behind the mountain scenery can be assumed.



Fig. 13  
Vertically running reed bundle behind and in front of the pole.

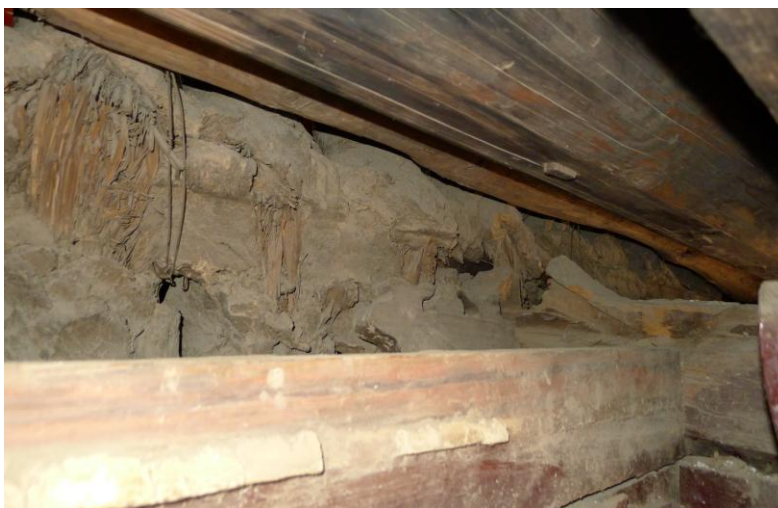


Fig. 14  
In short distances running reed bundles surrounding the upper pole.

The reed bundles run in short distances in front and behind the poles and are tied with hemp strings over and beneath them each time. They seem to remain even below the lower pole and end in an unknown height presumably they are connected with the clay wall in a specific way. Because of the resting and the securing of the two poles and because of their enclosing by reed bundles stability is given to the construction of the upper part of the ES wall.

The construction of the upper part of the ES wall differs to that of the EN wall in an important aspect: Both poles rest on elements of the wooden pole construction and are secured furthermore. For this the construction of the ES wall is much more stable than that one of the EN wall. This can be an indication of different work teams or of the development of the construction during the building of the temple.

The general system of the construction of the upper part of the wall is visible at the southern partition wall (PY wall) because of the loss of numerous clay modelled mountains:

- The construction of the upper part of the wall protrudes the level of the clay wall
- At the top one wooden pole lays horizontally
- Vertically running reed bundles jacketed with clay are visible
- In the upper part of the reed bundles no (clay) wall exists
- Another level of reed bundles is in front of the first one and it is connected by clay jacketed wooden pegs with the reed bundles behind
- Connection of the reed bundles at their lower ends with thick wooden pegs with the wall, i.e. the pegs are hit into the laying adobe bricks

This principle can even be assumed for the ES wall.

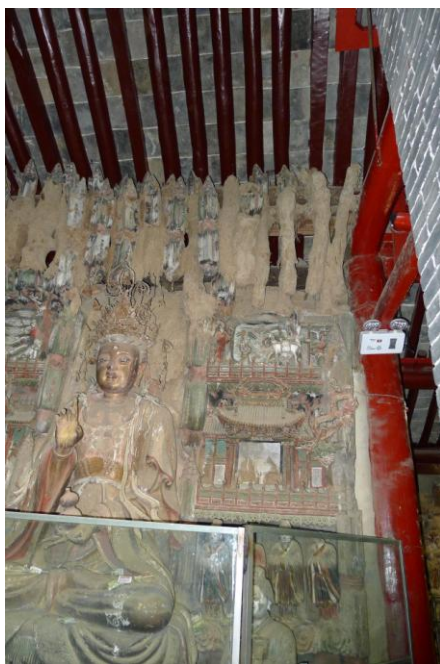


Fig. 15  
Southern partition wall (PY wall). Due to the loss of numerous clay modelling the substructure, i.e. the construction of the upper part of the wall, is visible.

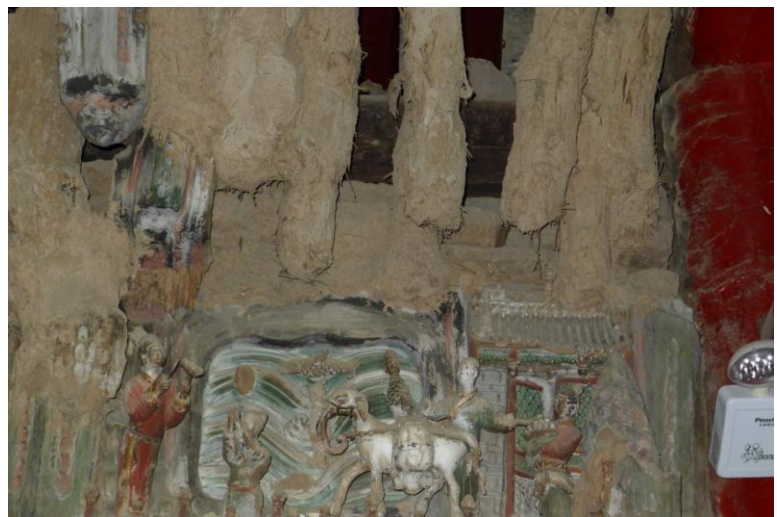


Fig. 16  
Detail of the PY wall with laying adobe bricks.

### Attachment of sculptures and reliefs to the wall

Each figure possesses an inner structure of a wooden stick over whom the sculpture was modelled in a later step. That wooden stick is tied with hemp strings on a thick wooden peg that is driven into the wall and connects the figure with the wall.<sup>9</sup>

The figures of the lower zone are attached to the (estimated) clay wall. Despite of their height and weight there is only one peg for their connection with the wall. Even more this peg is in the lower part of their body. The sculptures stand on horizontal reed bundles where they are presumably fixed with wooden sticks, too. For thus both horizontally and vertically attachment exists. It can

<sup>9</sup> See Blaensdorf, Catharina: The Shuilu'an, Final report, East wall northern part: baoshen fo, 2014, p. 19 ff., fig. 14 a + b ff.



be assumed that the horizontal reed bundles possess a wooden stick as inner core and are attached to the wall with thick wooden pegs, too. The figures of the upper zone are attached to the mountains, i.e. thick pegs were driven into or even through the reed bundles. Contrary to the lower zone in the upper one exists only a horizontal connection with the mountains, the sculptures do not stand on cloud ledges or any other underground like the lower ones. Even the little scenes need to possess a substructure for the attachment of the figures standing there. This substructure is made of a reed bundle. Presumably it is tied with hemp strings to vertically running reed bundles or there is an inner core of a wooden stick which is connected with thick wooden pegs to the wall. The attachment of the little figures of the little scenes is only in vertical direction. Their wooden core is stuck into the ground.

The vertically running reed bundles are the substructure for modelling the mountains onto them. Due to the three-dimensionality of this zone some mountains protrude of the ground level. Each one is connected with a mountain, i.e. a reed bundle, behind him by a wooden peg. Therefore there are “front” and “back” mountains. The little Buddha and the two little Bodhisattvas are attached to “back” mountains, but moreover the Buddha rests on a “front” mountain, too. The monks, the male figure and the *sudhana* are attached to “front” mountains. The pagoda is attached with two wooden pegs to the mountain behind it.



Fig. 17

Attachment of figures to the upper part of the wall with long and thick wooden pegs driven even through the reed bundles.



Fig. 18

A vertically running reed bundle and a horizontal running reed bundle as substructure of the little scenes are visible.





Fig. 19

Because of the nearly complete loss of one figure of the right scene the attachment of the figure to the ground by a wooden stick is visible. The identical method can be assumed for the other figures of the little scenes.

### Modelling of sculptures and reliefs

In general the figures are modelled with clay over a substructure of wooden sticks. Sometimes one, sometimes two or more wooden sticks build the inner core of the figure; it depends on the shape of the figure. If there are more wooden sticks they are tied together with hemp strings. Mostly first a layer of coarse clay is put on and a second one of finer clay follows. The details like garments, decoration, attributes and ornaments as well as fingers and *piaodai* are modelled over an iron wire usually. Furthermore a clay plaster jackets the wooden pegs and models the interspaces to the wall at the same time.

In the following characteristic observations noted at individual sculptures are listed and described more detailed. The entire construction of every figure could not be examined only some details of modelling or attachment were visible.



Fig. 20

*Tianwang* ES 5.27: The substructure of a wooden stick is visible.



Fig. 21

*Tianwang* ES 5.27: Hemp strings tie the wooden sticks of the upper arm and the (lost) forearm together.

### ***Buddha***

His curls are twisted and modelled separately. They stick to the head without any further fixation, probably they are only glued. The fingers are connected with thin wooden sticks to the palm. His back reaches a little bit deeper than the level of the wall, i.e. the plaster, is. Therefore the two aureoles behind him lay quasi in the wall; they are modelled separately.

The canopy is formed very plain, has got no modelled decoration and looks like a big turned up calyx or a tent. Contrary the one of the EN wall looks very filigree and has got a lot of detailed and separately modelled ornamentation like beaded chain pendants.

### ***Dais and pedestal***

The dais is presumably completely made up of adobe bricks.<sup>10</sup> Its fronts are encased with bricks and on the surface is a plaster.

The pedestal has got a solid substructure; it might be made of rammed earth or adobe bricks. The ornamentation of its fronts is mould-made and supposedly it is glued to the underground. The feet are only decoration without any static function; potentially they are also mould-made. Contrary to the other pedestals even to the ones of the three Buddha of the main wall the pedestal of the ES wall is ornamented completely on all fronts. The other pedestals are painted and only the corners are decorated with ornaments.

### ***Two attending bodhisattvas***

For the right *bodhisattva* (ES 5.31) had to be moved out of the corner it was possible to examine its modelling detailed:

- 1) Vertical round wooden peg of 2,5 cm diameter; for there is further space another wooden peg might have been there
- 2) Vertical straw bundles torn around the wooden stick; diameter of this core of wooden stick and straw 10 x 11 cm, however not round but kidney-formed
- 3) Thick layer of coarse clay plaster with cut straw (presumably); the main volume of the body is made of this material
- 4) Relatively thin layer of fine clay plaster with hemp fibres (presumably); the proportion of fibres is quite high
- 5) The head might be modelled separately for there are cracks around the neck
- 6) Thin layer of slurry
- 7) The crown is modelled separately over a substructure of thin horizontal and vertical wooden sticks (0,8 x 0,6 cm); with the horizontal wooden sticks the crown is attached to the head
- 8) The hands might be modelled separately

The right *bodhisattva* is not completely modelled. Its back and its right side have got no fine clay plaster, are quite rough and are not painted; furthermore there are finger imprints at the back. Even the inner of the shawl falling down from the right arm is neither fine modelled nor painted. The reason might be that the figure stands in a corner and its back and its right side are not visible.

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<sup>10</sup> During the work process it was necessary to countersink the right corner. As adobe bricks appeared there it is supposable that the whole dais is built in this way.

The attachment of the figure to the dais is done with the inner wooden stick of the figure that reaches out of the figure and is used as its peg at the same time. Midst of the adobe bricks in the corner is a hole wherein the peg has stuck of all probability. In addition the plinth extends some centimetres into the dais; due to this connection the figure got more stability. Further stability was reached with a second wooden peg that went horizontally to the GS wall. Presumably this wooden peg was tied with hemp strings on the vertical one. A thick layer of clay encases it.

This system of modelling can also be assumed for the left *bodhisattva*. However its back is completely modelled and there exists no connection to the wall.



Fig. 22

The wooden peg with interspace to the straw bundle is visible. Around this kidney-formed inner core there is a thick layer of coarse clay plaster with cut straw.



Fig. 23

Over the layer of coarse clay plaster lies a relatively thin layer of fine clay plaster.



Fig. 24

The fine clay plaster contains a high proportion of hemp fibres.



Fig. 25

It is visible that the crown is modelled separately and attached to the head.

### ***Tianwang and other nine figures of the two rows***

For the *tianwang* gesture quite wild their modelling needs to interpret this. Therefore their faces, hair and clothes are distinct plastically modelled. Their eyes, the lines in their faces and their hair are deeply marked with thin wooden sticks or an equal material. The thicker *piaodai* like those around their heads are modelled over thin branches, the thinner ones like those in front of their



bodies are modelled over iron wires. Additionally these are fixed with eyelet-formed iron wires to the body.

The other nine figures are less moved. Therefore their modelling, especially that of their faces and clothes, is more flat and quiet. The hands are modelled separately; even they could be mould-made. Possibly the heads are modelled separately; further they could be mould-made because of their quite identical appearance. The inner core of the completely round glorioles is a thin branch. There exists two kinds of head gear but both are made in the same manner. The substructure contents of connected wooden sticks and is stuck into the head. The decoration of the head gear is either stuck into the head gear by very thin wooden sticks or iron wires or is glued to it. Moreover, single parts of decoration are mostly mould-made and stuck to the underground by very thin wooden sticks or iron wires or are glued to it.

These twelve figures are less richly modelled than their counterparts at the EN wall. Especially the *tianwang* wear less lavish clothes. All surfaces seem less detailed and plainer.



Fig. 26

*Tianwang* ES 5.21: There is a plastic modelling of face and body; the thicker *piaodai* are modelled over thin branches, the thinner ones are modelled over iron wires.



Fig. 27

Figure ES 5.18: The figure is less moved than the *tianwang* and thus the modelling is plainer. However it has got lots of decoration.



Fig. 28  
The expression of the face is quiet. The figure shows the one type of head gear.



Fig. 29  
The expression of the face is quiet. The figure shows the other type of head gear.



Fig. 30  
Front and back of mountains with the coarse clay plaster on both sides and the fine clay plaster only at the front.



Fig. 31  
On the back of mountains there is only coarse clay plaster.



### ***Mountains***

The mountains are modelled over the substructure described above. A coarse clay plaster is attached to the reed bundles first, even at their back there is some coarse clay plaster. Then a fine clay plaster with fibres is put on but only at visible faces.

The mountains start already in the lower row of the twelve figures but there is only two-dimensional painting. Three-dimensionality starts in the upper row of the twelve figures and raise to the top while getting more and more three-dimensional. In general the construction of the wall and the beginning of the mountains this deep refer to each other.

### ***Figures of little scenes***

Because of the nearly complete loss of one figure of the right scene the general modelling of the figure is visible: The figure was modelled over a wooden stick. The identical method can be assumed for the other figures of the little scenes. Their hands are modelled separately. The fence, i.e. the diverse pieces of the fence, is mould-made. At the left scene one of these mould-made pieces is turned upside down and is used as frontal decoration of the desk.

### ***Figures of mountain scenery***

The aureoles behind the little Buddha and the two *bodhisattvas* are made separately and then attached to the back of the figures.

The inner wooden stick of both monks reaches the cloud below them and connects the cloud with the figure thereby. Only the figure is connected with the wall and the cloud hovers in the air. Due to the posture of the figure this stick can not reach the upper part of the body, however. The hands are modelled separately. Even the heads might be modelled separately as there are cracks around the necks; maybe they are mould-made.

Each foot of the *sudhana* is modelled over an own wooden stick. These sticks run into the cloud below him and thereby the cloud is connected with the figure (same method as described for the monks). The *piaodai* around the body are modelled over a substructure of thin wood, maybe a thin branch.

### ***Pagoda***

Over the substructure of a wooden stick the multi-storey roof of the pagoda is modelled. The lost figure inside the little room was attached with a thin wooden peg.

### ***Animals***

The monkeys have got a small wooden stick as substructure then the figure is modelled over it. The arms are modelled over iron wires. The head is modelled separately and connected with the body by a very thin wooden stick. Presumably with one or two thin wooden sticks the figure is connected with the mountain; the possibility of only gluing it onto the mountain seems to be a too weak connection.

### ***Clouds***

There are two main types of clouds. The first type is located over and below the figures mostly. It is mould-made but shows two different shapes: cloud with one round and one pointed end and

cloud with two pointed ends. Those with pointed ends are even used as ending of the cloudscape above the little Buddha and the *bodhisattvas* in endwise vertical position. Furthermore half parts of both shapes are applied sometimes. Moreover, at other walls this type of cloud exists.<sup>11</sup> By means of firstly a wooden stick that is tied with hemp strings to a counterpart at the wall and secondly a layer of clay to the back of the cloud, i.e. to enclose this substructure, the cloud is attached to its allocated position. Partially smaller clouds are attached to mountains only by gluing.

The second type of clouds is allocated both sides of the Buddha and of the two *bodhisattvas* of the mountain scenery as well as underneath the canopy. For this reason a dexter-orientated as well as a sinister-orientated shape exists. They are mould-made, too. Partially they are attached over a substructure partially they are attached only by gluing to the wall.

A third type of clouds arises off the canopy leading to the *bodhisattvas* above; even this type surrounds the little Buddha. For these clouds are elongated they show kind of *piaodai*-character. Even they are mould-made and their core consists of iron wire.

The clouds underneath the twelve figures of the lower two rows are formed completely different to those described before. Mainly this is owed to their function. Because of the figures standing on them they have to carry their weight partially. For this reason the cloud ledges are modelled over a substructure of reed bundles, presumably a wooden stick is enclosed for the sake of stability.



Fig. 32

*Bodhisattva* ES 5.6: It is visible that the glorioles are made separately and are attached to the figure.



Fig. 33

The different levels of attachment are visible: Figure-gloriole-cloud-jacketed peg-mountain.

<sup>11</sup> See Blaensdorf, Catharina: The Shuilu'an, Final report, East wall northern part: *baoshen fo*, 2014, p. 40 f.





Fig. 34  
The inner wooden stick of monk ES 5.3 reaches the cloud that thus hovers in the air.



Fig. 35  
Back of *sudhana* ES 5.7: The wooden sticks of the feet run into the cloud and thereby the cloud is connected with the figure.



Fig. 36  
Clouds of the first type are under the figures; clouds of the second type are next to the Buddha.



Fig. 37  
Part of clouds of the third type; that one is next to the Buddha.



Fig. 38  
Fourth type of clouds underneath the twelve figures.



Fig. 39  
Construction of attachment of a cloud.



### **Painting of sculptures**

Over the clay plaster there are slurry and white priming generally. The paint is clearly colourful and mostly covering; its application is laminar. Different colours are put on one next to each other or one over the other. They are not mixed or levigated, but there are obvious edges.

In the following characteristic observations noted at individual sculptures are listed and described more detailed.

#### ***Buddha***

The skin is golden, but there is a rose-red colour beneath the golden one. Even the robe is golden and it is decorated with Pastiglia. The hairs of the beard are painted with single strokes; the eyes are of glass or shining stone. The petals of the lotus flower seat are decorated with Pastiglia.

#### ***Two attending bodhisattvas***

The skin is greyish with a light rose accent. The shawls are golden and decorated with Pastiglia.

#### ***Tianwang***

The skin is red-brown; the hairs of the beard are painted with single strokes, sometimes they are organised to small bundles. The paint is mostly covering only the hem is not opaque painted; its paint is watery and imprecise. The exterior hem is golden.

#### ***Further figures of the lower two rows***

The skin is nearly white; the eyebrows are painted with a single stroke. There are two variations of beards: painted with single strokes or painted laminar black. The head gear is golden. According to the tianwang the paint is mostly covering and only the hem is not opaque painted; its paint is watery and imprecise. Also the exterior hem is golden.



Fig. 40  
Robe of Buddha BU5 decorated with Pastiglia.



Fig. 41  
Lotus flower seat decorated with Pastiglia.



Fig. 42  
*Tianwang* ES 527: The figure has got a red-brown skin and the beard is painted with single strokes.



Fig. 43  
*Tianwang* ES 5.27: The hem is decorated with different colours and the exterior one is golden.



Fig. 44  
Figure ES 5.28 shows the first type of beard.



Fig. 45  
Figure ES 5.29 shows the second type of beard..

## PREVIOUS REPAIRS

At the ES wall there are only some previous repairs to state; this is different to the EN wall. Most of the treatment was presumably done during the work phase of 1981-85. All previous repairs are mapped in fig. 107.

### Fixation of the upper pole

The upper pole of the mountain scenery was connected by iron wires to a new inserted wooden beam right behind it. This insertion was done during the work of 1981-85. Iron wires were torn around the upper pole and they were connected with the new wooden beam by iron rods or nails with eyelets that were hit into this beam. The wires are between the mountains ES 5.S3 and 5.S4, 5.S5 and 5.S6 and 5.S8 and 5.S9.

However, this connection has no function because at the ES wall the upper pole rests safely in its position – contrary to the EN wall where the upper pole hovers in the air. For this reason the securing system of the EN wall was overtaken without any further investigation of the situation of the ES wall i.e. if there would be a necessity to insert a beam and to connect the upper pole with it. So, the securing with the iron wires has no definite meaning for the stability of the upper part of the ES wall, because the beam itself is secured safely against sliding forward due to the iron pins in the beam he rests on. Even there are no loose mountains or figures that would have been needed to be secured. Contrary the iron wires caused some damage as they have cut into the clay surface and have produced some losses. By now the wires are quite loose.

### Reattachment of the *sudhana* ES 5.7

The *sudhana* (ES 5.7) was once detached and reattached. For his reattachment a new wooden peg was made and he was fixed by it to its original position. The anchoring of the new peg in the dowel drill is absolutely stable. However, an iron wire was torn around the wooden peg and it was secured by an iron nail to the mountain behind it. Moreover, an iron bracket was cut into the back of the figure, and by an iron wire it was connected with another iron nail that was cut into the mountain behind it. The *sudhana* shows not his identical position by now; the new wooden peg was made too long and therefore the figure protrudes. Additionally it is bowed even more than it usually has been and so it looks like it had tilted and would be in danger to fall off. This de- and reattachment was probably done during the restoration from 1981-85. Because of his obvious bowing a temporarily fixation by a wooden stick between figure and lattice was done as later treatment.

### Fixation of the pagoda ES 5.A1

In the year 2011 the Pagoda was fixed with a cord and a stainless steel iron screw with an eyelet to the beam that was inserted to secure the upper pole during the treatment of 1981-85. The fixation was done by Maximilian Knidlberger during a work-stay for conservation work at the EN wall. Probably even in 1981-85 one iron wire was torn around the pagoda and the mountain ES 5.S2 to intensify the connection.



### Completion of the lost plaster surfaces of the wall

Behind the left attending *bodhisattva* (ES 5.30) and on the left exterior edge of the wall in level with the two rows of figures a new plaster was applied to the wall. Presumably this was done during the treatment of 1981-85. It is unknown if remnants of the old plaster are preserved underneath the repair plaster layer.

### Rebuilding of the right corner

Maybe in 1981-85 the right corner was treated. During that treatment fragments of sculptures from all over the temple, broken adobe bricks and floor tiles were filled in the hole in the corner to rebuild the dais beneath the *bodhisattva* ES 5.31.<sup>23</sup>

Even the entire dais got a new plaster. But the level of the surface is too high now, for the feet of the pedestal are lower than the top of the plaster is.



Fig. 46

The upper part of the mountain scenery is connected with iron wires and iron nails to the beam inserted in 1981-85.



Fig. 47

Fixation of the pagoda 5.A1 with a cord to the beam inserted in 1981-85.



Fig. 48

Reattachment of *sudhana* ES 5.7: Visible are the too long wooden peg and the iron wires.

<sup>23</sup> During countersinking the right corner in 2013 these remnants were retrieved.

## CONDITION BEFORE CONSERVATION

The general condition of the ES wall is rather good. There are not too many different types of damage and mostly damaged parts are of smaller scale. The types of damage are: cracks in the wall and behind some figures, lost parts, loose and broken parts of ornaments, voids and corroded iron wires. Specific problems were the unknown stability of the pagoda ES 5.A1 and the broken dais in the right corner with the sunken and tilted *bodhisattva* ES 5.31. Furthermore, there was a thick layer of dust on the surfaces with lots of debris all around. In general high humidity, penetrating water, vibrations by earthquakes, airplanes or others and mechanical stress are main causes of damage.

The situation of the *sudhana* ES 5.7 had proven not as damage but as previous repair, contrary as expected.

Following damage and their characteristics and figures or areas with special kinds of damage are described. All damage is marked in mapping fig. 107 and noted in *Tabular overview of damage and treatments*.

### Dust and debris

A thick layer of dust was laying on the figures and the reliefs; even onto the wall it adhered, but in a smaller scale of course. Not only it reduced the coloured impression of the wall distinctly, but also it covered many details of the fine modelling. Partially debris was in the mountain scenery, in the little scenes and on the cloud ledges. Even behind the mountains on the beams of the wooden pole construction lots of dust and debris laid onto. Many fragments were recovered embedded in dust and debris. Numerous vespiaries adhered in the depths of drapes or in undercuts as well as in the ear of the Buddha. Furthermore, many bills and coins were found next to figures, onto the Buddha, the lotus flower seat, the pedestal and the dais.

### Vertical crack in the wall

In the corner between the east and the south wall there is a vertical crack. It is a result of the tilt of the upper part of the wall, i.e. the upper pole. Over years and centuries this part moved a little bit and pressed against the wall with the sculptures and reliefs of the south wall. That can have been caused by the weight of the mountain scenery as well as by vibrations of earthquakes. Even the replacement of the roof in 1981-85 which caused some changes of the wooden pole construction might have reinforced this tendency, because the right end of the upper pole does not rest safely on an element of the wooden pole construction anymore but hovers in the air. Even the left side of the upper pole could have moved a little bit forward, because the pole lies not in the absolutely middle of the two iron pins hit in the beam he is resting on.

As a result of the press even two figures of the GS wall are a little bit loose, but they are still stable.

### Horizontal cracks in the wall

In the lower part of the wall there are cracks in the back of some figures in the row next to the Buddha and in the wall surrounding this part. Causes of damage can be vibrations by earthquakes or even by airplanes in a smaller scale, as well as this part could have been sunken into this bit over the last centuries because of the weight of the figure of the Buddha. Even high humidity can

have stimulated, supported or increased this kind of damage as clay has got a decreased mechanical stability when it is slightly damp and hence there is an increased risk of breaking. But by now the cracks are stable and even the sculptures are not loose.



Fig. 49  
Vespiary adhering in  
drapery.



Fig. 50  
Thick layer of dust lying on  
the figures.



Fig. 51  
Dust and coins lying on the Buddha and the lotus  
flower seat.



Fig. 52  
The northern end of the upper pole rests not completely  
in the middle of the two iron pins.



Fig. 53  
The southern end of the upper pole does not rest on any  
element anymore but it hovers in the air.

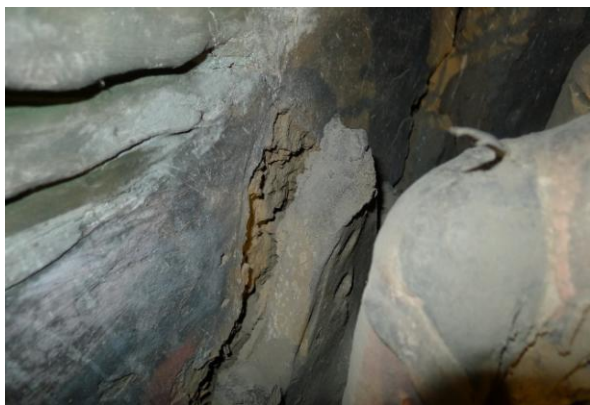


Fig. 54  
Crack in the back of one figure of the two rows.

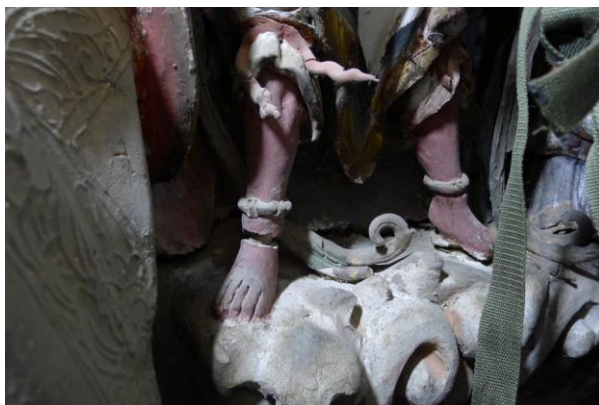


Fig. 55  
Horizontal crack in the wall in level with lower figures.



### **Pagoda (ES 5.A1)**

The pagoda was already fixed in former times with a cord and an iron wire. It is attached with two wooden pegs to mountain ES 5.S2. At the upper peg the distance between the back of the pagoda and the mountain is 6-7 cm, at the lower peg the distance is 2 cm but contrary to the figures there is no clay jacketing the pegs. Out of that observation the pagoda might have tilted a bit. However, the pagoda is nearly absolutely stable and only very slightly movable.

### **Right corner with broken dais and tilted *bodhisattva* ES 5.31**

The surface of the dais in the right corner was broken. Therefore the *bodhisattva* had been sunken into the broken surface of the dais and did not stand upright anymore. He had tilted forwards and his right hand touched the pedestal. As a temporarily fixation a wooden stick between him and the lattice stabilised his position.

High humidity might be the cause of this damage or at least it might have stimulated, supported or increased this kind of damage because of the decreased mechanical stability of slightly damp clay. Even vibrations by earthquakes might be causes of damage.

### **Lost parts**

Even if the ES wall looks quite complete there are some elements missing. In the mountain scenery there are definitely some entire elements like clouds lost as imprints show. Even in the right little scene a whole figure is missing (ES 5.13). Furthermore, many attributes, parts of ornaments, decoration, edges of clouds and *piaodai* as well as forearms of two *tianwang* (ES 5.18 and ES 5.27) are lost. Causes of damage might be human activity like repairs and cleaning of the building; it resulted in bent or distorted parts and in losses in the end. As well corrosion of wires and vibrations of earthquakes might have caused some losses. This type of damage affects often elements protruding and modelled over iron wires or thin wooden sticks.

### **Loose and broken parts**

Mostly protruding elements like arms, hands, *piaodai*, edges of clouds, parts of ornaments and decoration or even heads are loose or broken. The main reasons of this damage might be a decrease of the adhesion of clay to clay, if single parts are made separately and then attached to each other, or broken wire connections like hooks and loops. Moreover, human activity in the form of treatments like repairs or cleaning as well as vibrations of earthquakes might have produced loosing.

### **Voids**

There are only few voids between the different layers of clay plaster. Behind the figures of the lower of the two rows and in the right corner at the ES as well as at the GS wall are voids. Causes of damage can be a loss of adhesion between the different layers of clay plaster as a result of humidity or a worse connection between the clay layers themselves.

### **Iron wires**

Iron wires used as support elements for fingers, ornaments or flying bands show serious damage. The most urgent problem is the corrosion of iron wires that are exposed to the air and thus to

humidity, too. Corrosion leads to decreased flexibility: the wires tend to break under the weight of the clay modelling or by any touch and often they are already broken. Furthermore, the increase of the bulk caused by corrosion generates cracks in the clay modelling, resulting in even more fragility, losses of clay modelling and in the end even more wire gets exposed to the air. Especially thin wires exposed to the air are really fragile and run risk to break.

Another kind of damage to elements with wire reinforcement is caused by mechanical stress. Elements with a core of wire might remain stable against a slight touch or even a slight bending, but against more force they break. Breaks can run across the element or along the wire as many *piaodai* or decorations of head gear show.



Fig. 56  
Temporarily fixation of the sunken and tilted *bodhisattva* ES 5.31.



Fig. 57  
The surface of the broken dais was covered with lots of dust and debris; even broken tiles are visible.



Fig. 58  
At cloud ES 5.53 an element, presumably a cloud, is lost.



Fig. 59  
Lost clouds or cloud parts around ES 5.4.





Fig. 60  
A lot of the clay modelled decoration of the pedestal is lost.



Fig. 61  
*Tianwang* ES 5.24: Lots of decoration like the *piaodai* in front of the legs is lost; the air-exposed iron wires show corrosion.



Fig. 62  
Figure ES 5.25: Lots of decoration like ornaments of the head gear or parts of the *piaodai* in front of the legs is lost. Even the gloriole is broken.



Fig. 63

*Tianwang* ES 5.27: The *piaodai* in front of the legs is nearly complete lost only a lanyard is remaining. In level with the knees two looped iron wires are remnants of that *piaodai*; they show corrosion. The *piaodai* surrounding the figure shows cracks.



Fig. 64

Both pending cords of the belt are broken and at the left one the lower part and at the right one the upper part is lost. At the right one the strings of the tassel are lost, too, and the cord has even tilted. At the left cord the complete tassel is remaining.



## CONSERVATION TREATMENT

The objectives of this work-stay included the following items according to the visible damages:

- a) Cleaning of sculptures and reliefs
- b) Examination of the vertical crack in the corner
- c) Examination of the horizontal cracks in the wall
- d) Examination of the cracks in the back of some figures in the rows next to the Buddha
- e) Fixation of the pagoda (ES 5.A1) on the left hand side on the top
- f) Reattachment of the *sudhana* (ES 5.7) on the right hand side on the top
- g) Lifting of the attending *bodhisattva* (ES 5.31) on the right hand side of the Buddha, who was sunken into the dais, rebuilding of the dais and re-inserting of the figure onto the dais
- h) Gluing of loose or broken parts
- i) Grouting of voids
- k) Conservation of iron wires

The most urgent items were the cleaning, the examination of the cracks, the fixation and re-attachment of the two sculptures and the rebuilding of the dais. The gluing, the grouting and the conservation of iron wires should be finished as far as possible. Detailed cleaning, removal of residues and consolidation of paint layers were not planned. All started work-steps should be ended, that means that no temporary supporting fixations for reattachments or during the drying period of clay suspensions were allowed to be left over.

As the construction of the entire wall (wall, upper part, figures) is quite similar at the southern and the northern part of the east wall and as the causes and kinds of damage were identical or similar it was possible to adopt the conservation concept of the EN wall and the methods carried out there for the ES wall in large part. But at the same time there were different problems to solve at the southern part. The ideological and the technical requirements for the materials at the ES wall were identical to them at the EN wall. Therefore the same materials were used.

The most significant difference for the work process was the fact, that at the ES wall the upper part of the wall with the mountain scenery was stable and therefore had not to be treated and re-fixed. Further the wires from 1981-85, which are torn around the upper pole and the beam inserted in 1981-85, were not demounted, because they were quite loose and did not affect the surface of the surrounding mountains.

In the following the single methods and work steps are described. Furthermore, a detailed overview of all interventions is given in *Tabular overview of treatments carried* and all conservation treatments are mapped in the figures 108.

### Cleaning of sculptures and reliefs

The dirt and dust was swept from the surface of the sculptures, the reliefs and the wall with soft paint brushes and it was absorbed with a vacuum cleaner. Over the tube of the vacuum cleaner a net was put to avoid small fragments, i.e. lost pieces of sculptures and ornaments, to be sucked in. All fragments were collected to catalogue them (see *Cataloguing of findings*). Mostly the debris was collected by hands, sometimes tools like a spoon or a flexible grab tool were used. Debris behind the mountains on the poles and beams of the wooden pole construction was cleaned in the same way as far as possible. The adhering vespiaries were detached mechanically by a spatula and absorbed. The bills and coins were collected and transferred to the offertory boxes.

As the closing step of the work-stay sculptures, reliefs and the wall were dusted off again to remove all dust that was dispersed during the work and had laid down on the surface.



Fig. 65  
*Tianwang* ES 5.27 before cleaning.



Fig. 66  
*Tianwang* ES 5.27 after cleaning.



Fig. 67  
Canopy ES 5.A2 before cleaning.



Fig. 68  
Canopy ES 5.A2 after cleaning.

### Examination of the vertical crack in the corner

As the examination of the vertical crack in the right corner had proven this damage as a result of a slight tilt of the upper pole, the upper pole had to be secured to avoid any more tilt and press against the south wall. For its northern end rests safely in between two iron pins only the right end of the pole had to be fixed. The connection was done to the beam inserted in 1981-85, that rests stable and is not related to the roof. Thus a stainless steel hanging wire (1.5 mm diameter) was torn around both elements. In between the two looped edges of the wire which are secured with stainless steel eyes (4 pieces per end) a stainless steel turnbuckle was brought into to hold the ends of the wire together. The turnbuckle was slightly tightened for an appropriate tension of the wire. But the upper pole was not torn back. In the same way a second wire was installed to the pole and the beam.



Fig. 69

The northern end of the upper pole does not lie on any element therefore it is connected with the beam inserted in 1981-85.



Fig. 70

Securing of the upper pole to the beam with two stainless steel wires.

### Examination of the horizontal cracks in the wall

The cracks both in the back of some figures in the row next to the Buddha and in the wall surrounding this part are stable and even the sculptures are not loose. But to ensure this state the gaps in between the figures were dusted off and the situation was checked once more. Even now the figures remained stable. Therefore there was no necessity to intervene in this stable structure. But it seemed reasonable to give the possibility to examine this situation during the next time. Thus “bridges” were brought into the cracks, meaning that small wooden sticks were attached with clay on one side of the crack. These will fall off if there will be any further moving of the crack. In this case treatments will have to start to preserve these parts of the ES wall.



### Fixation of the pagoda (ES 5.A1)

Even if the pagoda was stable, it was fixed as its two pegs protrude a bit out of the dowel drill. Its fixation was done with a stainless steel hanging wire that surrounds the pagoda, was put on both sides next to the upper wooden peg through the mountain, i.e. the reed bundle, to the back of the mountain scenery and was torn around the beam of 1985. The principle of securing the wire was the same as explained with the pole above: The stainless steel hanging wire (1.5 mm diameter) surrounds both elements. In between the two looped edges of the wire which were secured with a stainless steel eye a stainless steel turnbuckle was brought into to hold the ends of the wire together. The turnbuckle was slightly tightened for an appropriate tension of the wire. Right in front where the wires go into the mountain a stainless steel clamp was inserted to keep them together and to inhibit them to cut into the clay-modelled mountain. To the front the wire was enclosed in silk paper and partially half bamboo pegs were inserted between the surface of the pagoda and the wire to inhibit it of cutting into the clay surface of the pagoda.



Fig. 71  
The stainless steel wire extends into the mountain both sides of the wooden peg.



Fig.72  
The stainless steel wire is encased with silk paper.



Fig. 73  
The stainless steel clamp holds both parts of the encased wire together in order that the wire cannot cut into the surface.



Fig. 74  
The stainless steel wire is torn around the later inserted beam and a stainless steel turnbuckle holds the looped ends together.



**Reattachment of the *sudhana* (ES 5.7)**

The *sudhana* had not tilted and was not instable, but the reason why it looked like this was the too long and not original wooden peg. The figure was taken off the wall and the peg was taken off the figure. A new wooden peg was made and with it the figure was accurately fitting connected to the wall. This peg consisted of two wooden pegs which were connected with each other by a stainless steel winding rod; this connection was reinforced by a stainless steel clamp on each wooden part. Simultaneously with its insertion into the dowel drill hemp fibres were inserted in for best possible connection. The peg itself was secured to the beam of 1985 twice with stainless steel wires (1.5 mm diameter). A stainless steel loop surrounded each wooden peg and a stainless steel turnbuckle connected this loop with another loop of the wire that surrounded the beam each time. On those parts, where the turnbuckle touched the surface, a folded silk paper was laid in between. Furthermore, at the back of the mountain scenery one surrounding wire was connected with one beam of the wooden pole construction to hinder it to press against the clay surface. This was done by a turnbuckle that was hooked in the wire and was connected with another turnbuckle by a looped stainless steel wire. The fixation to the beam was done by a hooked stainless steel screw.

Then the figure was set up onto the peg. For further insurance a stainless steel wire (1.5 mm diameter) was torn around the figure and was connected with the beam of 1985. The end of the wire close to the figure was secured with four stainless steel eyes. The other end was looped and secured with four stainless steel eyes, too. The connection of the wire with the beam was done by a stainless steel turnbuckle that's one end reached into the looped edge of the wire and the other into the eyelet of a stainless steel screw. Around the waist of the figure the wire was wrapped with silk paper to inhibit it to cut into the clay surface.

**Fixation of the loose figures of the GS wall**

The two loose figures of the GS wall were temporarily fixed with a cord. They will have to be definitely fixed when there will be treatments at the GS wall.



Fig. 75  
The *sudhana* ES 5.7 was reattached to the wall with a too long wooden peg.



Fig. 76  
Dowel drill after the detachment of the *sudhana*.



Fig. 77  
After the detachment of the *sudhana* his inner construction and his original bowing is visible.



Fig. 78  
The new wooden peg is made of two separate pegs in regard to an accurately fitting reattachment.



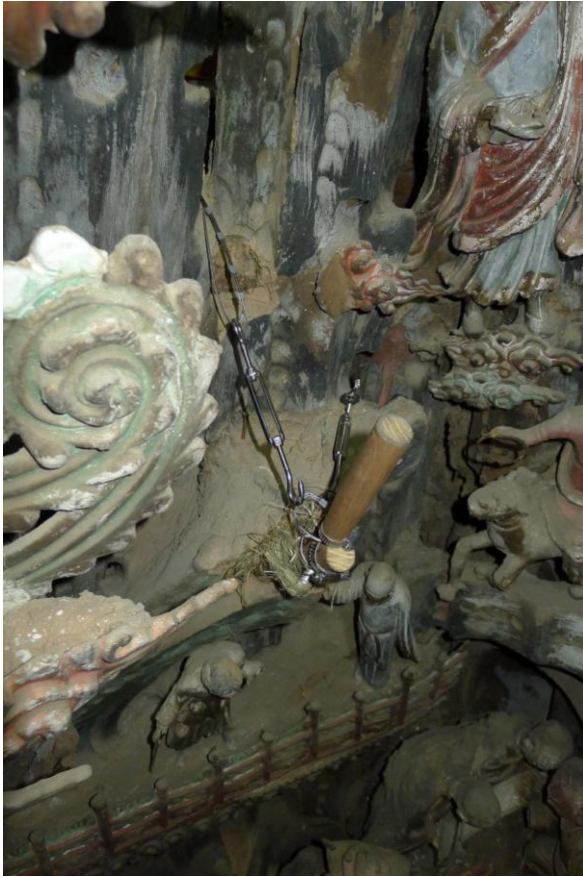


Fig. 79  
The peg is attached to the dowel drill and secured with two stainless steel wires to the beam of 1985.

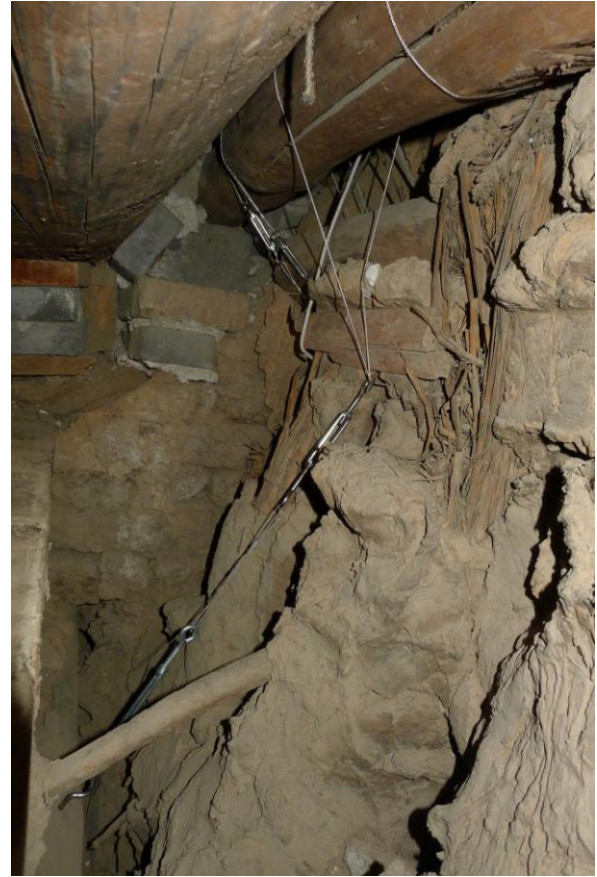


Fig. 80  
One wire is connected by turnbuckles and a looped wire with a beam of the wooden pole construction.



Fig. 81  
The *sudhana* is reattached to his original position and is additionally secured to the beam of 1985.



### Rebuilding of the dais

For rebuilding the broken dais it was necessary to bring the sunken *bodhisattva* out of the very narrow corner. So, the figure was wrapped and it was tied to a pulley. The pulley was fixed to the scaffold and step by step the figure was lifted, brought out of the corner and then deposited between the dais and the bars. In a later step the *bodhisattva* was transferred once more. The still wrapped figure was moved out of its position and laid on a desk to be treated there.<sup>14</sup> Tied to the pulley the figure was lifted then a bracket was tied to its back to reinforce the figure and secure it against breaking during the movement from the vertical into the horizontal. In the horizontal it was moved to the desk and laid on to upholstery.

To rebuild the corner sand and debris had to be removed. Even fragments were found in this broken part of the dais; they were underneath the surface of the dais and were once used to help to rebuild the broken dais. The findings were collected to catalogue them (see Cataloguing of findings). When the first firm bricks appeared there was a gap in their middle wherein the original peg of the *bodhisattva* had been in former times of all probability. Out of this level the dais was built up by filling the interspaces between these firm bricks with smaller and bigger angled stones from the river nearby. Then two layers of unburned clay bricks were inserted into the hole and their interspaces were filled with a clay plaster with straw. On top first a clay plaster with straw and then a clay plaster with hemp fibres were brought onto to build the new surface. Each layer was condensed by hitting with a hammer on a wooden panel. In the middle of the corner a hole was left free to insert the *bodhisattva* again.

However, the re-inserting of the figure could not be finished in this work-stay. But a new wooden peg was made (3.3 cm diameter). It reaches 21.0 cm into the figure and 17.0 cm will reach into the dais. It was connected with the old wooden, but broken, peg with two stainless steel clamps and the remaining interspaces in the dowel drill was filled with hemp fibres and clay. The figure was transferred to a room next to the hall where it will be stored until it will be re-inserted.

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<sup>14</sup> This was an instruction of the Chinese side, i.e. Mrs. Yang Qiuying.



Fig. 83  
Lifting the *bodhisattva* by a pulley.



Fig. 82  
Because of the close-by pedestal and *tianwang* of the GS wall the corner is very narrow.



Fig. 84  
The corner after removal of the *bodhisattva*.



Fig. 85  
After removing sand and debris the first firm bricks appeared.



Fig. 86  
The level of the first firm bricks is distinctly deeper than that one of the pedestal.





Fig. 87  
A first layer of angled stones is filled in between the bricks.



Fig. 88  
The layer of stones is condensed by hitting.



Fig. 89  
The layer of coarse clay plaster with straw after being hit. By the wooden poles in the middle a whole is left for the re-inserting of the *bodhisattva*.



Fig. 90  
The layer of fine clay plaster is applied onto the coarse clay plaster.



Fig. 91  
The layer of fine clay plaster with hemp fibres after being hit. The surface of the new plaster is in level with the surface of a remnant of the original one (left front corner).



Fig. 92  
The layer of fine clay plaster with hemp fibres after being hit. The remnant of the original clay plaster is visible in the front.





Fig. 93  
The plinth of *bodhisattva* ES 5.31 with the broken or decayed original wooden peg.



Fig. 94  
The new wooden peg is wrapped with hemp fibres on that end that will extend into the plinth.



Fig. 95  
The new pegs will extend 17.0 cm into the dais.



Fig. 96  
The new peg is connected to the original one with stainless steel clamps.

### **Conservation of loose or broken parts**

The materials for gluing were developed in test-series over the years. For gluing or filling small losses or cracks there exist four different materials. According to the necessity of each damaged part the material was chosen particularly. The four mixtures are:

a) clay-hemp-mixture in the ratio of sieved clay 10 volume parts, sieved sand 2 volume parts, water 7-10 volume parts and hemp paper. If its use was to be a filling mass then one volume part of pumice was added to two volume parts of this mixture. The quality of this material is characterized as quite solid and coarse; for this reason it can be used for filling and modelling smaller parts.

b) clay-pumice-mixture in the ratio of sieved clay 5 volume parts, water 5 volume parts and fine pumice 7 volume parts. The quality of this material is characterized as finer and softer as the clay-hemp-mixture but it is still quite solid and granular and hence suitable for gluing larger parts.

c) clay-microballoons-tylose-mixture in the ratio of clay 6 volume parts, water 4 volume parts, microballoons (Scotchlite K1) 15 volume parts and Tylose MH 300, 3% in water, 2 volume parts. The quality of this material is characterized as fine and light and therefore suitable for gluing smaller parts as well as to inject it into cracks and to glue them. Because of the added tylose there is an even better gluing-ability.

d) clay-microballons-tylose-mixture in the ratio of sieved clay 5 volume parts, water 5 volume parts, microballoons (Scotchlite K1) 2 volume parts and Tylose MH 300, 0,5% in water, 3 volume parts. The quality of this material is characterized as to be very fine, soft and light, to have got a very good flowing-quality and therefore to be absolutely suitable to inject it into even fine cracks and to glue them. Because of the added tylose there is an even better gluing-ability.

In specific cases, like damaged parts with only minor surface, Tylose MH 300 (0,5% in water) was applied to the surface before the gluing-material was applied to in reason to reinforce the gluing.

The gluing-materials were brought onto the surface with a spatula or a syringe and the part was fixed with clamps or strings for example. Sometimes pieces had to be stabilised temporarily before their treatment in order to prevent damage or losses. As well they were stabilised until the gluing material had dried and the connection was stable again. Fillings were only made if they were necessary for the stability of the element.

### **Grouting of voids**

The grouting of the voids was carried out with a special mixture of clay, water, microballoons (Scotchlite K1) and Tylose MH 300, 3% in water, in the ratio of clay 6 volume parts, water 5 volume parts, microballoons 15 volume parts and tylose 2 volume parts. To bring the material into the void an injection-tube was used and the grouting material was injected by syringe. To hinder the material from flowing out of the void a filling mass of clay and straw was brought onto the edges, if necessary. The void was filled in repeated steps by injection.

### **Conservation of iron wires**

The corroded iron wires were isolated with Paraloid B 48 N, 15% in Ethyl Acetate. With a paint brush the material was applied to the surface of each iron wire.



Fig. 97  
The cloud tail is glued and is temporarily fixed with a wood until the gluing material is dried.

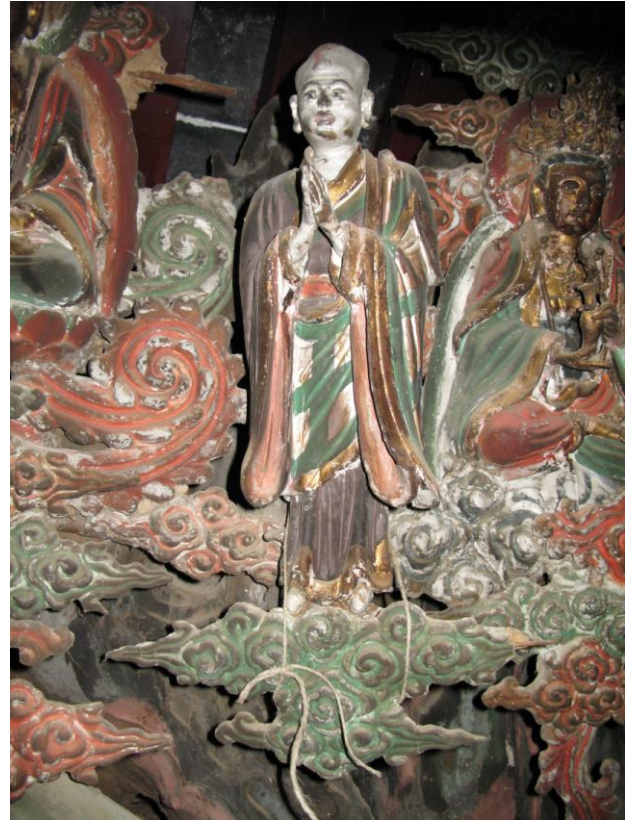


Fig. 98  
Figure ES 5.5: Fixation of the cloud underneath with a cord until the loose part is stable.



Fig. 99  
Temporarily fixation of a forearm over the period of drying.



Fig. 100  
Temporarily fixation with a clamp.



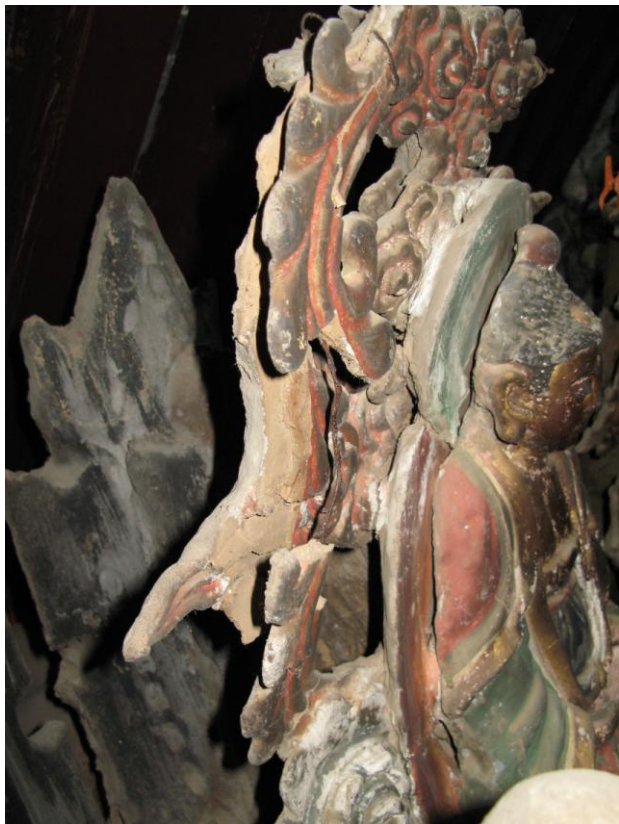


Fig. 101  
The adhesion of both parts of cloud ES 5.Y5 is loose, i.e. broken.



Fig. 102  
Fixation of the glued part with clamps. The reattached topmost cloud is temporarily fixed with a cord while drying.



Fig. 103  
The ornament at the right corner of the pedestal is fixed with a string while the gluing material is drying.



Fig. 104  
The filling seals the edges of the plaster while grouting. An end of an injection tube is visible.



Fig. 105  
Injection tube for grouting.

## **MAPPING OF DAMAGE AND TREATMENTS**

As a first step during the work on-site a schematic drawing of the ES wall was prepared. On copies the previous repairs and the different kinds of damage were marked with different colours while examining the wall. The mapping of treatments was carried out parallel to each single work step.

The handmade mappings of damage and treatments had been transferred into an electronic version by using the software *photoshop*. This was done by Laura Thiemann.



## Legend

**Construction****Situation before treatment****Treatments in 2011****Treatments in 2013**

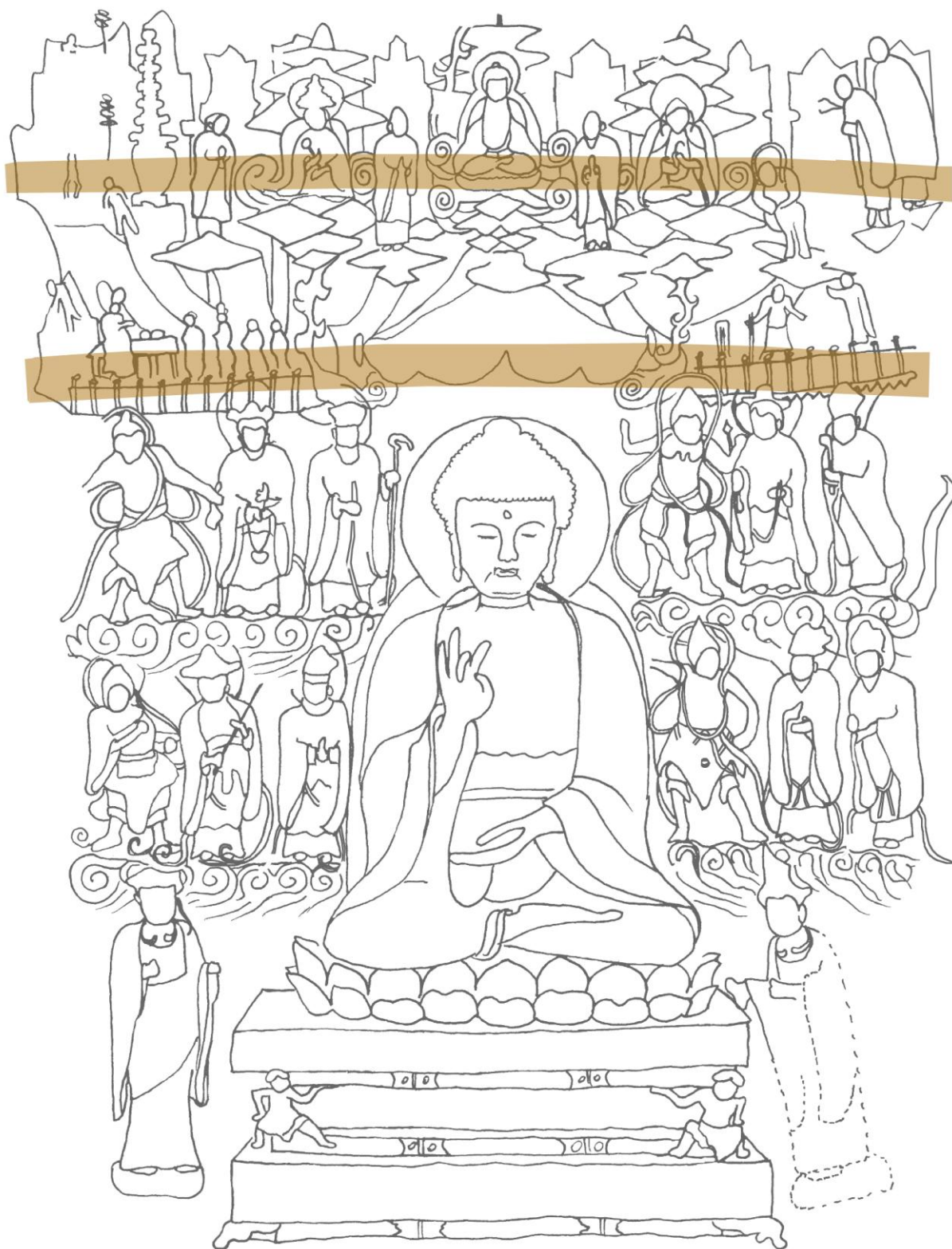


Fig. 106  
Position of upper and lower pole behind mountain scenery

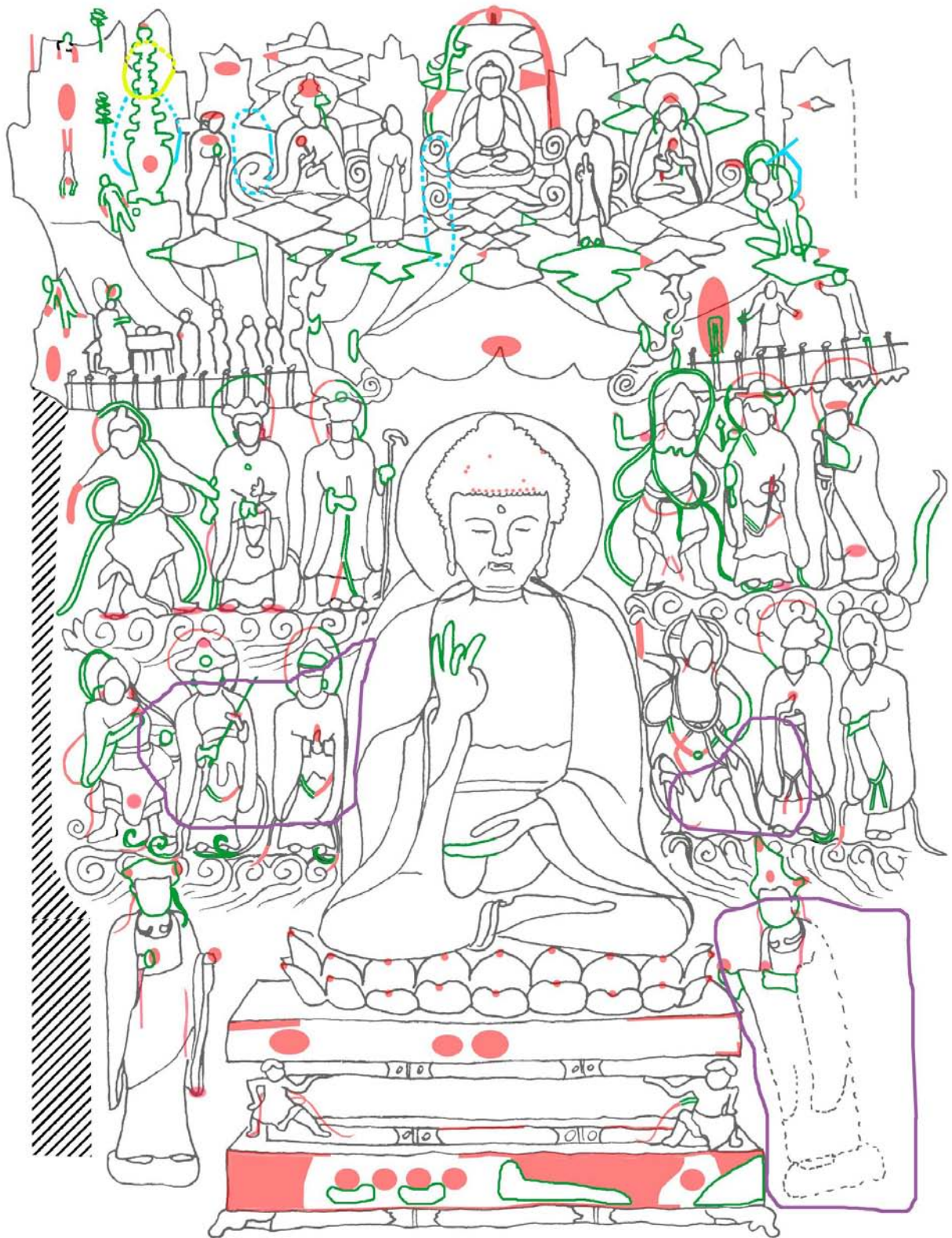


Fig. 107  
Previous repairs and situation of damage



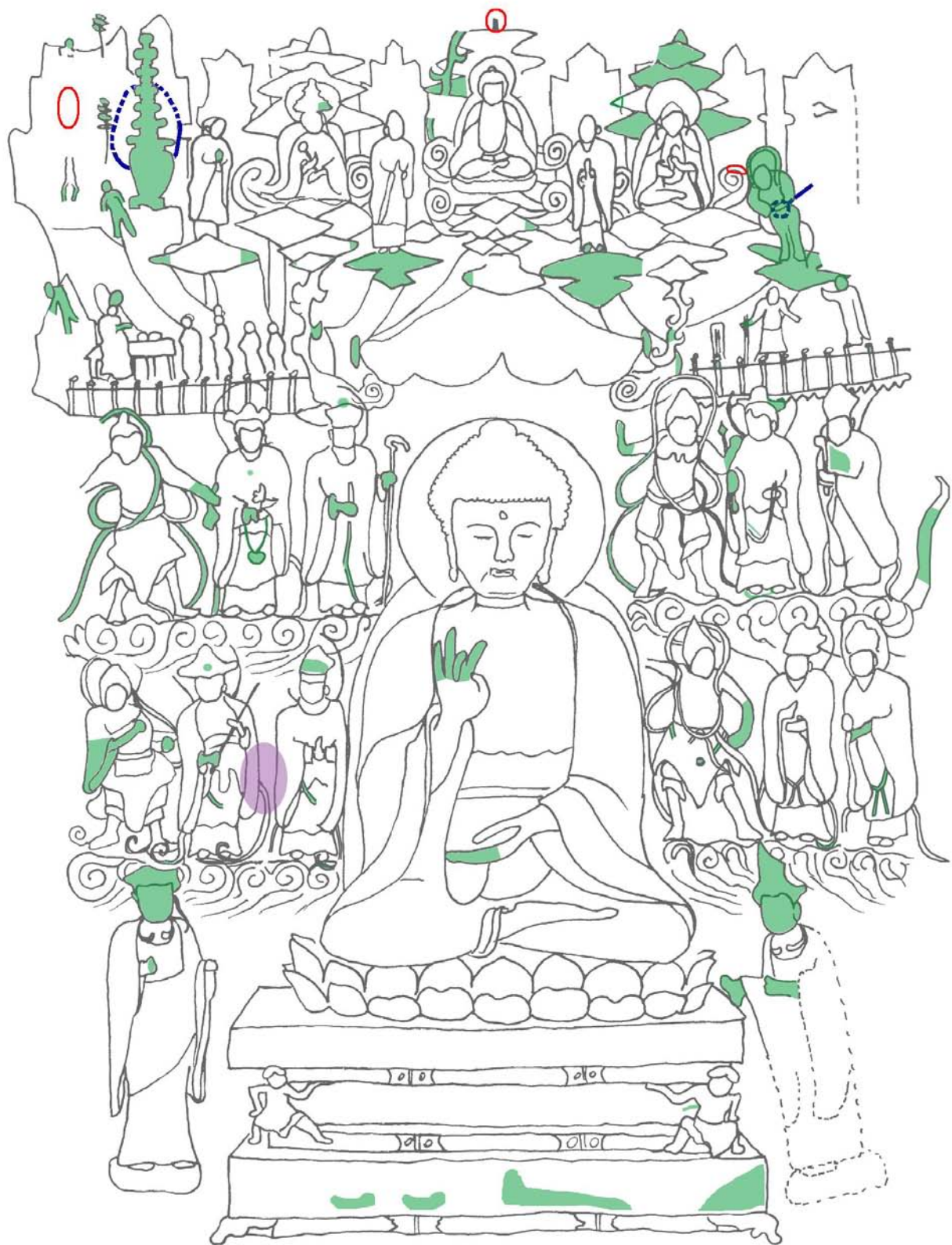


Fig. 108  
Conservation treatment done in 2013

## TABULAR OVERVIEW OF DAMAGE AND TREATMENTS

### Figures

<i>Number</i>	<i>damage</i>	<i>treatment</i>
ES BU 5 Buddha	<ul style="list-style-type: none"> <li>- missing: divers curls</li> <li>- loose: divers curls, all fingers except the thumb of both hands</li> <li>- crack: right earlobe, between chin and neck, along the base of the neck, all fingers of the right hand, on the back of the right hand, all fingers except the little finger of the left hand, between the back and the aureole, in the level of the elbows behind the Buddha</li> </ul>	<ul style="list-style-type: none"> <li>- removal of the very loose left forefinger in view of a professional reattachment</li> <li>- all fingers grouted with grouting material and agglutinated with clay-hemp-material</li> </ul>
ES 5.1	<ul style="list-style-type: none"> <li>- missing: divers pieces of the head gear, parts of the decoration at the chest</li> <li>- loose: piece on the plate</li> </ul>	<ul style="list-style-type: none"> <li>- loose piece on the plate agglutinated with clay-pumice-mixture</li> </ul>
ES 5.2 <i>bodhisattva</i>	<ul style="list-style-type: none"> <li>- missing: divers pieces of the head gear, pieces of the flower</li> <li>- loose: <i>piaodai</i> right next to the head, right lower piece of the head gear</li> <li>- crack: <i>piaodai</i> right next to the head</li> </ul>	<ul style="list-style-type: none"> <li>- <i>piaodai</i> and pieces of the head gear agglutinated with clay-pumice-mixture</li> </ul>
ES 5.5 monk	<ul style="list-style-type: none"> <li>- loose: both feet</li> </ul>	<ul style="list-style-type: none"> <li>- both feet agglutinated with clay-pumice-mixture</li> </ul>
ES 5.6 <i>bodhisattva</i>	<ul style="list-style-type: none"> <li>- missing: pieces of the head gear, attribute in his hands, end of the right <i>piaodai</i> in front of the body</li> <li>- loose: both <i>piaodai</i> next to the head, end of the left <i>piaodai</i> in front of the body</li> </ul>	<ul style="list-style-type: none"> <li>- all <i>piaodai</i> agglutinated with clay-pumice-mixture</li> </ul>
ES 5.7 <i>sudhana</i>	<ul style="list-style-type: none"> <li>- missing: pieces of the <i>piaodai</i> right next to the figure</li> <li>- loose: entire figure, left leg, pieces of the <i>piaodai</i> on both sides of the figure, <i>piaodai</i> above and below the figure</li> <li>- crack: <i>piaodai</i> left next to the figure</li> </ul>	<ul style="list-style-type: none"> <li>- all <i>piaodai</i> agglutinated with clay-pumice-mixture</li> <li>- left leg agglutinated with clay-pumice-mixture</li> </ul>
ES 5.8 godhead	<ul style="list-style-type: none"> <li>- missing: pieces of the head gear</li> <li>- loose: right hand, top of the head gear</li> </ul>	<ul style="list-style-type: none"> <li>- right hand agglutinated with clay-pumice-mixture</li> <li>- top of the head gear agglutinated with clay-pumice-mixture</li> </ul>
ES 5.9	<ul style="list-style-type: none"> <li>- missing: left hand, fingers of the right hand</li> </ul>	
ES 5.13	<ul style="list-style-type: none"> <li>- missing: entire figure excluded the wooden peg and the back of the legs</li> <li>- loose: wooden peg and the back of the legs</li> </ul>	
ES 5.14	<ul style="list-style-type: none"> <li>- missing: left hand, forearm of the right hand</li> <li>- loose: right hand</li> </ul>	<ul style="list-style-type: none"> <li>- right hand agglutinated and interspaces filled with clay-hemp-mixture</li> </ul>
ES 5.15	<ul style="list-style-type: none"> <li>- missing: right hand</li> <li>- loose: head</li> </ul>	<ul style="list-style-type: none"> <li>- head agglutinated with clay-pumice-mixture</li> </ul>
ES 5.18 <i>tianwang</i>	<ul style="list-style-type: none"> <li>- missing: right forearm, left elbow, pieces of the <i>piaodai</i> around the figure, in front of the chest and in front of the legs</li> <li>- loose: left arm, <i>piaodai</i> around the head, in front of the chest, left next to the figure, in front of the legs, both sides next to the legs</li> </ul>	<ul style="list-style-type: none"> <li>- left arm agglutinated with clay-pumice-mixture ; interspaces filled with clay-hemp-mixture</li> <li>- <i>piaodai</i> in front of the legs agglutinated with microballoons-tylose-mixture type 2; interspaces filled with clay-hemp-mixture</li> <li>- <i>piaodai</i> around the legs agglutinated with clay-hemp-mixture</li> </ul>
ES 5.19	<ul style="list-style-type: none"> <li>- missing: right part of the gloriolae, piece of <i>piaodai</i> and ornament right next to the head, little finger of the left hand, topmost phalanx of the right forefinger, endings of the <i>piaodai</i> in front of the legs and right next to the figure</li> <li>- loose: divers pieces of the head gear, left earring, left hand, pearl in the level of the chest, <i>piaodai</i> around the figure</li> </ul>	<ul style="list-style-type: none"> <li>- left earring and <i>piaodai</i> in front of the legs agglutinated with clay-hemp-mixture</li> <li>- left hand agglutinated with clay-pumice-mixture</li> </ul>
ES 5.20	<ul style="list-style-type: none"> <li>- missing: left part of the gloriolae, piece of the <i>piaodai</i> right next to the head, left respectively right</li> </ul>	<ul style="list-style-type: none"> <li>- both hands agglutinated with clay-pumice-mixture</li> <li>- piece of the head-gear agglutinated with clay-</li> </ul>

	<p>piece of the cord, ending of the right tassel</p> <ul style="list-style-type: none"> <li>- loose: topmost piece of the head gear, both hands, both endings of the cord, <i>piaodai</i> right next to the head</li> </ul>	<p>pumice mixture</p> <ul style="list-style-type: none"> <li>- cord agglutinated with clay-pumice-mixture</li> <li>- <i>piaodai</i> next to the head agglutinated with clay-pumice-mixture</li> </ul>
ES 5.21 <i>tianwang</i>	<ul style="list-style-type: none"> <li>- missing: ornaments left next to the head, topmost phalanx of the left forefinger, ornament at the right upper arm, part of the attribute in the right hand, pieces of the <i>piaodai</i> in front of the legs</li> <li>- loose: <i>piaodai</i> around head and body and in front of the chest, both forearms, attribute in both hands, ornaments in front of the chest</li> </ul>	<ul style="list-style-type: none"> <li>- left forearm agglutinated with clay-pumice-mixture</li> <li>- attribute in the right hand agglutinated with clay-hemp-mixture</li> <li>- <i>piaodai</i> in front of the chest agglutinated with clay-hemp-mixture</li> <li>- <i>piaodai</i> next to the left leg agglutinated with clay-microballoons-tylose-mixture type 2</li> </ul>
ES 5.22	<ul style="list-style-type: none"> <li>- missing: topmost piece of the gloriolate, some pearls of the head gear, pieces of the <i>piaodai</i> on both sides of the head, pieces of the band in the left hand, pieces of the <i>piaodai</i> in front of the legs</li> <li>- loose: both pieces of the gloriolate, divers pieces of the head gear, right ornament of the decoration of the chest, right hand, <i>piaodai</i> in front of the legs, <i>piaodai</i> left next to the figure</li> </ul>	<ul style="list-style-type: none"> <li>- right hand agglutinated with clay-pumice-mixture</li> <li>- divers pieces of the head gear agglutinated with clay-hemp-mixture</li> <li>- <i>piaodai</i> in front of the legs agglutinated with clay-pumice-mixture</li> </ul>
ES 5.23	<ul style="list-style-type: none"> <li>- missing: divers pieces of the head gear, <i>piaodai</i> and piece of an ornament right next to the head, left part of the gloriolate, ending of the <i>piaodai</i> in front of the legs</li> <li>- loose: left ornament of the decoration of the chest, <i>piaodai</i> in front of the legs</li> </ul>	<ul style="list-style-type: none"> <li>- ornament at the chest agglutinated with clay-pumice-mixture</li> </ul>
ES 5.24 <i>tianwang</i>	<ul style="list-style-type: none"> <li>- missing: little <i>piaodai</i> left next to the head, pieces of the earrings, little finger of the right hand, attribute in the right hand, essential parts of the <i>piaodai</i> in front of the legs, <i>piaodai</i> left next to the stomach and the legs, top of the <i>piaodai</i> right next to the legs,</li> <li>- loose: <i>piaodai</i> above the head, little <i>piaodai</i> right next to the head, right forearm, left hand, <i>piaodai</i> in front of the legs, top of the <i>piaodai</i> next to the left foot</li> </ul>	<ul style="list-style-type: none"> <li>- right forearm agglutinated with clay-pumice-mixture and interspaces filled with clay-hemp-mixture</li> <li>- left hand agglutinated with clay-pumice-mixture; cracks filled with clay-hemp-mixture</li> <li>- top of the <i>piaodai</i> next to the left foot agglutinated with clay-microballoons-tylose-mixture type 2</li> </ul>
ES 5.25	<ul style="list-style-type: none"> <li>- missing: parts of the <i>piaodai</i> above the head, topmost ornament of the head gear, thumb of the left hand, right part of the <i>piaodai</i> in front of the legs, top of the <i>piaodai</i> next to the right foot</li> <li>- loose: both earrings, front part of the head gear, right hand, <i>piaodai</i> in front of the legs and next to both feet</li> </ul>	<ul style="list-style-type: none"> <li>- front part of the head gear agglutinated with clay-pumice-mixture</li> <li>- right hand agglutinated with clay-pumice-mixture</li> <li>- <i>piaodai</i> in front of the legs and next to both feet agglutinated with clay-pumice-mixture</li> </ul>
ES 5.26	<ul style="list-style-type: none"> <li>- missing: <i>piaodai</i> left next to the head, attribute, right part of the <i>piaodai</i> in front of the legs, tops of the <i>piaodai</i> next to both feet</li> <li>- loose: <i>piaodai</i> above the head, divers pieces of the head gear, left earring, <i>piaodai</i> in front of the legs</li> </ul>	<ul style="list-style-type: none"> <li>- divers pieces of the head gear agglutinated with clay-pumice-mixture</li> <li>- <i>piaodai</i> in front of the legs agglutinated with clay-pumice-mixture</li> </ul>
ES 5.27 <i>tianwang</i>	<ul style="list-style-type: none"> <li>- missing: parts of the ear decoration, right forearm, parts of the <i>piaodai</i> in front of the legs, <i>piaodai</i> at the left leg</li> <li>- loose: left forearm, attribute in the left hand, <i>piaodai</i> in front of the legs,</li> <li>- crack: right ankle</li> </ul>	<ul style="list-style-type: none"> <li>- left forearm and attribute agglutinated with clay-pumice-mixture</li> <li>- <i>piaodai</i> in front of the legs agglutinated with clay-pumice-mixture</li> <li>- crack filled with clay-hemp-mixture</li> </ul>
ES 5.28	<ul style="list-style-type: none"> <li>- missing: part of the <i>piaodai</i> around the head, thumb of the right hand, parts of the <i>piaodai</i> in front of the legs</li> <li>- loose: <i>piaodai</i> around the head, top of the <i>piaodai</i> next to the left foot</li> </ul>	<ul style="list-style-type: none"> <li>- <i>piaodai</i> next to left foot agglutinated with clay-pumice-mixture</li> </ul>
ES 5.29	<ul style="list-style-type: none"> <li>- missing: top of the <i>piaodai</i> next to the right foot</li> <li>- loose: left hand, <i>piaodai</i> in front of the legs</li> </ul>	<ul style="list-style-type: none"> <li>- <i>piaodai</i> in front of the legs agglutinated with clay-pumice-mixture</li> <li>- left hand agglutinated with clay-pumice-mixture</li> </ul>



ES 5.30 <i>bodhisattva</i>	<ul style="list-style-type: none"> <li>- missing: divers pieces of the crown, right earlobe, <i>piaodai</i> left next to the head, upper part of the <i>piaodai</i> right next to the head, lower parts of both <i>piaodai</i> in front of the chest, left hand, all fingers and the attribute of the right hand, right top of the sleeve</li> <li>- loose: <i>piaodai</i> right next to the head, head, right hand</li> </ul>	<ul style="list-style-type: none"> <li>- head grouted and agglutinated with clay-pumice-mixture</li> <li>- right hand agglutinated with clay-pumice-mixture and interspaces filled with clay-hemp-mixture</li> <li>- <i>piaodai</i> right next to the head agglutinated with clay-pumice-mixture</li> </ul>
ES 5.31 <i>bodhisattva</i>	<ul style="list-style-type: none"> <li>- missing: divers pieces of the crown, left earlobe, <i>piaodai</i> both sides of the head, <i>piaodai</i> in front of the chest, attribute in both hands</li> <li>- loose: divers pieces of the head gear, head, lower part of the <i>piaodai</i> in front of the chest, both hands,</li> </ul>	<ul style="list-style-type: none"> <li>- head agglutinated with clay-pumice-mixture</li> <li>- both hands agglutinated with clay-pumice-mixture</li> </ul>
ES 5.32	- missing: <i>piaodai</i> both sides of the figure	
ES 5.33	<ul style="list-style-type: none"> <li>- missing: part of the <i>piaodai</i> right next to the figure</li> <li>- loose: part of the <i>piaodai</i> right next to the figure</li> </ul>	- part of the <i>piaodai</i> right next to the figure agglutinated with clay-hemp-mixture

### Architectural elements

<i>Number</i>	<i>damage</i>	<i>treatment</i>
ES 5.A1 pagoda	<ul style="list-style-type: none"> <li>- missing: top, attached piece inside the chamber</li> <li>- loose: entire pagoda, bowl underneath the pagoda</li> </ul>	- pagoda fixed with wire to the beam behind mountain scenery
ES 5.A2 canopy	- loose: right and left cloud, wooden peg of the missing cloud (ES 5.Y22)	- both clouds agglutinated with clay-pumice-mixture
ES 5.A3 lotus flower seat	- missing: divers tops of the petals	
ES 5.A4 pedestal	<ul style="list-style-type: none"> <li>- missing: divers pieces of the ornamentation</li> <li>- loose: divers pieces of the ornamentation</li> </ul>	- divers pieces of the ornamentation agglutinated with grouting material
ES 5.A5 fence	- loose: element of the fence on the right	- fence agglutinated with clay-pumice-mixture
ES 5.A6 fence	- loose: jamb on the right	

### Animals

<i>Number</i>	<i>damage</i>	<i>treatment</i>
ES 5.B1 monkey	<ul style="list-style-type: none"> <li>- missing: both arms</li> <li>- loose: entire figure</li> </ul>	- entire figure agglutinated with clay-hemp-mixture and clay-pumice-mixture
ES 5.B2 monkey	<ul style="list-style-type: none"> <li>- missing: both arms, both lower legs</li> <li>- loose: entire figure</li> </ul>	- entire figure agglutinated with clay-hemp-mixture
ES 5.B3 monkey	<ul style="list-style-type: none"> <li>- missing: head, both legs, tail, bowl in the right hand</li> <li>- loose: both arms at the shoulder</li> <li>- crack/gap: right arm at shoulder and elbow</li> </ul>	- both arms agglutinated with clay-pumice-mixture
ES 5.B4 monkey	<ul style="list-style-type: none"> <li>- missing: left arm, right hand</li> <li>- loose: head</li> </ul>	- head agglutinated with clay-pumice-mixture

### Mountains

<i>Number</i>	<i>damage</i>	<i>treatment</i>
ES 5.S1	- missing: attached piece (monkey?), part of the mountain next to ES 5.B4 and ES 5.B5	- the attached piece was found, see: findings monkey
ES 5.S3	- missing: attached piece (cloud?)	
ES 5.S11	- missing: attached piece (monkey?)	

## Clouds

<i>Number</i>	<i>damage</i>	<i>treatment</i>
ES 5.Y1	- missing: left angle of the topmost cloud	
ES 5.Y2	- missing: top, right angle of the topmost and lowermost cloud	
ES 5.Y3	- missing: left angle of the topmost and third cloud - loose: entire upper part of the cloud, entire lowermost cloud	- clouds agglutinated with clay-hemp-mixture and furthermore partially with clay-pumice-mixture
ES 5.Y5	- missing: complete right side and top, piece on the left in the level of the head of the Buddha - loose: both pieces on the left	- pieces on the left agglutinated with clay-pumice-mixture and partially clay-hemp-mixture
ES 5.Y6r	- missing: two little pieces top right	
ES 5.Y8r	- missing: piece top right	
ES 5.Y9	- loose: left angle	
ES 5.Y10	- loose: right angle of the middle cloud, both angles of the lowermost cloud	- all angles agglutinated with clay-pumice-mixture
ES 5.Y11	- loose: entire cloud	- entire cloud agglutinated with clay-pumice-mixture and clay-hemp-mixture
ES 5.Y13	- loose: right angle of the middle cloud	
ES 5.Y15	- missing: right angle of the upper cloud - loose: entire cloud	- cloud agglutinated with clay-hemp-mixture and partial grouting with clay-pumice-mixture
ES 5.Y17	- missing: right angle of the upper cloud - loose: entire cloud	
ES 5.Y18	- loose: piece in the middle of the cloud band	- piece in the middle of the cloud band with clay-pumice-mixture
ES 5.Y19	- missing: left angle of the upper cloud - loose: left angle of the lower cloud	
ES 5.Y20	- loose: piece in the middle of the cloud band	- piece in the middle of the cloud band agglutinated with clay-hemp-mixture and partially with clay-pumice-mixture
ES 5.Y21	- missing: right angle of the lower cloud - loose: entire cloud	
ES 5.Y22	- missing: entire cloud	
ES 5.Y23	- loose: entire cloud	
ES 5.Y29	- loose: <i>piaodai</i> at the right side - crack: lower part of the <i>piaodai</i> - broken: upper part of the <i>piaodai</i>	- <i>piaodai</i> agglutinated with clay-pumice-mixture and interspaces filled with clay-hemp-mixture

## Trees

<i>Number</i>	<i>damage</i>	<i>treatment</i>
upper tree left next to pagoda ES 5.A1	- missing: top - loose: entire tree	
lower tree left next to pagoda ES 5.A1	- loose: entire tree	

## Findings

<i>Number</i>	<i>damage</i>	<i>treatment</i>
E 3 monkey	- missing	- reattached to the original position between ES 5.B3 and ES 5.B4 at mountain ES 5.S1 - got the consecutively number ES 5.B5 - fixed with a wooden stick to the wall and agglutinated with clay-hemp-mixture
E 4 part of a cloud	- missing	- reattached to the original position at cloud ES 5.Y2 - agglutinated with clay-microballons-tylose-mixture type 2 and clay-hemp-mixture
E 5 part of a cloud	- missing	- reattached to the original position at cloud ES 5.Y8r - agglutinated with clay-hemp-mixture
E 19 string of pearls	- detached from figure ES 5.19	- new iron wire (0,8mm) isolated with Paraloid B 48 N, 15% in Ethyl Acetate; pearls reattached to the string of pearls - reattached to the original position at figure ES 5.19
E 28 left forefinger	- detached from figure ES BU 5	- reattached with a wooden stick to the palm and agglutinated with clay-hemp-mixture
E 77 foot of the left side of the pedestal	- missing	- reattached to the original position at the left side of the pedestal ES 5.A4 - agglutinated with grouting material and interspaces filled with clay-hemp-mixture
E 79 piece of the pedestal decoration	- missing	- reattached to the original position at the right side of the lowest step of the pedestal ES 5.A4 - agglutinated with grouting material



## CATALOGUING OF FINDINGS

During the cleaning a lot of fragments were found in the mountain scenery, on or next to the figures, on the cloud ledges, on the pedestal and on the dais. Most of them were pieces of ornaments of the clothing or the decoration of the figures or parts of *piaodai* or clouds. After lifting the Bodhisattva and countersinking the corner, more fragments were found in this broken part of the dais; they were lying under the surface of the dais and were once used to help to rebuild the broken dais again. Partly these findings were almost intact figures of a small size that do not belong to the ES wall firstly because of their not coinciding size and secondly because there is no agreeing vacancy on the ES wall. Presumably they belong to the richly decorated GS or GN wall or the PY wall, because on these walls figures of this scale are missing. Furthermore one red-coloured forearm with a sword in its hand was found in this corner. One monkey was recovered behind the pagoda ES 5.A1 and one tree was found behind figure ES 5.15. The monkey and the arm could be assigned to the ES wall: the original position of the monkey was between ES 5.B3 and ES 5.B4 at mountain ES 5.S1, the forearm belonged to the *tianwang* ES 5.27. The tree seemed to belong to the EN wall.

The cataloguing of the fragments of the ES wall followed the principles of the cataloguing of the fragments of the EN wall. One difference was the use of the letter “E” instead of the letter “F” previous to the number of the finding. The reason for this change was the then guaranteed possibility to determine directly between a finding of the ES and the EN wall. The cataloguing was completely done by Ms. Gao Yan who had already dealt with it for the EN wall.

The total amount of fragments constituted 105 pieces, whereas some findings comprised several particles. All fragments were dusted off with soft paintbrushes and each single one received an own number, was described, measured, photographed and then stored in polystyrene or polyethylene boxes. Afterwards some of these boxes were packed together in cardboard boxes. The idea of this procedure was to have a complete overview of all found pieces in order to be able to find their original position and to reattach them or at least parts of them to the wall in a later step. By now some findings like the monkey or two fragments of clouds were doubtlessly assigned to their original position at the ES wall and therefore they were reattached to the wall. The monkey was fixed with a wooden stick to its original position and was agglutinated with the hemp-clay-mass with tylose. The parts of clouds were agglutinated with clay-hemp-mixture. Even some broken found fragments could be rejoined; they were glued or at least stored together in one box when there was lack of time.



Fig. 109  
Gao Yan and Wu Xin  
describing and photo-  
graphing the fragments.  
Because of lack of space,  
tables and lighting, the work  
is done in the courtyard.



Fig. 110  
One of the almost intact little figures found while  
countersinking the corner. This figure does not belong to  
the ES wall because of their small size.



Fig. 111  
The tree that was found behind figure ES 5.15 and  
presumably belongs to the EN wall.





Fig. 112  
Buddha ES 5.4 with missing of the topmost cloud.



Fig. 113  
Buddha ES 5.4 with reattached topmost cloud (finding E 4) to its original position at cloud ES 5.Y2.



Fig. 114  
Missing part at mountain ES 5.S1.



Fig. 115  
Finding E 3 reattached to its original position at mountain ES 5.S1.



## CLIMATE MEASURING

Three electronic hygrothermometers were used to measure the climate, i.e. temperature and humidity, during the work-stay. Even if the instruments were not calibrated – tab. 5 and fig. 116 show the light differences of the measuring data – and not completely precise, the basic idea was to get an overview of the general climate as well as a tendency of the relationship between and an overview of the changes inside and outside the fane.

Two of the analysers had two sensors and one had only one sensor. The ones with two sensors were used for measuring inside the building (Number 1 and 2). Number 1 was positioned in the upper zone of the ES wall left next to the left little scene on one pole of the wooden pole construction. Number 2 was positioned in the lower zone of the ES wall in the height of the lotus flower seat on a band of the closed doorway section. The one with one sensor was used for measuring outside the hall (Number 3). It was positioned in front of the hall right next to the entrance on the window frame of the closed doorway section.

Usually temperatures outside and on the two different levels inside the building are quite similar and the rises and falls of the temperature correspond. Only if there are major sudden temperature changes outside it takes some time till the inside of the fane adapts to this new situation.

The humidity outside and inside the hall differs. Usually it is around 5-8% moister on the inside. But at the different levels inside the building the humidity is quite similar. If there are slight changes of humidity of solely some percent outside, the data inside react only very slow and with only 1-2%. However, when there are major changes of the weather there are also major changes on the inside. These occur faster on the lower level closer to the open doorway. In general a stable climate exists inside the temple hall with only little fluctuations caused by changing weather conditions. Former climate measuring showed this, too.

Tab. 5

The three analysers possess slight differences relating to their measuring data. But as the differences are minor it is possible to compare the data measured during the work-stay.

	Nr. 1	Nr. 2	Nr. 3
Sensor 1: temperature (t) relative humidity (rh)	29,0°C 52%	29,5°C 50%	30°C 51%
Sensor 2: temperature (t) relative humidity(rh)	29,8°C 51%	30,2°C 49%	- -

Tab.6

Measured data during the work-stay.

Day/Time	Number1				Number 2				Number 3		Weather
	Sensor1		Sensor2		Sensor1		Sensor2		Sensor 1		
	t in °C	rh in %	t in °C	rh in %	t in °C	rh in %	t in °C	rh in %	t in °C	rh in %	
20.08./18:00	30,2	49	30,1	51	29,9	52	30,1	51	31	46	sunny/slightly cloudy
21.08./09:00	28,3	49	28,0	51	28,4	50	29,0	49	30	44	sunny/slightly cloudy
21.08./13:30	29,9	49	29,3	50	29,3	49	29,7	49	31	42	sunny/cloudy
21.08./18:00	30,0	49	29,6	52	29,8	51	30,1	51	31	46	sunny/slightly cloudy
22.08./09:00	28,7	51	29,3	50	28,8	53	29,5	51	32	42	sunny
22.08./13:30	29,9	50	29,9	52	29,8	51	30,2	50	33	41	sunny
22.08./18:00	30,7	50	30,6	52	30,2	51	30,5	52	32	46	sunny
23.08./09:00	28,6	57	28,4	58	28,4	58	29,0	57	30	54	sunny/slightly cloudy
23.08./13:30	28,8	58	29,3	56	28,9	58	29,5	56	31	50	sunny/cloudy
23.08./17:00	29,4	56	29,6	57	29,6	56	30,0	55	30	52	cloudy
26.08./13:30	28,0	57	28,6	54	28,0	57	28,6	56	31	47	sunny/cloudy
26.08./18:00	28,8	55	29,1	54	28,5	56	28,9	55	30	47	sunny/cloudy
27.08./09:00	28,2	55	28,6	55	28,1	56	28,7	56	29	53	rainy
27.08./13:30	28,6	55	29,1	54	28,6	56	29,2	54	31	47	sunny/cloudy
27.08./18:00	29,2	55	29,6	55	29,4	53	29,6	53	31	47	very cloudy
28.08./08:30	27,3	59	27,5	58	26,8	60	27,1	59	24	70	rainy
28.08./13:30	26,3	60	26,5	60	25,3	64	25,3	66	22	78	rainy
28.08./18:00	25,8	62	26,5	60	24,8	65	25,2	64	23	74	slightly rainy
29.08./09:00	24,9	62	25,1	59	25,0	62	25,7	60	30	50	sunny
29.08./18:00	26,8	44	27,6	39	26,7	51	27,2	47	29	35	sunny
30.08./08:30	24,5	56	25,4	53	24,5	57	25,3	51	25	46	sunny
02.09./10:30	25,0	50	25,5	48	25,0	48	25,6	47	25	47	cloudy
02.09./13:30	25,2	43	25,8	38	25,5	47	26,0	44	27	31	cloudy
02.09./18:00	25,5	51	25,7	52	25,5	51	25,8	58	25	52	cloudy
03.09./09:00	24,0	56	24,8	54	23,7	57	24,2	55	26	51	sunny
03.09./18:00					25,8	52	26,1	51	26	48	cloudy
04.09./09:00	24,2	54	24,9	54	23,9	55	24,4	53	23	58	cloudy
04.09./13:00	24,3	53	24,9	52	24,2	52	24,8	49	24	50	cloudy
05.09./09:00	23,2	55	24,0	53	22,8	56	23,5	55	22	61	cloudy
05.09./13:30	23,8	55	24,6	53	24,2	54	24,9	52	24	53	cloudy
05.09./18:00	24,3	51	24,7	51	24,2	54	25,2	51	26	44	cloudy
06.09./09:00	23,4	56	24,1	54	23,3	57	23,7	56	24	56	sunny
06.09./14:00	24,6	52	25,6	51	24,8	53	25,7	51	28	41	sunny



Fig. 116  
The three  
hygrothermometers with  
differing measuring data,  
even if positioned next to  
each other.



Fig. 117  
Analysers Nr. 1 and 2 positioned left next to the ES  
wall in the height of the little scene and of the lotus  
flower seat.



Fig. 118  
Analyser Nr. 3 positioned outside the building right next to  
the entrance.



## CONCLUSION

The conservation work done in 2013 was the last work on-site in the Shuilu'an within the German-Chinese cooperation for the Preservation of Cultural Heritage as the German-Chinese research project ended with the end of the year 2013. Since the year 2000, when the Shuilu'an was included in this cooperation, following was achieved:

- First conservation tests were made on two figures of the west wall of the Shuilu hall. The basic manufacturing procedure of the sculptures and reliefs was investigated. A photographic documentation of all walls allowed a survey of damages and losses. (2001)
- The work focussed on the relief of deadly accidents on the western (rear) part of the north wall. Further investigation of the basic manufacturing procedure of the sculptures and reliefs was done. A photographic documentation of all walls allowed a survey of damages and losses. (2002)
- The examinations and the conservation work focussed on the west wall and the adjoining part of the north wall in the rear part of the hall. Preparatory tests were carried out in the labs in Munich and Xi'an. (2007-2009)
- A thorough examination and survey of the southern insertion wall was done. (2010)
- Practical conservation work was carried out at the northern part of the east wall. (2011-2012)
- Practical conservation work was carried out at the southern part of the east wall. (2013)

The work included damage assessment and conservation of wall, sculptures and reliefs and partially their polychromy as well as conservation tests for grouting and filling and climate measuring. The main focus of the project was to develop methods for the conservation of the polychrome figures and reliefs inside the hall. Even for specific damages techniques of conservation were developed. Suitable methods for most of all observed damages were found and all results were evaluated over several years. Furthermore, the study and conservation work resulted in a constitutive knowledge about wall construction, manufacturing techniques of figures and reliefs, used materials and causes and phenomena of damage.

But not all walls (middle wall and gable walls) could be examined and treated till the end of the project. As the examination of these walls will give further information about techniques, materials etc. these results will have to be compared with and referred to the results of the walls examined from 2001-2013. Even specific problems in conservation might to be solved at the remaining walls as every wall has shown its specific problems till now. Presumably the tested materials will be suitable for treatment, but eventually they will have to be optimised for specific requirements.

Detailed reports of the work in the Shuilu'an have been published yearly and can be downloaded from the internet:

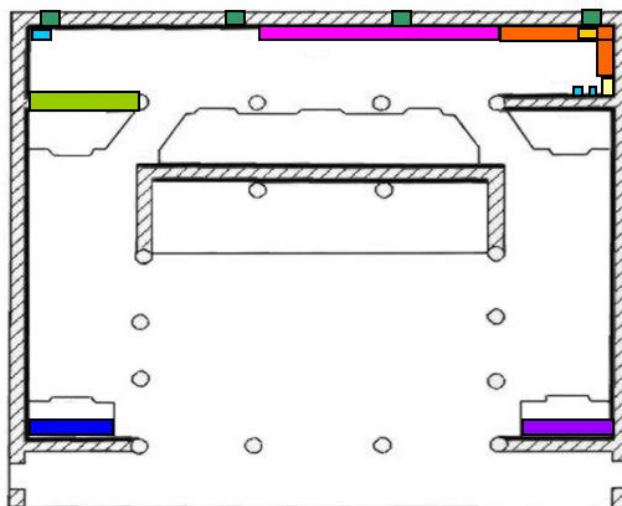
<http://www.rkk.ar.tum.de/en/projekte-und-forschung/china-project-bmbf/research-reports>.

Many persons and institutions were involved and contributed to the success of the work in the Shuilu'an. The funding for the research project was provided by the German Ministry for Education and Research (BMBF). The partner institutions in charge were the Shaanxi Research Institute for the Preservation of Cultural Heritage 陕西省文物保护研究院 on the Chinese and the Bayerisches Landesamt für Denkmalpflege (2001-2006) and the Technische Universität München, Chair of Restoration, Art Technology and Conservation Science (2007-2013) on the German side. Furthermore the Università di Pisa, Dipartimento di Chimica e Chimica industrial for analysis of binding materials, the Central Laboratory of the Bayerisches Landesamt für Denkmalpflege for analysis of inorganic materials, the University of

Heidelberg and the Institute of East Asian Art History for art historical studies were involved. Many free-lanced restorers and students took part in the work on-site as well as the staff of the Shuilu'an and locals from the villages nearby supported the work.

A cordial thank to all who were involved into the work or supported it:

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**Positions of test areas and conservation treatments**

<span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; border: 1px solid black;"></span>	2001
<span style="display: inline-block; width: 15px; height: 15px; background-color: lightyellow; border: 1px solid black;"></span>	2002
<span style="display: inline-block; width: 15px; height: 15px; background-color: orange; border: 1px solid black;"></span>	2007, April
<span style="display: inline-block; width: 15px; height: 15px; background-color: pink; border: 1px solid black;"></span>	2007, September
<span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black;"></span>	2008
<span style="display: inline-block; width: 15px; height: 15px; background-color: cyan; border: 1px solid black;"></span>	2009
<span style="display: inline-block; width: 15px; height: 15px; background-color: limegreen; border: 1px solid black;"></span>	2010
<span style="display: inline-block; width: 15px; height: 15px; background-color: purple; border: 1px solid black;"></span>	2011, 2012
<span style="display: inline-block; width: 15px; height: 15px; background-color: blue; border: 1px solid black;"></span>	2013

Fig. 119

Positions of test areas and conservation treatments from 2001-2013

## **Bericht über den Arbeitsaufenthalt im Shuilu'an, 13. August bis 6. September 2013**

### **Konservierung der Südseite der Ostwand der Shuilu-Halle, Tagesprotokoll**

Teilnehmer:

#### *Deutsche Seite*

Judith Regensburger, wissenschaftliche Mitarbeiterin, TUM

Laura Thiemann, freiberufliche Diplom-Restauratorin

Christian Kaiser, Student TUM

#### *Chinesische Seite*

Yang Qiuying, Projektleiterin, Shaanxi Institute for Conservation

Gao Yan, Shaanxi Institute for Conservation

Wu Xin, Shaanxi Institute for Conservation

### **So, 11./Mo, 12. August**

Abflug in München um 14.15 Uhr über Peking nach Xi'an. Am Flughafen (10.40 Uhr) Abholung durch Gao Yan und Yang Lien und Fahrt in ein Hotel in Xi'an. Anschließend Mittagessen mit den beiden Direktoren des Technischen Zentrums, Zhao Qiang und Wang Jiyuan, bei dem auch Miriam Schanz (TUM) und ihr Team (Katrin Adlfinger und Judith Schieber) dabei sind, die an diesem Tag aus Ziyang gekommen sind und am Abend zurück nach Deutschland fliegen. Gleichzeitig lernen wir Wu Xin kennen, der mit uns im Shuilu'an arbeiten wird.

Am Nachmittag Durchsicht der im Technischen Zentrum gelagerten Kisten mit Arbeitsmaterialien für den Shuilu'an. Anschließend Freizeit (Große Wildganspagode).

### **Di, 13. August**

Fahrt nach Lantian bzw. zum Shuilu'an. Zunächst Bezug der Hotelzimmer in Lantian, anschließend Mittagessen mit dem Behördenleiter, in dessen Verantwortungsbereich der Shuilu'an fällt, Zhao Liang, dem Verwalter des Shuilu'an, und Zhu Yuanyuan, eines Mitarbeiters des Shuilu'an, der uns täglich als Fahrer vom Hotel zum Tempel und zurück bringen wird. Anschließend Fahrt zum Shuilu'an, Ausladen der Kisten und erste Besichtigung der zu bearbeitenden Wand (ES-Wand). Besichtigung der gesamten Tempelanlage.

### **Mi, 14. August**

Aufbau des Gerüsts durch die Gerüstbauer bis in den Nachmittag. Organisation des Arbeitsbereichs neben der ES-Wand (Tische, wichtige Arbeitsmaterialien) und des Lagerbereichs im hinteren Teil des Tempels (später bzw. wenig benötigte Materialien). Nachmittags Vorzustandsaufnahmen der Figuren (Kaiser, Regensburger), Reinigung des Staubsaugers (Thiemann) und Anbringung der Lampen am Gerüst (Kaiser, Wu Xin).

### **Do, 15. August**

Beginn der Oberflächenreinigung der Figuren durch Abkehren des Staubes mit einem Pinsel und Einsaugen des Staubes, sowie Bergung von Fragmenten (Kaiser, Wu Xin). Anfertigung einer schematischen Zeichnung der Wand als Dokumentationsgrundlage (Thiemann, Regensburger). Inventarisierung der Fundstücke (Gao Yan). Organisation der nächsten Tage.

### **Fr, 16. August**

Oberflächenreinigung der Figuren und Bergung von Fundstücken (Kaiser, Wu Xin). Bereitstellung der Arbeitsmaterialien zum Lehmzerkleinern und -sieben, Ordnung der Kisten mit Arbeitsmaterialien (Regensburger). Inventarisierung der Fundstücke (Gao Yan). Beginn Kartierung Schäden (Thiemann, Regensburger).



**Sa, 17. August**

Freizeit in Xi'an. Glockenturm, Trommelturm, muslimisches Viertel mit Wu Xin.

**So, 18. August**

Freizeit in Xi'an. Besichtigung kleine Wildganspagode und Museum der Stadt Xi'an (Thiemann, Kaiser). Erstellung eines Arbeitsplans für die kommende Woche, Arbeit an Bericht und Vortrag für die Tagung in Xi'an im September (Regensburger).

**Mo, 19. August**

Besprechung der Arbeiten für die anstehende Arbeitswoche. Kartierung Schäden (Thiemann, Regensburger). Abschluß der Oberflächenreinigung und anschließendes Sieben des Staubsaugerbeutels wegen möglicher Fundstücke von *bodhisattva* ES 5.31 (Kaiser, Wu Xin). Untersuchung von *bodhisattva* ES 5.31 bzgl. An- und Herausheben, Unterbau etc. Bergung diverser Fundstücke in diesem Bereich (Kaiser, Regensburger). Inventarisierung der Fundstücke und Erstellung der Fundliste (Gao Yan). Lehm zerkleinern (Thiemann, Wu Xin). Untersuchung von *sudhana* (ES 5.7) und Pagode (ES 5.A1) bzgl. Maßnahmen (Kaiser, Regensburger).

**Di, 20. August**

Besprechung der Arbeitsschritte für Dienstag, besonders bzgl. der Maßnahmen am *sudhana*. Diskussion mit Gao Yan hinsichtlich einer Abnahme und Neuanbringung der Figur. Übereinkunft zunächst rückseitig die Situation zu kontrollieren und deshalb an der Außenseite des Tempels oben soweit als nötig Holzbretter zu entfernen. Ausbau einiger Bretter (Kaiser) und grobe Reinigung des Bereichs mit Besen und Schaufel und Staubsauger (Kaiser). Untersuchung der Situation hinsichtlich möglicher Abnahme und Wiederanbringung von *sudhana* und Pagode, Untersuchung Aufbau und Stabilität des oberen Wandabschnitts, d.h. der querliegenden Holzbalken mit Strohhärmierung, die als Grundgerüst für die Anbringung der Figuren dienen (Kaiser, Regensburger). Anfertigung Schnittzeichnung (Kaiser). Kartierung Schäden (Thiemann). Lehmsieben und Sieben des Gesaugten (Wu Xin). Inventarisierung der Fundstücke und Erstellung der Fundliste (Gao Yan). Klimamessung (Thiemann). Ab Mittag kein Wasser im Tempel.

**Mi, 21. August**

Heute erneut kein Wasser im Tempel.

Besprechung und Verteilung der Arbeiten. Inventarisierung der Fundstücke und Erstellung der Fundliste (Gao Yan). Aufmaß und Schnittzeichnung des gesamten Wandaufbaus (Kaiser, Wu Xin). Schriftliche Beschreibung des Wandaufbaus, besonders der Konstruktion des oberen Wandabschnitts (Regensburger). Weitergehende Untersuchung des Wandaufbaus und Vergleich mit den Ergebnissen der EN-Wand (Kaiser, Regensburger). Erklärung des vorliegenden Berichts von Frau Yang zum Aufbau der Wand durch Gao Yan. Klimamessung (Thiemann). Vorbereiten der Hinterfüllmasse, Ansetzen Paraloid B 48 N (Thiemann). Sieben des gekehrten und eingesaugten Schmutzes wegen möglicher Fundstücke (Kaiser, Thiemann).

**Do, 22. August**

Weitere Untersuchung des Wandaufbaus und Vergleich mit der EN-Wand (Kaiser, Regensburger). Vergleich mit den schriftlichen Aufzeichnungen der EN-Wand (Regensburger). Hinweis von Gao Yan, dass mit dem Begriff „straw“ in China Stroh von Maispflanzen (stärkere Dicke) gemeint sein kann. Schriftliche Beschreibung des Wandaufbaus (Regensburger). Aufmaß und Schnittzeichnung (Kaiser). Vergleich der bisherigen Erkenntnisse bzgl. der Konstruktion der ES-Wand mit der südlichen Einschubwand, bei der im

oberen Bereich Lehmummantelungen abgefallen sind und dadurch das Grundgerüst klar erkenntlich ist. Isolierung der Metalldrähte mit Paraloid B 48 N (Thiemann, Wu Xin). Vorbereitungen zum Hinterfüllen (Thiemann, Gao Yan); Hinterfüllen (Thiemann, Wu Xin). Klimamessung (Thiemann). Dokumentation, Fotos ordnen (Regensburger). Fundstücke zuordnen (Thiemann, Gao Yan).

### **Fr, 23. August**

Untersuchung der Risse hinter den Figuren der untersten Reihe sowie des waagrechten Risses in der Wand; mögliche Erklärungen: Senken der Wand wegen Arbeiten des Bodens und Gewicht des Buddhas, Erdbeben. Aussaugen der Zwischenräume in den Rissen und anschließende nochmalige Überprüfung der Stabilität (Thiemann, Regensburger). Schnittzeichnung (Kaiser). Hinterfüllen (Thiemann, Wu Xin). Schriftliche Dokumentation (Regensburger). Konservierung einiger Fundstücke (Gao Yan). Festigung von lockeren Bereichen an den Figuren (Thiemann). Klimamessung (Thiemann). Oberflächenreinigung (Saugen) an einigen Figuren (Regensburger).

### **Sa, 24. August**

Freizeit in Xi'an. Pinselstraße, Moschee, Nachtmarkt.

### **So, 25. August**

Freizeit in Xi'an. Stadtmauer (Thiemann, Kaiser). Nachbereitung der vergangenen und Vorbereitung der kommenden Arbeitswoche, Erstellen einer to-do-Liste (Regensburger).

### **Mo, 26. August**

Diskussion mit chinesischen Kollegen den *bodhisattva* ES 5.31 aus Ecke zu bringen, da aufgrund der Enge der Ecksituation ein Arbeiten dort nicht möglich ist. Einpacken der Figur (Gao Yan, Wu Xin). Heben der Figur auf einen kleinen „Tisch“ (Kaiser, Wu Xin, Regensburger). Festigung von lockeren Bereichen an den Figuren (Thiemann). Klimamessung (Thiemann).

### **Di, 27. August**

Vorbereitungen die Figur aus dem Eck zu heben und sie auf den Boden zu stellen (Kaiser, Regensburger). Heben und Verschieben der Figur auf den Boden in den Zwischenraum zwischen Sockel und Absperrung mittels eines Flaschenzugs (Kaiser, Thiemann, Wu Xin, Regensburger). Reinigung der Ecke, d.h. Entfernung von Staub, kleineren und größeren Lehmziegelstücken und Fragmenten, Sieben des entfernten Materials hinsichtlich weiterer Fundstücke, Bergung von Fragmenten. Untersuchung des Sockelaufbaus und Konzepterstellung für Ausbesserungsarbeiten in der Ecke; Vergleich mit Konzept bzgl. Vorgehen bei EN-Wand (Kaiser, Regensburger). Besuch des Bürgermeisters von Lantian inkl. Stab und Fernsighteam. Festigung von lockeren Bereichen an den Figuren (Thiemann). Klimamessung (Thiemann).

### **Mi, 28. August**

Order von Frau Yang die Figur, da sie nun nicht mehr in der Ecke stehe, vollkommen herauszuheben, auf einen Tisch zu legen und dort zu bearbeiten. Diskussion mit Gao Yan, da diese Aktion Gefahren birgt (mögliches Brechen der Figur). Wu Xin und Gao Yan wollen diese Order umgesetzt sehen. Erneutes Vorbringen meiner Bedenken. Zusage der chinesischen Kollegen, dass die vollkommene Verantwortung für diese Aktion die chinesische Seite übernimmt und die deutsche Seite keinerlei Verantwortung trägt, falls die Figur bei dieser Aktion brechen sollte. Vorgehen: Anhebung der Figur auf den gemauerten Sockel,

anschließende rückseitige Stabilisierung der Figur mit einem Brett, um sie gefahrloser in die Waagrechte bringen zu können. Figur bleibt bis in waagrechte Lage an Flaschenzug angehängt. Styroporunterlage auf Arbeitstischen und Ablage der Figur darauf. Nach der Abnahme der Gurte Entfernen des Holzbretts durch leichtes Drehen der Figur. Lösen der Verpackung, aber Belassen unterhalb der Figur. Stützen des Kopfs durch Unterlagen. (Kaiser, Thiemann, Regensburger, Wu Xin). Die anschließende Untersuchung der Figur zeigt, dass sie durch diese Aktion zum Glück keinen weiteren Schaden genommen hat und ihr Zustand dem der Kartierung entspricht. Überlegungen zum Anbringen eines Dübels hinsichtlich der Fixierung der Figur im Sockel und Diskussion der Möglichkeiten mit Gao Yan. Festigen, Kleben und Kitten der lockeren Bereiche an der herausgenommenen Figur (Gao Yan). Neuer Aufbau des Sockels im Eck (Christian). Dokumentation (Regensburger). Festigung von lockeren Bereichen an den Figuren (Thiemann). Klimamessung (Thiemann, Regensburger).

### **Do, 29. August**

Festigen, Kleben und Kitten der lockeren Bereiche an der herausgenommenen Figur (Gao Yan). Sand sieben (Kaiser, Wu Xin). Anfertigung eines Holzdübels zur Wiederbefestigung des Bodhisattva im Sockel (Kaiser). Dokumentation (Regensburger). Festigung von lockeren Bereichen an den Figuren (Thiemann). Klimamessung (Thiemann, Regensburger). Oberflächenreinigung des Podests durch Abkehren mit einem Pinsel und Einsaugen des Staubs (Thiemann, Regensburger). Fixierung der Pagode (Kaiser, Wu Xin). Abnahme des *sudhana* (Kaiser, Regensburger).

### **Fr, 30. August**

Diskussion über die Rückseite des *bodhisattva*; nach Gao Yans Ansicht ist der jetzige Zustand nicht der ursprüngliche (rückseitig fehlten die oberen beiden Schichten Lehm), vielmehr sei die Figur ursprünglich vollkommen plastisch gearbeitet gewesen; meiner Ansicht nach könnte es sich um den Originalzustand handeln, da die Übergänge der feinen zur groben Lehmschicht fließend und weich sind, da keine Abbruchkanten zu sehen sind und da vielmehr Fingerab- bzw. -eindrücke in die Groblehmschicht erkennbar sind. Diskussion über die auszuführenden Maßnahmen; Erstellen eines Konzeptvorschlags beruhend auf meinen Beobachtungen, den Gao Yan Frau Yang vorlegen wird.

Dokumentation (Regensburger). Festigung von lockeren Bereichen an den Figuren (Thiemann). Befestigung des Dübels in der herausgenommenen Figur (Kaiser) und Verfüllung des Lochs mit Hanffasern und Lehm (Kaiser, Gao Yan). Klimamessung (Regensburger).

Abfahrt bereits um 11.00 Uhr, da Gao Yan und Wu Xin um 14.00 Uhr im Technischen Zentrum sein müssen.

Nachmittags Besuch des Historischen Museums der Provinz Shaanxi (Thiemann, Regensburger).

### **Sa, 31. August**

Freizeit in Xi'an (Thiemann, Kaiser). Arbeit an Vortrag (Regensburger). Nachmittags Pinselstrasse und muslimisches Viertel.

### **So, 1. September**

Freizeit in Xi'an (Thiemann, Kaiser). Arbeit an Vortrag (Regensburger).

### **Mo, 2. September**

Entscheidung von Frau Yang die Figur zurückzustellen und in einer weiteren Arbeitsphase durch die chinesische Seite zu bearbeiten; d.h. die Figur wird vorerst so belassen und in einen Nebenraum des Tempels verbracht.



Herstellung von Lehmputz für die Abschlußschicht in der Ecke (Kaiser, Gao Yan, Wu Xin). Diskussion bzgl. der richtigen Position und Ausrichtung des *sudhana*. Herstellung und Anpassung des Dübels für den *sudhana* (Kaiser). Festigung von lockeren Bereichen an den Figuren (Thiemann). Dokumentation (Regensburger). Klimamessung (Thiemann, Regensburger).

### **Di, 3. September**

Besuch von Wang Jiyuan, Direktor des Technischen Zentrums, und gleichzeitig Ankunft von Liu Ming im Shuilu'an. Gemeinsames Mittagessen. Anschließend Erläuterung unserer bisherigen Arbeiten und der Problematik mit dem Bodhisattva.

Herstellung und Anpassung eines neuen Dübels für den *sudhana* (Kaiser). Festigung von lockeren Bereichen an den Figuren (Thiemann). Dokumentation (Regensburger). Klimamessung (Thiemann, Regensburger). Einpacken der Eckfigur und Verbringen in den Nebenraum (Gao Yan, Wu Xin).

### **Mi, 4. September**

Anpassung des Dübels für den *sudhana* (Kaiser). Temporäre Sicherung der Figuren der GS-Wand mit der Schnur, die für die Notsicherung der Pagode verwendet worden war (Kaiser). Festigung von lockeren Bereichen an den Figuren (Thiemann). Wiederanbringung der abgenommenen Putzstücke in der Ecksituation (Thiemann, Regensburger). Kleben des Kopfspringers (Gao Yan). Dokumentation (Regensburger). Klimamessung (Thiemann, Regensburger). Beginn der Nachreinigung der Oberfläche der Figuren und der Wand durch Abkehren und Einsaugen des Staubs (Thiemann). Kaiser nachmittags mit Liu Ming unterwegs zu benachbartem Tempel. Lehmummantelung des neuen Dübels beim *sudhana* (Wu Xin).

### **Do, 5. September**












Kleben des *sudhana* (Gao Yan). Aufbringen einer Schicht Lehmputz im Bereich der wieder angebrachten Wandfragmente (Thiemann). Wiedereinsetzen der herausgenommenen Balken und Bretter an der Außenseite (Kaiser, Wu Xin). Aufbringen der letzten Schicht Lehmputz in der Ecke (Kaiser). Anbringung der Brücken zur Kontrolle der Risse (Kaiser). Nachreinigung der Oberfläche der Figuren und der Wand durch Abkehren und Einsaugen des Staubs (Thiemann). Dokumentation (Regensburger). Klimamessung (Regensburger). Aufräumen (Thiemann, Regensburger).





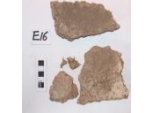






### **Fr, 6. September**

Anbringung des *sudhana* (Kaiser, Gao Yan, Wu Xin). Nachreinigung der Oberfläche der Figuren und der Wand durch Abkehren und Einsaugen des Staubs (Thiemann). Endzustandsfotos (Thiemann, Regensburger). Dokumentation (Regensburger). Verpacken der Fragmentboxen in Kisten (Gao Yan). Aufräumen (alle).













Rückfahrt nach Xi'an. Weiterer Aufenthalt in Xi'an aufgrund der anschließenden Tagung in Xi'an (11.-15. September) mit Vortrag zu den Forschungen und Arbeiten im Shuilu'an (11. September; Blaensdorf und Regensburger).















**LIST OF FINDINGS 2013**














<i>Fragment No.</i>	<i>place of finding</i>	<i>day of finding</i>	<i>description</i>	<i>max. dimension (cm) l x w (x d)</i>	<i>original position</i>	<i>photograph</i>
E1	Behind figure 5.3	2013.8.15	Two small brown fragments			
E2	Behind figure 5.15	2013.8.15	A green tree	20*11	Over figure 5.7, on the right or left side	
E3	Behind tower 5.A1	2013.8.15	A broken monkey with white priming layer and black dust, a part of the back is missing, two front legs are broken	13*6	On the left mountain of tower 5.A1	
E4	Behind tower 5.A1	2013.8.15	A green cloud with white priming layer and black dust	19*8		
E5	On the right of figure 5.6	2013.8.15	A part of green cloud with white priming layer	6*2.5	The right cloud of figure 5.6	
E6	Behind figure 5.4	2013.8.15	A part of green cloud with iron ware, covered with black dust and red paint	12*6	The right cloud of figure 5.6	
E7	Behind figure 5.32	2013.8.15	A part of the dado decoration, painted white	6.5*1.5		
E8	On the first level of dado	2013.8.15	A part of finger, painted white	4*1.5	Maybe the finger of figure 5.30	
E9	On the first level of dado	2013.8.15	A red cloud fragment covered with black dust	7.5*4		
E10	In front of figure 5.33	2013.8.15	A part of dado decoration with red color and priming layer	6*5		
E11	In front of figure 5.33	2013.8.15	A dado decoration fragment painted red, grey and green	9*5		

E12	In front of figure 5.33	2013.8.15	A fragment with wooden stick, covered with red color and priming layer	9*3		
E13	On the left side of dado	2013.8.15	A fragment of flower or cloud with no color	5*3		
E14	On the left side of platform, under the dado	2013.8.15	An element with no color	3*1.5		
E15	On the left side of platform, under the dado	2013.8.15	A fragment with red color	9*4		
E16	In the hole of ES wall corner	2013.8.15	3 pieces of wall			
E17	In front of the dado, right side	2013.8.15	3 pieces of fragments, painted white, covered with black dust	7		
E18	Under the table between figure 5.8 and figure 5.9	2013.8.15	A big black bead		The table on the left side of figure 5.9	
E19	Under the foot of figure 5.19	2013.8.15	A chain of white beads		In the left hand of figure 5.19	
E20	BU5	2013.8.15	A part of grey hair	3.5 high	On head of BU5	
E21	BU5	2013.8.15	A part of grey hair	3 high	On head of BU5	
E22	BU5	2013.8.16	A part of grey hair		On head of BU5	






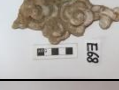
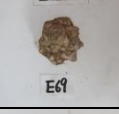
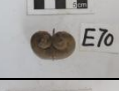























E23	On head of figure 5.3	2013.8.16	A long element with no color, maybe the stem of a tree			
E24	Between figure 5.28 and figure 5.29	2013.8.16	A wooden stick with some clay on it	14		
E25	Figure 5.13	2013.8.16	A black bead			
E26	Between figure 5.28 and figure 5.29	2013.8.16	A bulk of clay			
E27	Between figure 5.25 and figure 5.26	2013.8.16	A part of green piao dai	9		
E28	BU5	2013.8.16	A finger of Buddha, broken from middle, covered with black dust		Buddha's finger	
E29	At the right corner of ES wall	2013.8.16	A red decoration element	3	Maybe hat decoration of figure 5.29	
E30	At the right corner of ES wall	2013.8.16	A figure without head	21*10		
E31	At the right corner of ES wall	2013.8.16	A fragment covered with gold	7		
E32	At the right corner of ES wall	2013.8.16	Red hand with a part of arm	8*3		
E33	At the right corner of ES wall	2013.8.16	A green cloud tail	11..5*8.5		
E34	At the right corner of ES wall	2013.8.16	A white fragment	3.5*2.5		

E35	At the right corner of ES wall	2013.8.16	Red hand with a part of arm, with wooden weapon in hand	40	
E36	At the right corner of ES wall	2013.8.16	A part of red piao dai		
E37	At the right corner of ES wall	2013.8.16	Two pieces of green piao dai		
E38	At the right corner of ES wall	2013.8.16	A golden Buddha breaks into two pieces, one part is body without head, the other part is a lotus petal.	19*6.5	
E39	At the right corner of ES wall	2013.8.16	A red fragment	8*4	
E40	At the right corner of ES wall	2013.8.16	A big grey element	22*15	
E41	At the right corner of ES wall	2013.8.16	A part of grey hair	3 high	
E42	At the right corner of ES wall	2013.8.16	A golden fragment	7*3*3	
E43	At the right corner of ES wall	2013.8.16	A green and red fragment with wooden stick inside	14	
E44	At the right corner of ES wall	2013.8.16	A fragment with wooden stick inside, with no color	16.5*6	
E45	At the right corner of ES wall	2013.8.19	A fragment with priming layer	9	
E46	At the right corner of ES wall	2013.8.19	A part of green piao dai	6	
E47	At the right corner of ES wall	2013.8.19	A red fragment	7.5*4.5*4	
E48	At the right corner of ES wall	2013.8.19	A part of red arm or leg	11*4*4	
E49	At the right corner of ES wall	2013.8.19	A piece of golden decoration	6*3.5	

E50	At the right corner of ES wall	2013.8.19	Maybe a part of piao dai or cloud tail, with wooden stick inside		
E51	At the right corner of ES wall	2013.8.19	A bead with red color and white priming layer		
E52	At the right corner of ES wall	2013.8.19	A black piece		
E53	At the right corner of ES wall	2013.8.19	A part of white finger	7.5	
E54	At the right corner of ES wall	2013.8.19	A white fragment with wooden stick inside, it will break into four parts	6.5*4.5	
E55	At the right corner of ES wall	2013.8.19	A part of decoration, with red color and white priming layer	4.5*2	
E56	At the right corner of ES wall	2013.8.19	A part of golden decoration	13	
E57	At the right corner of ES wall	2013.8.19	A fragment with white priming layer	6*5*3.5	
E58	At the right corner of ES wall	2013.8.19	A fragment with red color and white priming layer	4.5*3	
E59	At the right corner of ES wall	2013.8.19	A hand grasps a round element, covered with black dust	4.5*2.5*1.5	
E60	At the right corner of ES wall	2013.8.19	A head painted black, white, green and black	4.5*4*3.5	
E61	At the right corner of ES wall	2013.8.19	A head painted white and black, with wooden stick inside	7.5*4*3.5	
E62	At the right corner of ES wall	2013.8.19	A sculpture painted red and green, with no hands, legs and hands	7.5*7.5	



E63	At the right corner of ES wall	2013.8.19	A part of white cloud	18*9.5		
E64	At the right corner of ES wall	2013.8.19	A golden figure with no head and foots	14*6		
E65	At the right corner of ES wall	2013.8.19	A red and grey figure with no head	13.5*12*5.5		
E66	At the back of figure 5.7	2013.8.19	A fragment with wooden stick inside	11	The back of figure 5.7	
E67	At the right corner of ES wall	2013.8.19	A piece of golden decoration	10*4.5		
E68	At the right corner of ES wall	2013.8.19	A part of green cloud, with white priming layer	15*7.5		
E69	At the right corner of ES wall	2013.8.19	A red and white element	5*6*3.5		
E70	At the right corner of ES wall	2013.8.19	A black hair or decoration	4.5*2		
E71	At the right corner of ES wall	2013.8.19	A part of black hair	2.5 high		
E72	At the right corner of ES wall	2013.8.19	A cloud tail with no color	4.5*2.5		
E73	At the right corner of ES wall	2013.8.19	A part of black decoration	4*2		
E74	At the right corner of ES wall	2013.8.19	A head, painted white and black	4.5*3.5*3.5	Maybe the head for E75	
E75	At the right corner of ES wall	2013.8.19	A figure with no head, painted green, red and white	22.5*7.5*7.5		
E76	At the right corner of ES wall	2013.8.20	An white element			

E77	Left side of Buddha dado	2013.8.20	A part of dado decoration	16.5*10	Left side of Buddha dado	
E78	At the back of ES wall	2013.8.20	Maybe a part of mountain with no color	21*11.5		
E79	At the right corner of ES wall	2013.8.20	A part of a decoration with a dragon on surface	22.5*12		
E80	At the right corner of ES wall	2013.8.20	A part of cloud, with a little green color	13.5*8		
E81	At the right corner of ES wall	2013.8.26	A golden decoration fragment	7.5*5.5		
E82	At the right corner of ES wall	2013.8.26	A white cloud fragment	10*8		
E83	At the right corner of ES wall	2013.8.26	A white cloud fragment	8.5*5.5		
E84	At the right corner of ES wall	2013.8.26	A round element with no color	5.5 high		
E85	At the right corner of ES wall	2013.8.26	An iron fragment	9		
E86	At the right corner of ES wall	2013.8.26	A red arm fragment, broken into two parts	8.5		
E87	At the right corner of ES wall	2013.8.26	A fragment with little green color, broken into two parts	7*5.5		
E88	At the right corner of ES wall	2013.8.26	Two round elements	2.5		
E89	At the right corner of ES wall	2013.8.26	A part of white face	3.5		
E90	At the right corner of ES wall	2013.8.26	A part of green cloud	4*2.5		
E91	At the right corner of ES wall	2013.8.26	A round element			

E92	At the right corner of ES wall	2013.8.26	An element with no color	7.5	
E93	At the right corner of ES wall	2013.8.26	An element with no color	5.4*4.5	
E94	At the right corner of ES wall	2013.8.26	A part of white cloud	4.5*4.5	
E95	At the right corner of ES wall	2013.8.28	Several white beads, some are apart		
E96	At the right corner of ES wall	2013.8.28	Several pieces of white fragments		
E97	At the right corner of ES wall	2013.8.28	Several pieces of black pieces		
E98	At the right corner of ES wall	2013.8.28	Several pieces of red pieces		
E99	At the right corner of ES wall	2013.8.28	Several fragments with no color		
E100	At the right corner of ES wall	2013.8.28	Three green piaodai fragments		
E101	At the right corner of ES wall	2013.8.28	A black bead		
E102	At the right corner of ES wall	2013.8.28	A golden element		
E103	At the right corner of ES wall	2013.8.28	A white element		
E104	At the right corner of ES wall	2013.8.28	A grey element		
E105	At the right corner of ES wall	2013.8.28	A part of black piaodai		



