



THE ANCIENT MONASTIC COMPLEX OF

DANGKHAR

BUDDHIST ARCHITECTURE IN THE WESTERN HIMALAYAS

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Graz University of Technology - Faculty of Architecture
Institute of Architectural Theory, Art History and Cultural Studies
Editor Holger Neuwirth





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TABLE OF CONTENTS

0	INTRODUCTION <i>M. Weisskopf, H. Neuwirth, C. Auer</i>	
	Preface	4
	Guide for the reader	5
	The territory	7
	The project	8
1	BUILDING DESCRIPTION <i>C. Auer</i>	
	The village of Dangkhar	13
	The monastic complex	17
	The main monastery building	25
	The upper temple	59
	The village chapel	63
2	PLAN DOCUMENTATION	
	Table of plans	67
	Main building	69
	Upper temple	78
	Village chapel	82
	The monastery complex	84
3	SPATIAL MODEL <i>D. Bauer</i>	
	Visualisation of the main monastery's building	91
	Views	92
	Sections	94
4	HISTORICAL RESEARCH ON DANGKHAR <i>L. N. Laurent</i>	
	The ancient monastery of Dangkhar: an anamnesis	107
	The expansion and topographical reorganisation	120
5	THE UPPER TEMPLE OF DANGKHAR MONASTERY <i>L. N. Laurent</i>	
	The upper temple and its iconographical programme	141
	Pictorial organisation	143
	Iconographical analysis	159
	Conclusion	174

6	BRONZE OF DANGKHAR <i>L.N. Laurent</i>	
	IHa bla ma Zhi ba 'od's eighth century bronze from Gilgit	179
7	GEOTECHNICAL REMEDIATION STRATEGIES <i>D.S. Kieffer and C. Steinbauer</i>	
	Introduction	197
	Geologic and seismic setting	200
	Observations and findings	208
	Geotechnical recommendations	220
	Discussion	226
8	SUSTAINABLE RESTORATION MEASURES <i>C. Auer and H. Neuwirth</i>	
	Building restoration	231
	Structural stability	233
	Protection of the interior	241
	Building's final appearance	242
	Possible future uses and maintenance	243
9	WALLPAINTINGS OF DANGKHAR MONASTERY <i>M. Gruber, G. Krist, K. Schmidt and Tanja Bayerova</i>	
	Inventory and approach to conservation	247
	Wallpaintings of the assembly hall	249
	Wallpaintings of the upper temple	258
	Conservation and preservation strategy	270
	Technical study of wall painting	272
10	THE TEMPLE OF LALUNG <i>H. Neuwirth</i>	
	The Serkhang and the Vairocana chapel	285
11	APPENDICES	
	The multilingual glossary	303
	Detailed inventory of the upper temple	309
	Bibliography	320
	Picture index	326

O INTRODUCTION

Markus Weisskopf

PREFACE

Inilcheck Glacier, Karakorum Highway, Tienshan, Hunza, Dolpo, Ladakh, Zanskar, Lahaul, and Spiti...

The ring of these names has held me spellbound ever since the age of fifteen. After Ladakh had been closed to foreigners for more than fifty years, I wanted to seize the first opportunity to visit the area as soon as it reopened in 1974. In those days the Ladakhis and Zanskaris were still relatively untouched by western civilization, the encounters were full of mutual respect, withdrawn, pristine, almost shy at times. I even experienced situations where the people hid away their animals when they saw me approaching. Lahaul and Spiti were still military no-go areas at the time, impossible to visit, but the imaginary pictures before my eyes and the ring of their names in my ears remained vivid. However, when the old kingdoms finally did open their doors to visitors, I unfortunately was not among the first to make it there.

Instead, I travelled again and again to the Himalayan mountains, to the Karakoram, the Tian Shan Range, the Hindu Kush, the Inner Dolpo region, up to Lake Pokhsumdo and Shey Gompa in Ladakh. For more than three decades, I travelled the lonely mountains in search of peace, tranquillity, and the wilderness. Tibetan culture combined with pizza and espresso was never up my street. I was more drawn to the remote areas off the beaten tourist tracks, in winter or at least outside the season, shortly before the mountain passes would close. I felt increasingly revolted by the westernization and trivialization I encountered, by mass tourism in general.

Travelling through Himachal Pradesh in the autumn of 2007, I spontaneously decided to drive to Spiti via Kinnaur, past the Kinnaur Kailash. I was deeply impressed by these pristine, often barren landscapes, by the mighty mountain peaks and by the sight of apple orchards at four thousand metres above sea level. On the way to Kaza I came across an old and rusty road sign pointing to Dangkhar gompa, so I decided to follow it, climbing higher and higher until I reached the destination of my subconscious dreams... .

I immediately fell in love with this run-down monastery, which was on the verge of collapsing, even plunging off the cliff face. The view towards the majestic mountain ranges around me was breathtaking. Later, in Kaza, I stumbled across a billboard describing the monastery's difficult situation and calling for donations.

Ever since then, I have put all my effort into saving Dangkhar monastery. By chance, I came across Holger and Carmen and the TU Graz, and for years now we have been busy documenting, doing field research and drafting restoration plans, with unfaltering commitment. An international team of experts has been doing an incredible job at laying the foundations for stabilizing and restoring this beautiful monastery, even rebuilding parts of it where necessary. Still, many a white cloud will pass over the towering mountaintops before our dreams of renovation come true. My heartfelt thanks go to Carmen, Holger, Lobsang Nyima and the rest of the team.

GUIDE FOR THE READER

The first step towards sustainable restoration of the ancient monastic complex of Dangkhar is now completed and the results are outlined in this book. Rapid transformation, which especially affects these regions, requires special measures to preserve this outstanding, yet increasingly endangered cultural heritage. Therefore, a comprehensive documentation constitutes an important first step to preserve the “spiritual message”. Besides that, the constant advancements in acquisition techniques and the media technologies offer possibilities that should be taken advantage of.

The crucial basis of the project has been the concept of interdisciplinary cooperation between different scientists during field studies in 2010 and 2011. This enabled multidisciplinary discussions during the acquisition of the basic data in various scientific fields, which was collected for further processing at the universities.

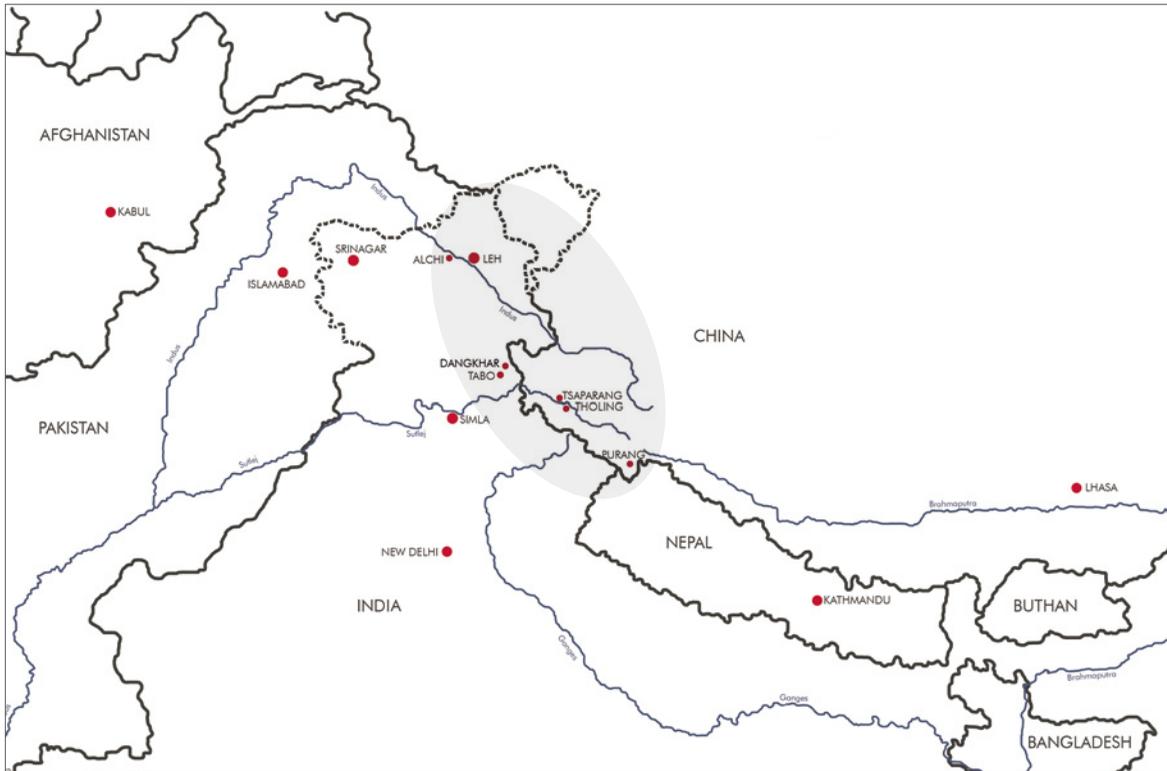
Starting with the documentation of the building in 2010, the current condition was first photographically documented. The building was then surveyed and presented in two- and three-dimensional drawings. Only then was an analysis of the complex possible, both concerning the historical building phases of the gradual formation of the monastic complex and the evaluation of the building’s stability in combination with the detected damages. Based on that, a thorough concept for restoration was established. The exposed location of the buildings and the complex topographical conditions called for a geological expertise, for which data was collected in 2011. The geological stability is indispensable for the final analysis as well as structured elaboration of necessary preservation measures to guarantee the future existence of this unique cultural monument. Just recently, the outer ambulatory of the monastery was disrupted by a rock fall at the southern corner.

At the same time, the study of sources was started according to the available literature and the preserved records to investigate the historical development of the complex. The equipment and the facilities of the monastery form an important part of the cultural heritage. Above all, the library (Kanjur and Tanjur), sculptures, small-scale sculptures, Thangkas and wall paintings are to be mentioned here. Wherever possible, the facilities were photographed with respect to their later treatment. One of the major small-scale sculptures (bronze) was analysed and dated during this documentation.

For the preservation of the wall paintings, the relevant walls in the assembly hall and the upper temple were documented and analysed as far as possible, and a concept for restoration was established. Unfortunately, the wall paintings in the chapel of the protecting deities were not able to be assessed, as access to this room was strictly forbidden. The description and decoding of the iconographical meaning of the wall painting in the upper temple is a valuable contribution, which also offers essential information for the conservators.



01 Map of the Western Himalayas with the area of the historical Kingdom of Purang-Guge in the 10th century. TU Graz 2013.



During the planning of definite restoration steps with the monastic community in 2011, first discussions were conducted concerning reasonable future usage of the rooms, as presently (with exception of the sacred rooms and the living space of the monk responsible for the old monastery) most rooms are out of use or inaccessible. Besides that, the possibilities and costs for the purchase of materials were considered, and conversations with craftsmen took place. However, the regulatory framework for the start of restoration work will still have to be clarified. The basis of a transparent and comprehensible restoration of the ancient monastic complex of Dangkhar is being submitted with this book.

THE TERRITORY

Spiti is a rugged mountain valley in the Western Himalayas located in the north-eastern part of the Indian state of Himachal Pradesh and in part of the Lahul and Spiti district. Foreign travellers still only have limited access they may, however, apply for a permit in Rekong Peo or in Kaza. Spiti is bordered by Ladakh in the north, by the Lahaul and Kullu district in the west and southwest, and in the east by Kinnaur and Tibet.

Not much is known about the archaeology of the period prior to the 10th century in this region, thus historical records relating to this period are somewhat scarce. It was not until the Kingdom of Purang-Guge started to exercise growing influence and monasteries had been established by the royal dynasty of Western Tibet that historical sources became more bountiful.¹ Since the 10th century and the beginnings of the West Tibetan Kingdom, the Western Himalayas have played a central role in the dissemination of Buddhism from India to Tibet. The monasteries of this region have ever since been important centres of teaching and translation of Mahayana Buddhist texts from Sanskrit to Tibetan as well as the dissemination of certain forms of artistic expression. It was here that the foundations were laid for the development of a specific form of Tibetan Buddhism.

During the 11th century, most sub-regions of the Himalayas fell under the influence of the Kingdom of Guge and Purang. During the rule of King Ye-she-od, Buddhist teachings experienced a renaissance after the Bön religion had gained greater influence under the reign of the Tibetan King Langdarma in the 9th century, when most Buddhist buildings were destroyed. After the assassination of Langdarma, the theoretical foundation of the aforementioned renaissance was established by Rinchen Zangpo, who, on behalf of Ye she'od in Nalanda, which was the most important Buddhist centre in India, studied texts of the Mahayana style, brought with him texts to Tibet and translated them. He also brought artists and artisans from Kashmir to West Tibet. Rinchen Zangpo, who was bestowed with the title of honour "The Great Translator", is thought to have founded 108 monastery and temple complexes. Starting with the central complex in Tholing, Buddhism manifested itself in numerous buildings and as a consequence of the religious centres he had established, the permanent dissemination of Buddhist teachings was ensured throughout the whole kingdom.² In 2006, the monastery of Dangkhar was recognised by the World Monument Fund as one of the most endangered sites in the world.³

1 See FRANCKE 1907 / KLIMBURG-SALTER 1997 / THAKUR 2001.

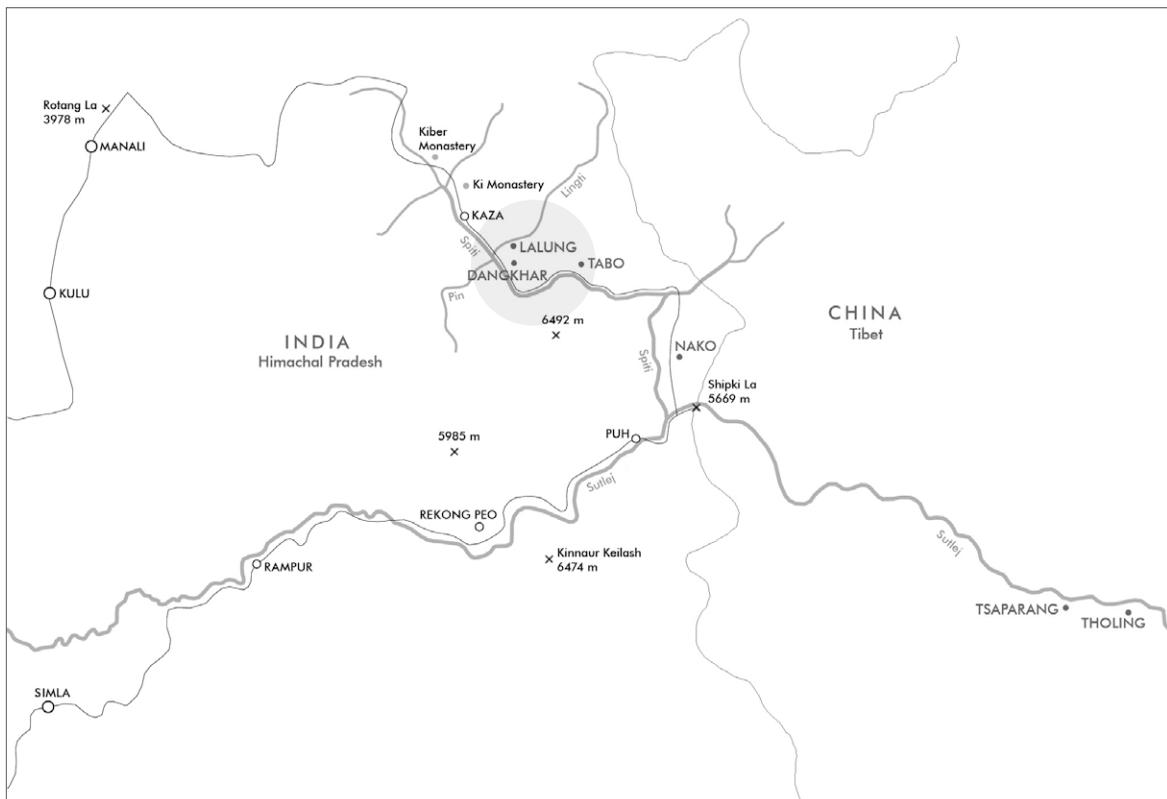
2 See TUCCI 1988: 10-12.

3 World Monuments Watch - 100 Most Endangered Sites 2006. Watch Catalog 2005: 34.

THE PROJECT

In 2009 our team of architects from Graz University of Technology was asked to project a building documentation of the ancient monastery complex in Dangkhār. As a result, the team, which had already spent several years on different research projects on the Buddhist architecture of the Western Himalayas, financed by the FWF (Austrian Science Fund), was assigned to deal with the planning and implementation of the project. After Markus Weisskopf had secured the funding, the research project was launched at Graz University of Technology with the aim of compiling accurate documentation of the buildings of the monastery area as a basis for a restoration concept.

The first field research in Dangkhār finally took place in summer 2010 under the expert leadership of Holger Neuwirth who was assisted by me and Dieter Bauer from Graz University of Technology, and actively supported by Lobsang Nyima Laurent, a Swiss archaeologist and Buddhist monk at Tashi Lhunpo Monastery, South India.



02 Map of the Spiti valley, Himachal Pradesh, North India, with the villages of Lalung, Dangkhār and Tabo. TU Graz 2013.

During our stay from 17th July to 2nd August 2010, the whole monastic complex was meticulously surveyed and photographically documented. The measurement was undertaken on the basis of six tachymeter marks to gather a digital point cloud. It was then complemented by a conventional measurement of small-scale indoor structures. At the same time a catalogue of damage was compiled for each room. The data pool collected during this three-week field research was thereafter evaluated at the TU Graz and processed into a collection of plans, including all necessary ground plans, sections, and elevations. Based on these digitalised two-dimensional plans, three-dimensional models were generated for an easier understanding of the building's structures and to facilitate communication between the monastic community of Dangkhar and the team of architects with regard to future renovation work.

In order to complete the documentation elaborated in 2010, the fieldwork in the following year included the participation of various actors. Due to the nature of the location, a geological assessment of the site and its stability were evaluated in an interdisciplinary cooperation with the Institute of Applied Geosciences of the TU Graz. A team of restorers from the University of Applied Arts Vienna surveyed the wall paintings of Dangkhar and elaborated the technical preconditions for their restoration. Lobsang Nyima Laurent continued to research the historical setting and acted as interpreter. The first steps of restoration and stabilization procedure were discussed in cooperation with the architect Jitender Yadav. Unfortunately, he died in August 2012 in a tragic accident. We thank him for all the efforts in retrospect, our thoughts are with him.

The second fieldwork took place at Dangkhar, Spiti, from 21th June to 31th July 2011. It involved teams of experts in the disciplines of Geology, Archaeology and Tibetology, Painting Restoration, and Architecture. The participants were Scott Kieffer and Christoph Steinbauer (Institute of Applied Geosciences at Graz University of Technology), Lobsang Nyima Laurent (Swiss archaeologist and Buddhist monk at Tashi Lhunpo Monastery, South India), Kathrin Schmidt and Maria Gruber (Institute of Conservation at University of Applied Arts Vienna), Holger Neuwirth and Carmen Auer (Institute of Architectural Theory, Art History and Cultural Studies at Graz University of Technology) and Jitender Yadav (Architect, New Delhi). The following co-workers from Graz University of Technology were involved in the preparation and elaboration of the material: Dieter Bauer, Dagmar Ley, Bettina Paschke, Martina Rössl and Claudia Wrumnig. I hereby thank them for their great efforts and commitment.

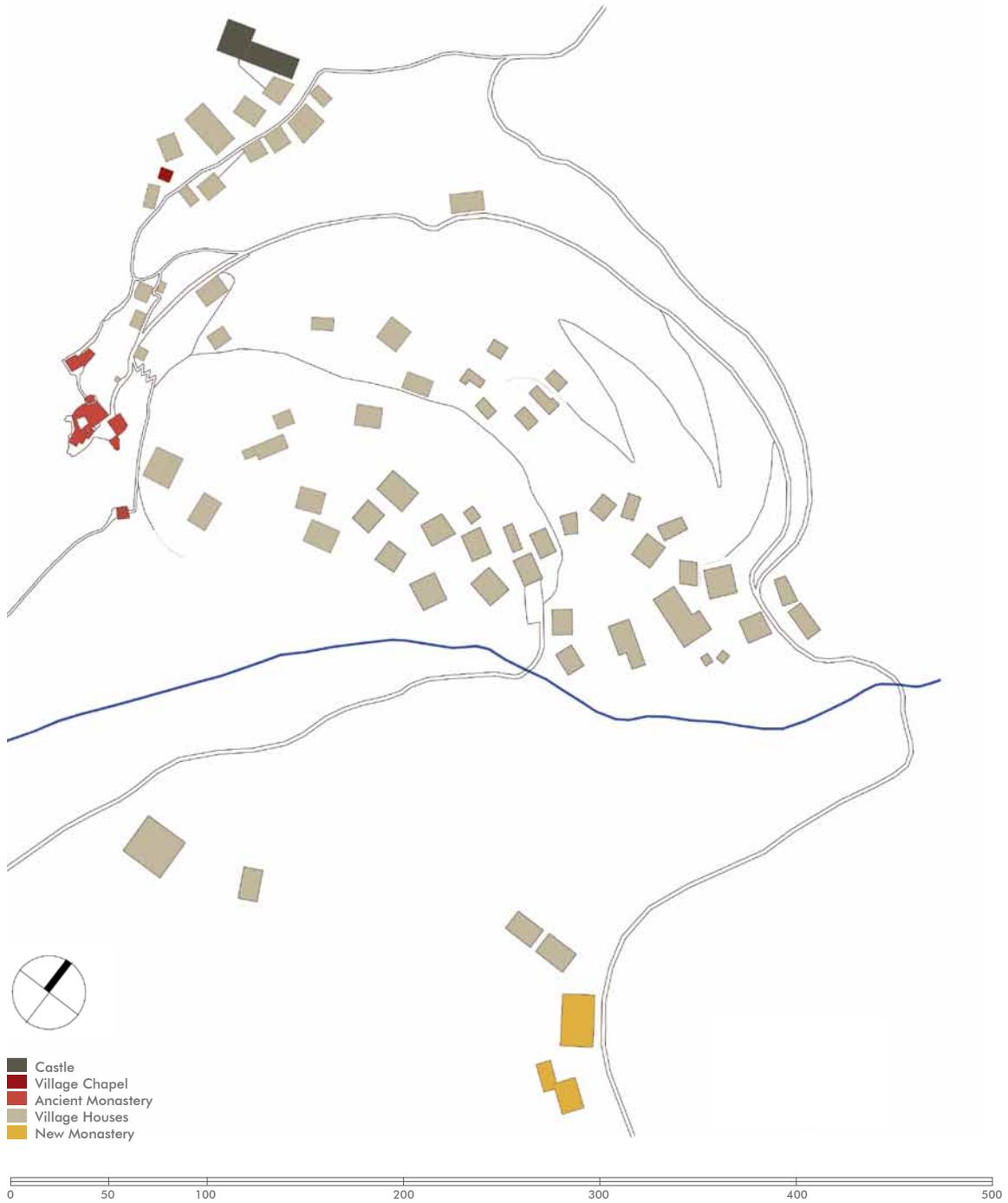
This publication presents the cumulative data gathered during the fieldwork research program 2010 and 2011. We hope that it provides valuable information regarding the history of the place and shall therefore contribute to bringing more awareness and support. We all wish to personally thank Markus Weisskopf who contributed to this work by financing the whole project. Without his generous and unconditional support none of this would have been possible. May all the merits be his! Last but not least we would like to thank all the friends and goodhearted spirits who encouraged us before, during and after our stay at Dangkhar.





1

BUILDING DESCRIPTION



03 Sitemap of Dangkhar village. TU Graz 2013.

1 BUILDING DESCRIPTION

Carmen Auer

THE VILLAGE OF DANGKHAR

The monastery of Dangkhar (Tib. *Brag mkhar*) is located within the Spiti valley (Tib. *sPi ti/sPyi ti*) in Himachal Pradesh, India, a region inhabited by a Tibetan-speaking population for more than thousand years. The ancient monastic complex and the early village of Dangkhar were settled along the edges of a steep rock cliff made of bimrock materials at the west of the Dangkhar settlement. The older parts of the village are located at the area between the ancient monastery and the uppermost “castle” of the Governor (Tib. *no no*). Erosion, slope instability, and seismic activity have had serious impact on the morphology of the whole site. Late 19th century etchings and 20th century photographs indicate the locations of prior structures and buildings which have since then collapsed or simply disappeared.

The new part of the village is located in the valley basin between the ancient and the new monastery. A new road runs above Dangkhar settlement on the northern side of the valley. It leads behind the new monastic complex along the corrie and eventually reaches the old monastery perched on the southmost part of a rocky promontory. An old footpath runs directly from the river valley in the southwest to the monastery cliff where the route is marked by an old gateway stupa at the eastern foot of the complex. Another travel route, also marked by a stupa on the roadside, runs, somewhat underneath the new road, from the south to the centre of the valley floor in which the new part of the village lies. Footpaths lead from there to the monastery too.



04 The village of Dangkhar with the ancient and the new monastery. DB 2010.



05 View of the monastery complex and the old village with the castle of the No no on the top. Luczanits 1991.



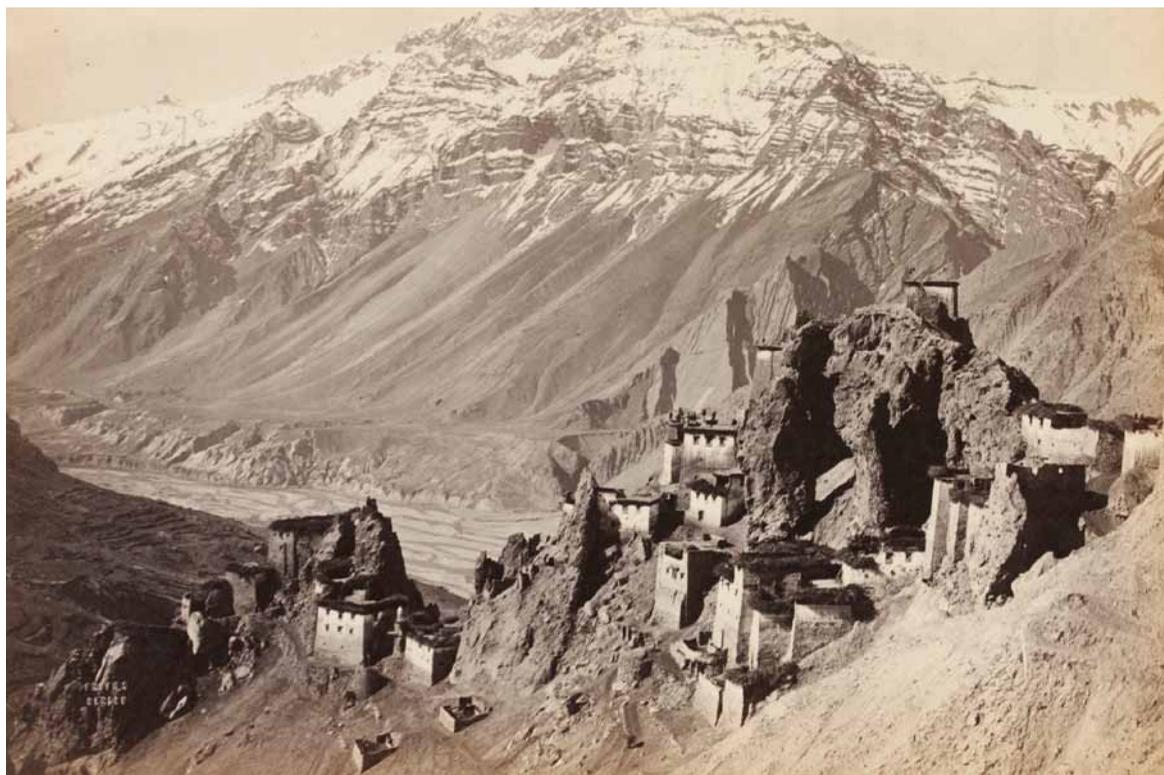
06 General view in 1866. Photograph by Samuel Bourne. 53:093 © Victoria and Albert Museum, London.

BUILDING CHANGES

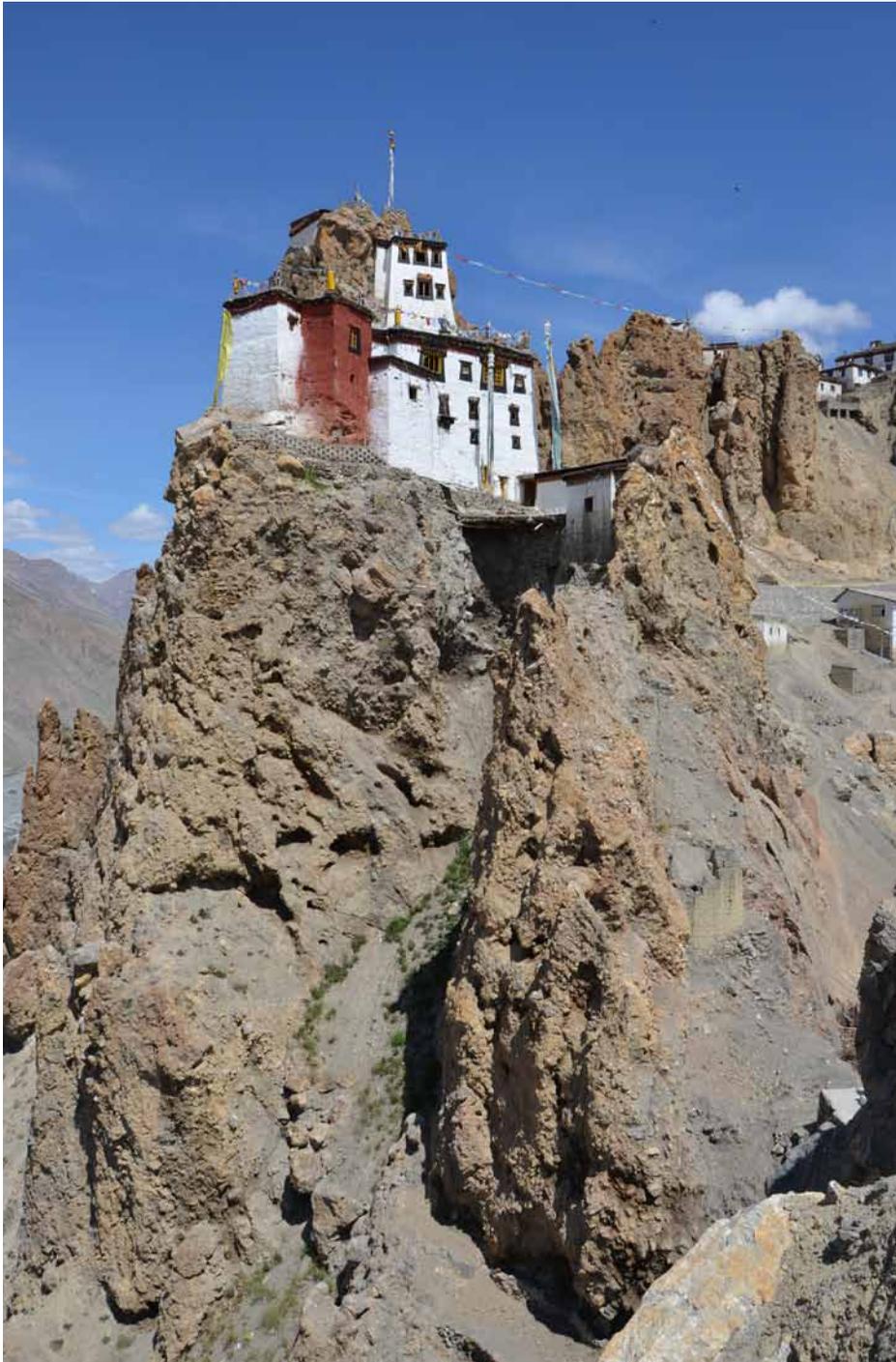
In the last decades, some physical changes of the building structures of the village can be observed, if you compare today's condition with older pictures, as far as available. Apparently many older structures around the ancient monastery have disappeared in the last years. Rare photographs from the 19th century, taken by Francis Frith in 1850 and Samuel Bourne in 1866, show that, for instance, the houses built around the old gate stupa at the foot of the monastery and at the eastern side of the hill range next to the monastery have completely disappeared. A photograph by C. Luczanits shows that parts of these buildings still existed in 1991.

Basically, the main building complex has not changed, except in the roof area, some details of the facade and the entrance area. On the other hand the tower above the roof of the main building was extended by adding a storey, the completion date of which is not quite clear.

At the upper temple (Tib. *lha khang gong ma*), a new roof was built above the old structure in the course of a roof restoration, sometime after 1991. The completion date of the concrete steps on the rear side of the rock is also questionable as well as the dating of the supporting wall at the southwestern terrace of the main building and the present concrete top of the gateway stupa.



07 View from the northern side. Francis Frith 1850-1870, E.208:3316-1994 © Victoria and Albert Museum, London.



08 View of the building complex from south-east. CA 2011.

THE MONASTIC COMPLEX

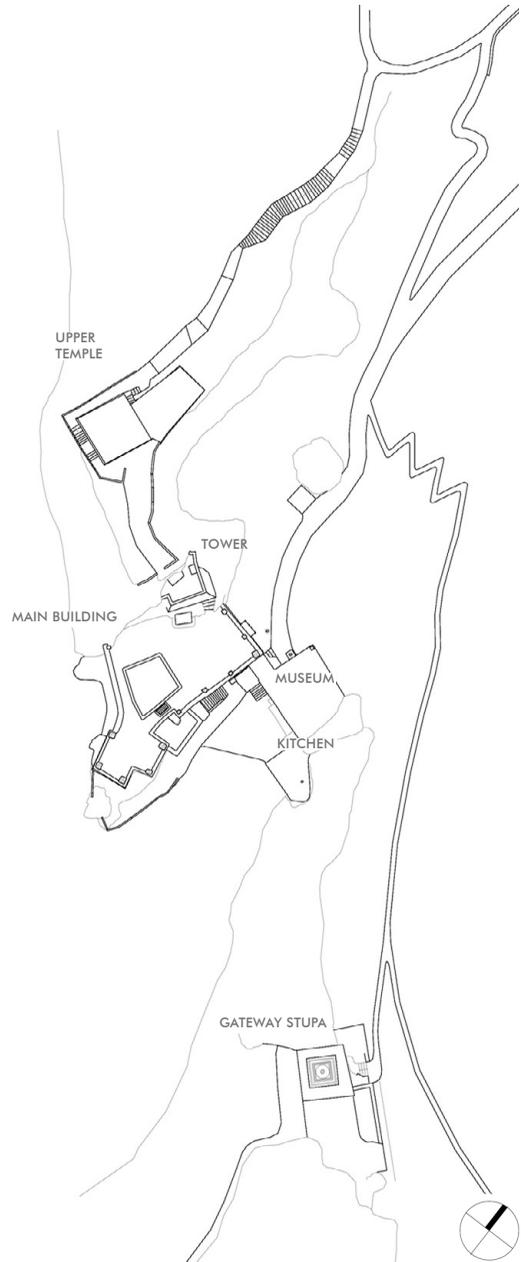
The building complex of the ancient monastery consists of several monuments which are dramatically perched on a steep rocky cliff to the west of the Dangkhar settlement at an altitude of 3850 m.

The multi-tiered main monastery building, a cluster of rooms which has developed there over centuries, forms the centre of the building ensemble. Above it, leaning against the rock, is a tower-like building, which can be accessed from the roof of the monastery whose interior hidden steps lead up to the temple at the top of the rock. The tower building is part of an original path to the upper temple that has since been replaced by a fortified route leading up the concrete steps on the rear side of the rock.

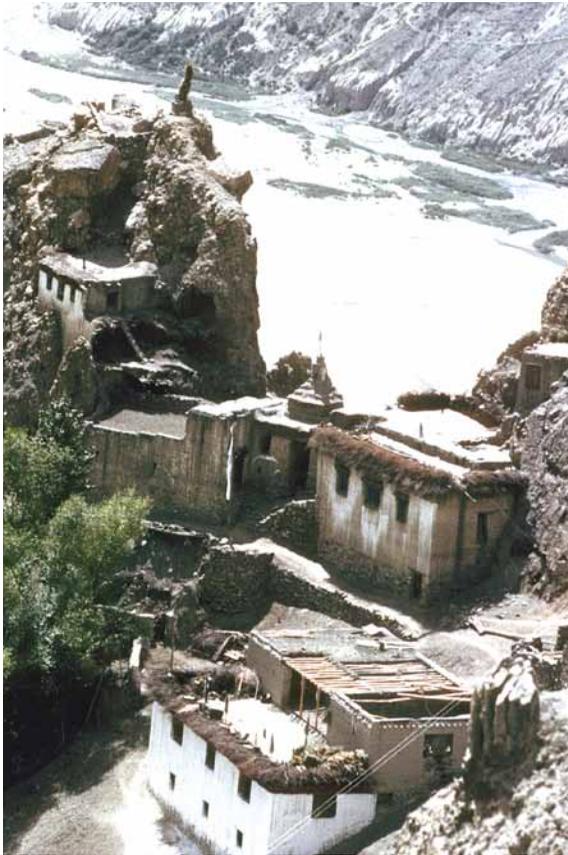
At the foot of the monastery rock, there is an ancient gateway stupa bearing a new top part, but you can easily see from its basic form that it was built much earlier and was evidently part of the original ensemble. In front of the main monastery building there are two more single-storey buildings, a museum room situated in front of the monastery entrance and, connected to it, a kitchen which can be accessed from the front area and whose rear wall is part of the actual rock face.



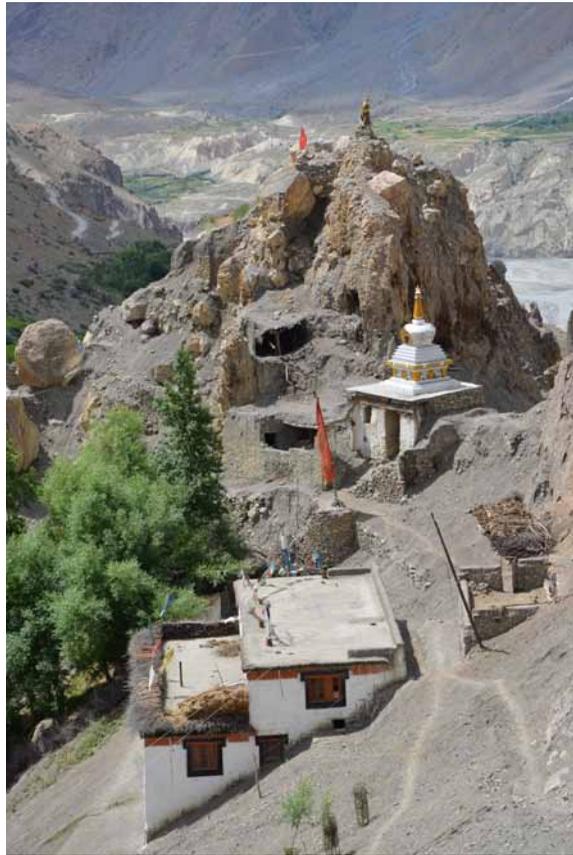
09 View of the building complex from the foot of the rock. CA 2011.



10 Site plan. TU Graz 2013



11 Former building structures around the gateway stupa. Luczanits 1991.



12 The gateway stupa next to the ruins of the ridge. CA 2011.



13 The north-eastern facade. CA 2011.



14 The lion corbel above the window. HN 2010.

THE GATEWAY STUPA

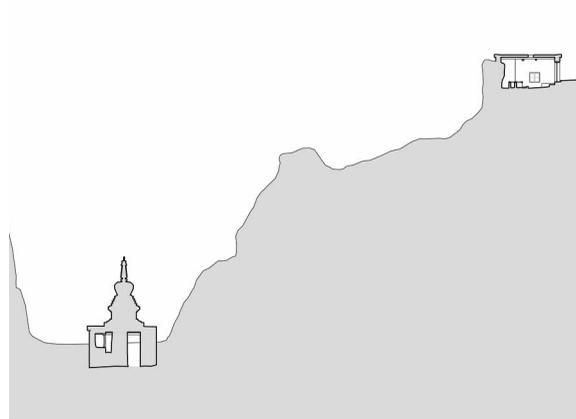
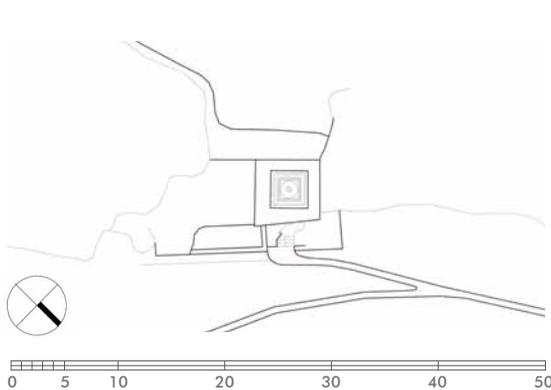
Standing at the eastern foot of the entire complex where the old footpath winds upwards from the river valley, the gateway stupa is an interesting monument whose original design relates to the entire complex.

Back in 1991, the stupa was still flanked by houses to the right and left. The open entrance area is furnished with old wooden beams and carved capitals. The remaining lion corbels - one is walled up on the southwestern side, two more are situated next to the passage and at the window opening of the northeastern wall - as well as the interior paintings, which can only be reached with considerable difficulties through the tiny window, point to early origins.

The former open passage between the lion corbels of the ceiling, originally extended to the painted niche at the the southeast side.¹ The lion corbels have a remarkable similarity with those of the portal frame at the niche of the assembly hall of Sumda Chung in Ladakh, an early temple that refers to the Alchi Group of Monuments.² The building structure and the appearance of the stupa's structure have been changed by the interior brick lining and the renewal of the roof area, to which a painted concrete top was added.

1 For more details see LAURENT on page 124.

2 See LUCZANITS 2004: 125-126.



15 Site and section. TU Graz 2013.



16 A comparable gateway stupa near Likir in Ladakh. HN 2000.



17 Lion corbel in the temple of Sumda Chung. Luczanits 2009.



18 Retaining walls at the southern and western side of the monastic complex. CA 2011.



19 Terraces in front of the east facade of the main building. CA 2011.

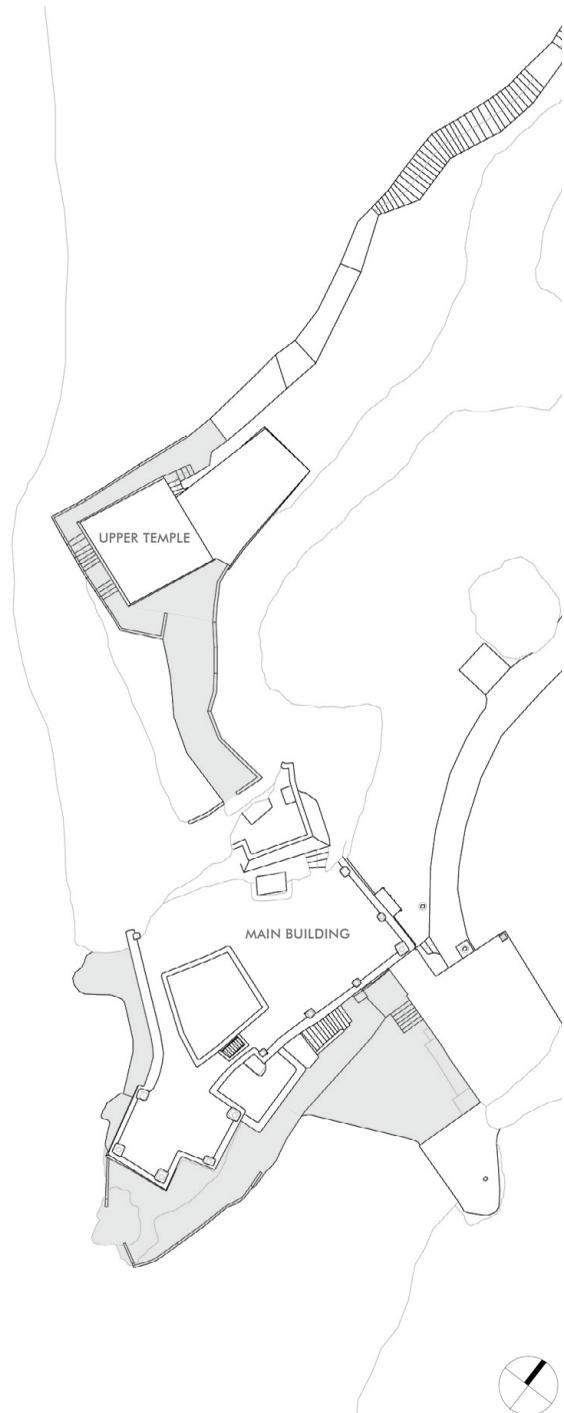
FOUNDATIONS AND TERRACES

The lower area of the courtyard, located in front of the eastern and southern facades of the main building, was artificially extended. An ambulatory was also constructed around the upper temple (Tib. *lha khang gong ma*).

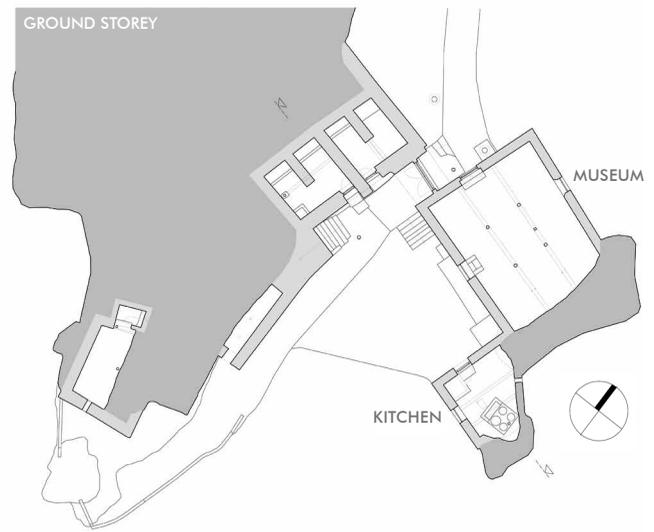
Some portions of these terraces rest directly on bedrock while others are supported by stone masonry. The supporting walls of these terraces, were reinforced with wooden anchors to accommodate tensile forces, sometimes involving the use of mortar. These terraces were basically designed like wooden ceilings and are laterally superposed or clamped on the rock (i.e. traditional construction pattern: main beam - lower beam - floor layer - bulk material or mountain grass - different clay layers). On the southwestern side of the main building, the retaining wall and terrace were recently secured with concrete; the reinforcement steel bars protrude outside and are hence exposed to climatic conditions.



20 Retaining wall in the south-east of the upper temple. CA 2010.



21 Terraces around the main building and the upper temple. TU Graz 2013.



22 Entrance to the monastery with the museum on the left side. CA 2011.



23 Inside of the museum with the red support construction. HN 2010.



24 Entrance door of the museum. DB 2010.



25 Bronze of Avalokitesvara inside the museum. CA 2011.

MUSEUM AND OLD KITCHEN

The entrance area to the monastery building is situated on the northern side. Directly to its left stands the museum building which can be entered from the front area.

At ground level the walls of the museum are made of stone masonry. The lower parts of these walls are capped with horizontal timbers, about a meter above ground level, while the upper parts are made of rammed earth. In 2011, the facades were plastered and whitewashed anew. The windows were refitted with new ornamental stucco frames painted in black (Tib. *nag rtsi*). The roof cornice was also changed and decorated with traditional elements.

Inside the museum is a single-floor room structured with wooden pillars and one window on the north and south side respectively. The walls are plastered and painted blue; the wall at the rear of the room is the actual rock. The ceiling is made of wood and is supported by two beams resting on four round wooden columns. An additional support was added beneath the beam on the left side of the room. The load-bearing wood construction is painted red. Lengths of cloth hang from the ceiling and the floor is covered by felt runners.

Passing through the entrance, you enter a courtyard whose northern end forms the wall of the museum building. To the east, there is an old kitchen with a central pillar and a window in the southern wall. The eastern side of the kitchen, opposite the entrance, leans on the bedrock. The southern side of the kitchen is supported by a block masonry work which develops into a rammed-earth wall. The brickwork of the west facade is uneven. It is composed of rammed earth on the right side of the entrance and made of stone masonry and large clay bricks on the left. Inside the room the walls and ceiling are heavily covered with soot. A small smoke outlet was adjusted in the ceiling.

The front area between the museum and kitchen forms an artificially extended terrace which opens up to a nearly vertical precipice in the south. A narrow well-secured path runs along the eastern facade around the multi-tiered main monastery building, until, arriving at the far south, the circumambulatory path is suddenly interrupted where it once led to the narrow terrace on the south-western side of the building. Today, most of the circumambulatory path is walled in by a balustrade.



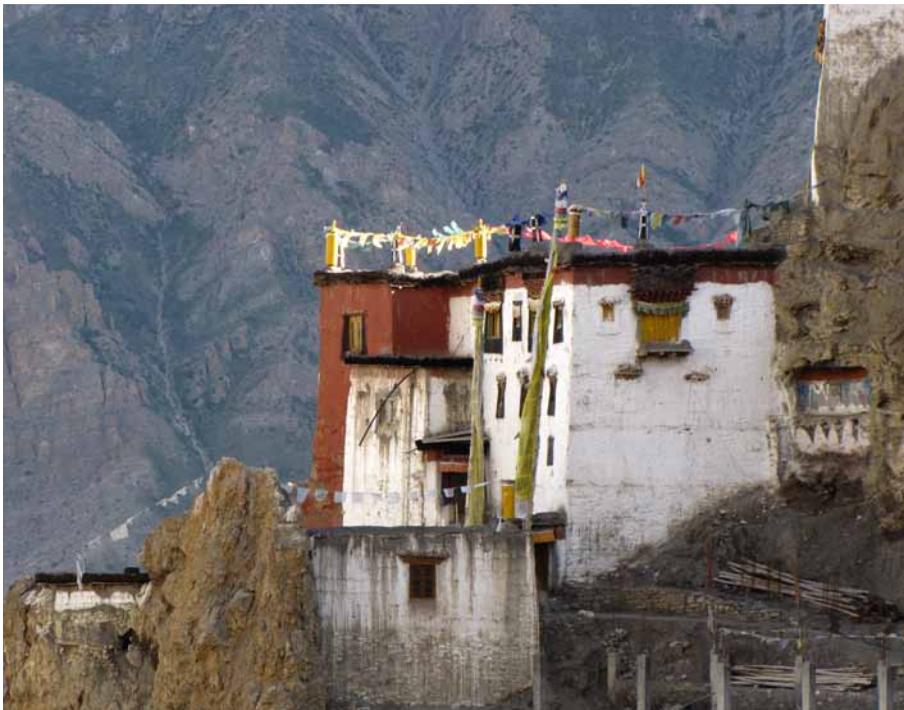
26 The courtyard of the monastery building. HN 2010.



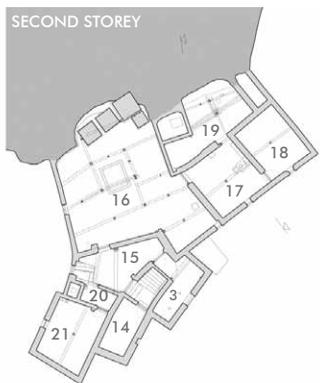
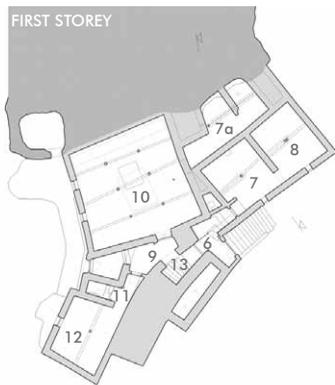
27 Inside of the old kitchen with clear visible systemchange. HN 2010.



28 South-eastern view of the monastery complex of Dangkhar. CA 2011.



29 North-eastern view of the main building. On the right side of the facade you find structural remains of former rooms and caves at the surface of the rock. LN 2010.



MAIN MONASTERY BUILDING

GROUND STOREY

- No 1 stable room
- No 2 stable room
- No 3 toilet with basement
- No 4 tower room
- No 5 ramp to room 4

FIRST STOREY

- No 6 ante-room
- No 7 side room above the stable
- No 7a hidden room
- No 8 side room above the stable
- No 9 ante-room
- No 10 assembly hall ('du khang)
- No 11 corridor
- No 12 tower room
- No 13 staircase

SECOND STOREY

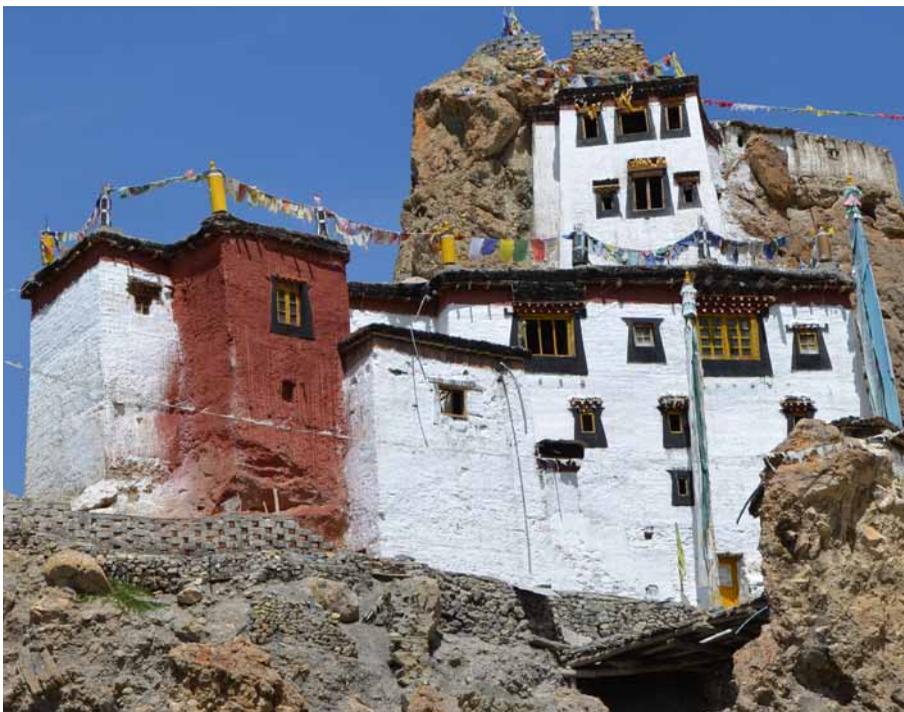
- No 14 lower protector's chapel (mgon khang)
- No 15 ante-room
- No 16 intermediate storey (above 'du khang)
- No 17 first side room
- No 18 second side room
- No 19 rear room
- No 20 ante-chamber
- No 21 tower room
- No 22 staircase

THIRD STOREY

- No 23 open inner courtyard
- No 24 ante-room to HH Dalai-Lama residence
- No 25 HH Dalai-Lama's residence (gzims chung)
- No 26 chamber
- No 27 upper protector's chapel (mgon-khang)
- No 28 Lochen Rinpoche's residence (gzims chung)
- No 29 staff quarters
- No 30 ante-room
- No 31 meditation cave



30 Northern view with the museum on the left side and the main building on the right side. CA 2011.



31 The east facade with the tower above the roof. CA 2011.

OUTSIDE WALLS OF THE MAIN MONASTERY BUILDING

NORTHERN FACADE

The lower area of the wall is a mud-mortared stone masonry. Wooden anchors with joints and teeth in the corners run horizontally and were used in several layers to accommodate the tensile forces and stabilize the wall.

The brickwork of the upper section is composed of rammed earth and mud brick masonry with bricks varying in size. The change of technique in the masonry is made evident by a vertical crack in the facade. The surface of the wall was whitewashed. Running along the facade a red band was painted just below the parapet of the roof. On the second and third floor, the lintels above the opening windows consist of traditional wooden design of different shape. They are wedged with plaster frames and were painted white. The window openings of the second floor were bricked up but their initial location is clearly visible. The windows and the balcony (oriel window/Tib. rab gsal) of the third floor were closed with planks. Around the access to the courtyard the wall is a blend of mud bricks and stone masonry.

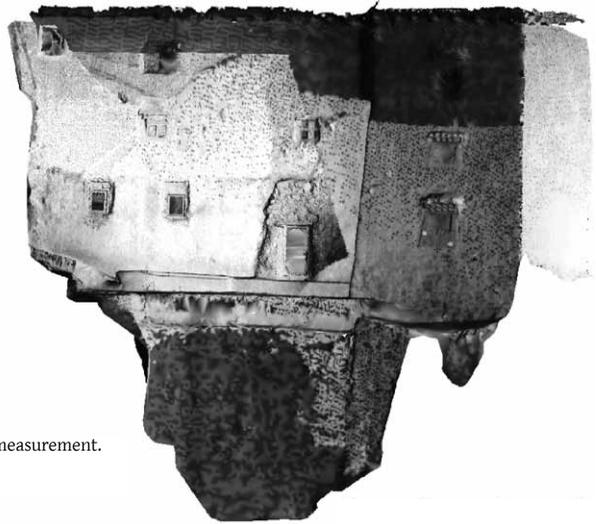
EASTERN FACADE

The south end corner of the eastern facade is the actual bedrock. It rises up approximately to the level of the first floor. As for the facade in the north, the wall is made of stone masonry at ground level. Horizontal wooden tie rods were used around the lower area of the north end corner. The upper floors are made of different brickwork. Wooden anchors were also used between the floors. Some beam ends located between the second and third floor, under the large window openings, are partly visible on the facade. The walls are whitewashed except for the red tower accommodating the two chapels of the tutelary deities (Tib. mgon khang). A red band runs along the facade below the parapet.

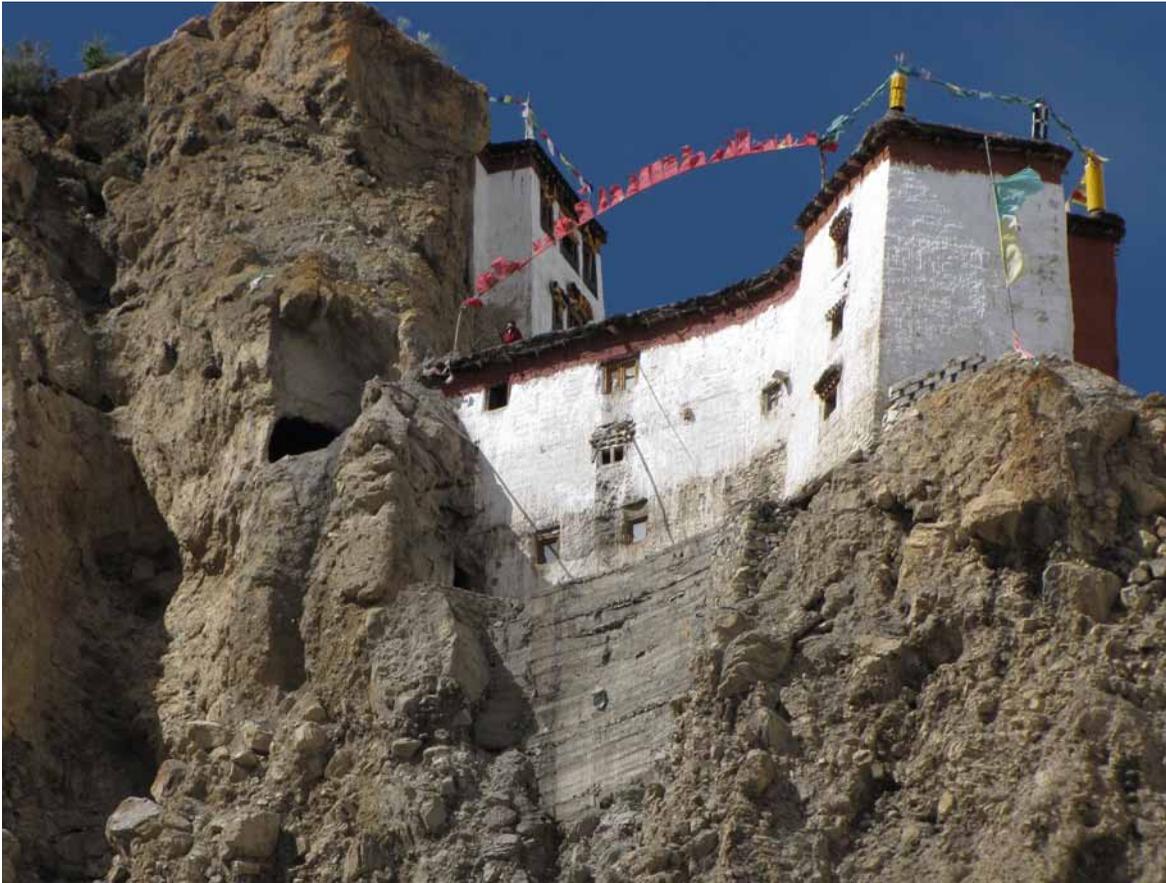
The design of the windows on the main facade follows a different pattern as far as their size and lintel are concerned. They were highlighted with traditional black stucco frames (Tib. nag rtsi). The tower accommodating the dry toilet has a single window. The small opening of the lower protector chapel (Tib. mgon khang) was temporarily closed. A large window of later style opens on the third floor. Finally, a small unsophisticated window devoid of black frame is located in the upper south end corner of the third floor.

SOUTHWESTERN FACADE

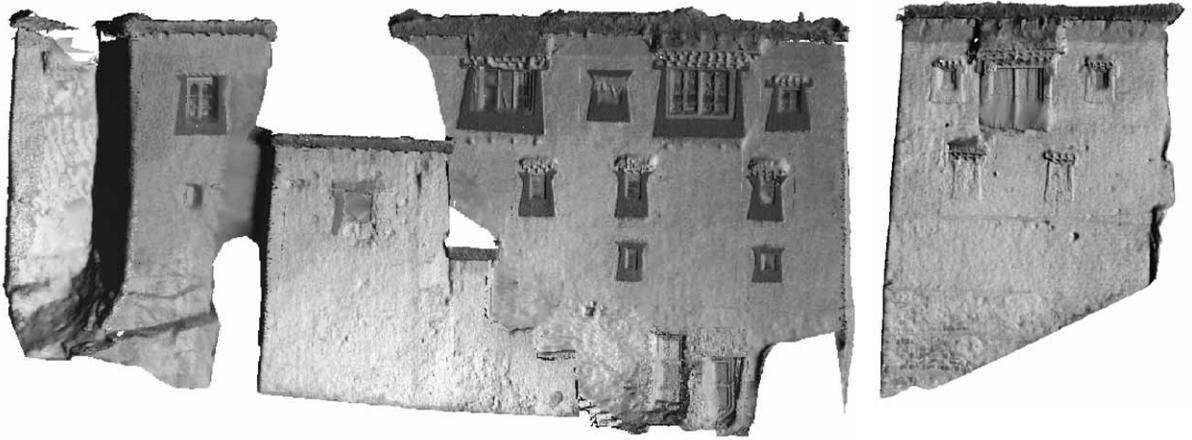
The vertical development of the building is made evident by the use of different techniques of masonry clearly visible on the facade. In the southern corner, the lower half of the wall is made of stone masonry up to the first window. The wall then develops into brick masonry. A single window opens on the second and third floor. The foot of the facade was partly concreted along with the adjacent terrace. The door frame is made of natural stone masonry. The wall of the second and third floor is made of bricks. A single window opens in the staircase of the second floor. The outer wall of the assembly hall (Tib. 'du khang) is made of mud bricks. Two industrially manufactured windows were installed in the wall. A beautifully executed old window opens on the second floor; its lintel bends outwards. Finally, there are two simple opening windows on the last floor.



32 Southwestern facade of the monastery's main building digital 3D measurement. K&S, TU Graz 2011.



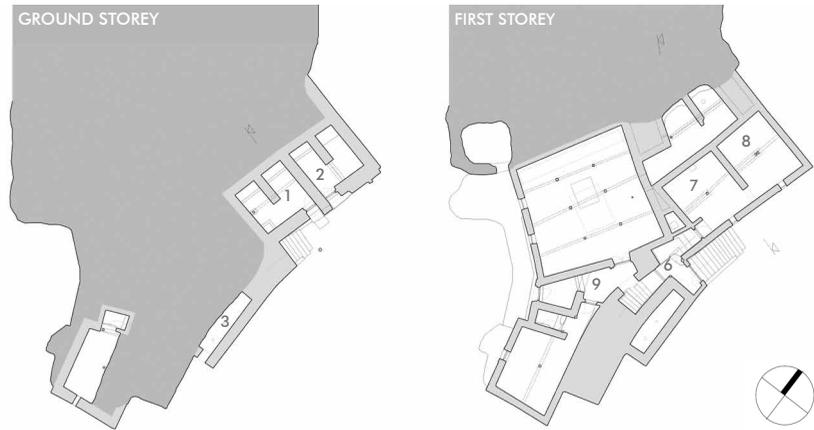
33 South-western view of the main building with a cave-like space on the left. LN 2010.



34 Eastern and northern facade of the monastery's main building digital 3D measurement. K&S TU Graz 2011.



35 Eastern view of the monastery complex. LN 2010.



36 Eastern facade of the main building. LN 2010.



37 External staircase and entrance door to the main building. CA 2010.



38 Doors of the two stables on the ground floor. DB 2010.



39 Inside of the left stable. CA 2010.

INTERNAL SPACE OF THE MAIN MONASTERY BUILDING

The development of the main building with its many construction phases, explains a certain number of structural changes. The following description not only provides a glimpse into the architectural development of the edifice but also indicates the flaws that resulted from its massive enlargement over time.

GROUND FLOOR

An open flight of steps on the eastern facade leads to the actual entrance of the main monastery building. At the foot of the steps two doors give access to both stable rooms in the lower storey (1 and 2). The stable walls are unrendered and at the rear of the rooms two massive stitch walls divide each room into two separate areas. The walls are made of massive stonework, unplastered, and only partially filled with mortar. Horizontal wood lacing was added to accommodate tensile forces. The doors are surmounted by wooden lintels. The beams of the ceiling are no longer adequately supported by the walls and tend to dislodge. The stable floors are made of trodden earth and there are no windows. The basement of the toilet next to the staircase (3) is made of a stonework wall with a direct access in the south to collect humanure.

FIRST STOREY

An entrance door at the end of the open flight of steps gives access to a narrow ante-room (6) which turns to the right where a passage branches off to the right leading up some more steps to both rooms above the stables (7 and 8). The staircase is delimited by a lateral parapet made of mud bricks. The steps are stone slabs. The floor of the hallway is made of cement. The wooden ceiling was recently covered with a corrugated iron sheet.

An aisle of two rooms opens on the right side of this area. The lintel of the door and adjacent ceiling are staggered at different levels. The rooms 7 and 8, which are simple but spacious with earth floors and central pillars, are each illuminated by a window on the east facade. The walls of these two rooms are built of random texture. The lower part is made of stone and large-sized mud bricks. Horizontal wooden anchors are visible above ground level. The upper part is made of plastered mud bricks, as are the intermediate and the rear walls. Flaking plaster and cracks are visible in many places. Most of the beams are dislodged from their initial position due to the overload applied on the ceiling. The two spacious rooms are unfurnished and are no longer used. Presumably they had been the monk's former living quarters before the new monastery was built.

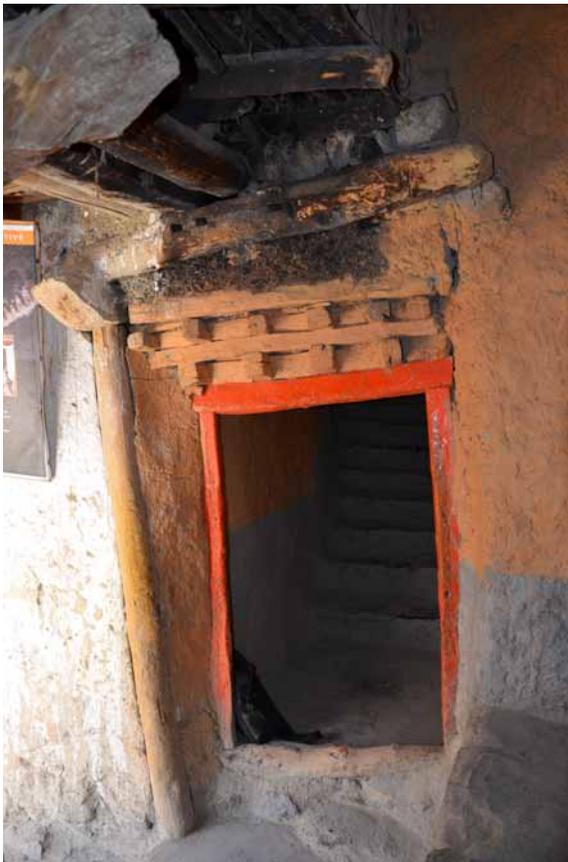
To the left of the entrance area (6), a stairwell, which is framed by the remains of an old door case, runs further upwards. After the first few steps, a passage opens up to the right leading to another ante-room (9) in front of the assembly hall.



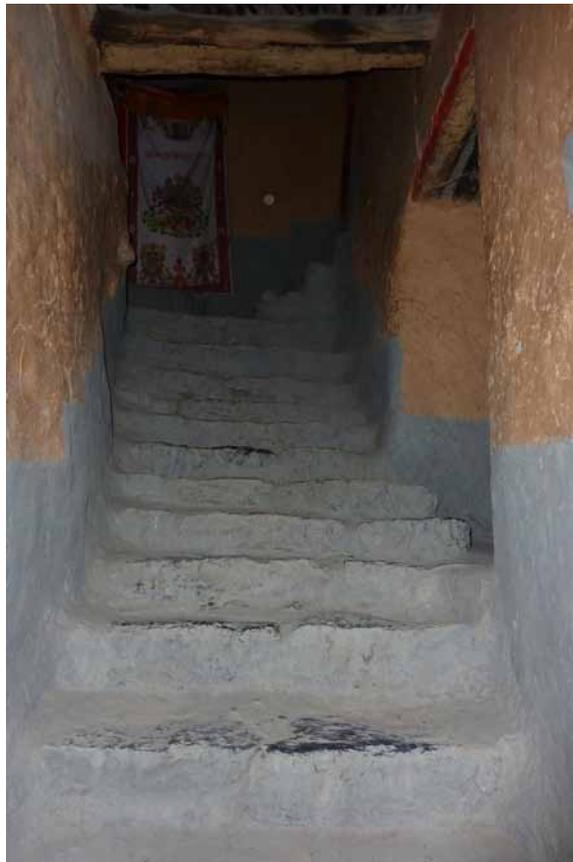
40 Access to the right side spaces of the entrance area. CA 2011.



41 Cover construction of the corridor to the side rooms. CA 2011.



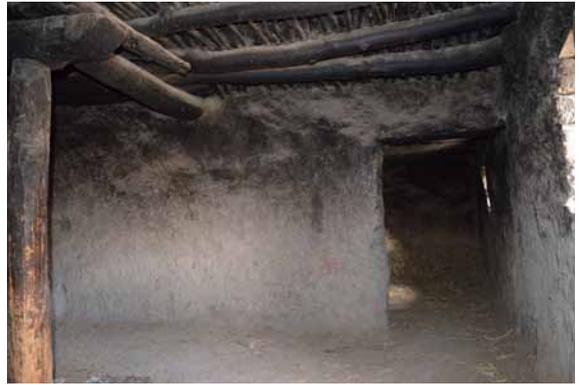
42 Construction of the old door opening to the interior stairway. CA 2011.



43 On the right the access to the anteroom of the assembly hall. HN 2010.



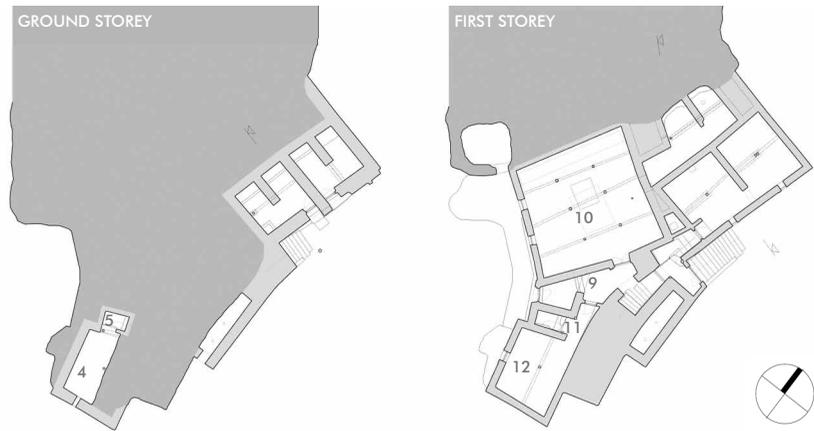
44 Room 7 with the front window and the niche next to the door. CA 2011.



45 Intermediate wall of room 7 to room 8. CA 2011.



46 Space flight with the entrance door in the background. CA 2011.



47 Entrance door to the assembly hall. HN 2010.



48 South-western part of the assembly hall. CA 2011.



49 Central area of the assembly hall. CA 2011.



50 Entrance at the south-eastern inside wall. CA 2011.

ASSEMBLY HALL

Directly opposite the passage of the stairwell, a door leads to the assembly hall (Tib. 'du khang). This large room features a timber floor and two rows of pillars. It was originally illuminated from above through a central skylight. On the south-western side of the room there are two small windows, that were obviously added later. On the north-western sidewall a glazed cabinet-altar accommodates the library in both its side parts and three statues in the central area. Originally the clay sculptures of Śākyamuni (in the centre), Tsongkhapa (to the left) and Maitreya (to the right) were situated on a bricked up altar base, that is now hidden behind the cabinet construction. Peering through the glass, you can make out some of the paintings on the rear wall behind the statues.

Three sidewalls of the assembly hall are built of mortared-mud bricks. The north-western wall of the room located behind the bookcase and glazed cabinet altar is the bedrock of the cliff. It was evenly plastered and decorated with murals, some of the best preserved in this room. The murals that once covered the four walls of the room are today only partly preserved. Damaged areas and cracks were tentatively plastered or repaired, in particular the area surrounding the walled-up doorway on the north-eastern wall. The wooden floor of the room was adjusted with wedges which at some time damaged the foot of the walls. The south-western wall was lately replastered. A different kind of mixture, both in texture and in colour, was spread around the renewed windows.

The ceiling is made of beams and willow-stick joists. Some pieces of wood may have been changed locally over the years. Additional wood poles were set to address overloaded areas. The skylight (Tib. *nam khung*) in the middle area of the ceiling of the assembly hall was closed with planks.



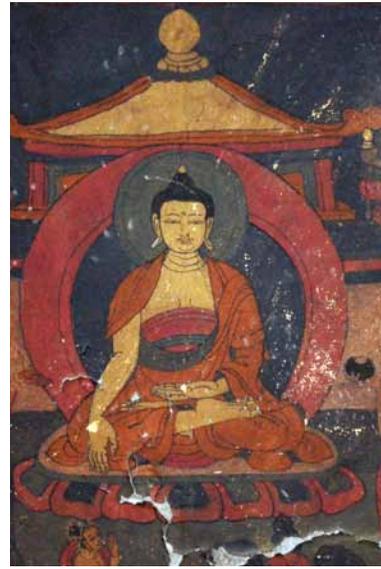
51 The central area of the cabinet with the altar and the sculptures behind the glass. CA 2011.



52 Altar base behind the cabinet. CA 2011.



53 Green Tara, north-eastern wall. CA 2011.



54 Examples of the paintings on the north-western sidewall, hidden behind the cabinet. CA 2011.



55 Inside of the assembly hall with the glazed cabinet accommodating the library and three statues in the central area. CA 2011.



56 The clay sculptures of Tsongkhapa (to the left), Śākyamuni (in the centre) and Maitreya (to the right) behind the glazed cabinet-altar on the north-western side of the assembly hall. CA 2011.



57 The collection of the library in the assembly hall, after the monks removed the books from the bookshelves of the glazed cabinet. CA 2011.



58 Entrance area in front of the assembly hall. CA 2010.



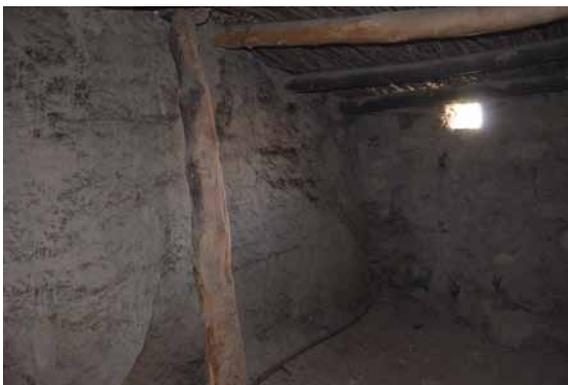
59 Passage with access to the terrace on the south-western side. CA 2011.



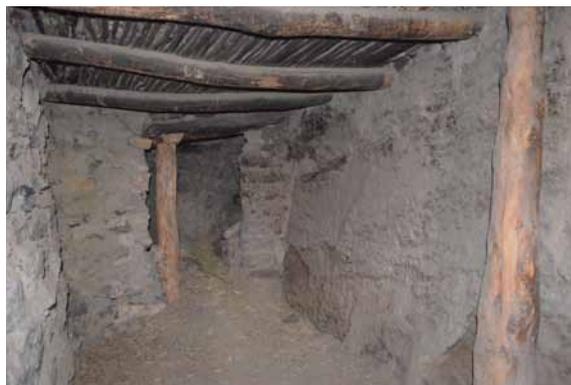
60 Western wall of the tower room 12. CA 2011.



61 Northern and eastern wall with the entrance to room 12. CA 2011.



62 South-eastern corner of the room 4 below room 12. CA 2010.



63 Entrance to room 4 on the northern side. CA 2010.

Following the passage (9) in front of the entrance to the assembly hall, you arrive at a door leading to the terrace at the rear of the main monastery building which opens to the south-west. To the left of the assembly hall's entrance, the north-western wall is made of brick-mortared masonry. Opposite the door, the east wall is of stone-mortared masonry provided with a single horizontal wooden anchor of approximately 1.50 meter in height. The wall on the south-west is also made of stones. The texture of the masonry above the doorway is uneven. Somewhere in the middle of the passage, a narrow area (11) leads to another room in the corner tower of the monastery building (12) with a centre pillar and a window towards the west. The west side wall of the corridor is built of mortared mud bricks. The east wall is of random stone masonry. The ceiling and door lintels are made of large wood sticks. The walls of the corner room (12) are of stones up to the window parapet and then made of mud bricks, as is clearly visible from the outside. All surfaces are plastered. A traditional beam-joist ceiling, with a single central beam, is supported in the middle of the room by a circular wooden pole surmounted by a capital. The windows have designed shutters made of wood.

From the narrow area in front of the room, a steep ramp (5) leads down to a room on the ground floor of the tower (4). The staircase-like access is made of poorly adjusted stones. The lower part of the wall is made of stone and then develops into mud brick masonry. The wall was only partly plastered. The ceiling is made of willow-stick joists.

In the lower corner room (4) the left side leans directly on bedrock. The other walls are made of a well-mortared stone masonry. None are covered with plaster. The ceiling is made of beams and willow-stick joists. Leaning against the left wall, a single pillar surmounted by a carved capital supports some joists. The lintel of the doorway consists of large wood sticks which are supported by a wooden pole.



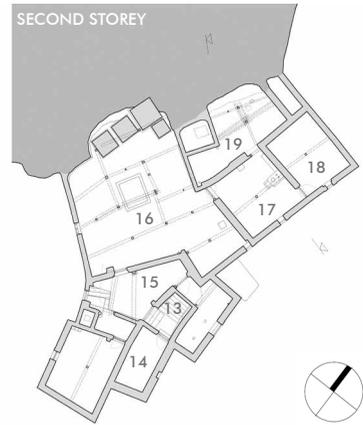
64 Passage to the tower room 12. HN 2010.



65 Descent to room 4. CA 2011.



66 Carved column capital in room 4. CA 2011.



67 Staircase (13) with the entrance to the lower protector's chapel and the access to the foyer on the second floor. HN 2010.



68 Ante-room (15) with the entrance to the tower room on the left and the door to the intermediate storey on the right side. HN 2010.



69 The intermediate storey (16) above the assembly hall. HN 2010.



70 The former opening of the skylight in the middle area. HN 2010.

SECOND STOREY

The staircase (13) leads up to the second storey, passing by the lower protector's chapel (14). The walls of the staircase are of mixed masonry, stonework in the lower part and mud brickwork above. These massive walls are unevenly plastered and painted ochre and grey. The steps of the staircase are made of stone slabs. Parts of the ceiling overlap at different levels.

LOWER PROTECTOR'S CHAPEL

The lower protector's chapel (14) is a simple rectangular room which only a few individuals are allowed to enter. Originally there was a window on the eastern side which has since been bricked up in a rather make-shift manner. As far as it is possible to judge from the threshold, the walls are made of stones and mud bricks. The surface of the walls is plastered and covered with sooted murals. Many cracks were tentatively repaired. The wooden beams of the ceiling rest directly on the side walls. Next to the entrance of the chapel the steps turn to the right, ending in an ante-room on the second storey (15). The walls of the anteroom are painted ochre and grey and are likely to be made of mud bricks. The wooden ceiling sags due to overload.

INTERMEDIATE STOREY ABOVE THE ASSEMBLY HALL

On the north-western side of the anteroom is a door that leads into a low, broad room lying directly above the assembly hall (16). In the middle of the floor, which is covered with well-trodden clay, the former skylight of the hall below still exists in the form of a square, bordered with a parapet built of mortared mud bricks.

To the rear, three large stupas and a smaller one, which were directly built into the rock face, partially disappear into the ceiling above. The room is supported by sixteen wooden pillars, all of which are neither regularly arranged nor very carefully made. The ceiling construction is crude and thick with soot. In the area above the former skylight, you can see that the ceiling opening has since been carelessly boarded up allowing rainwater to leak through. All these signs clearly indicate that later stories must have been built upon the original roof area of the assembly hall. This room is now illuminated by a small window on the south-western side and another on the eastern side.

The surrounding walls are built of mortared mud bricks. Their surfaces are uneven and painted with large grey, white and red bands. The north-western side of the room, behind the stupas, leans on bedrock and is heavily covered with soot. The old window on the south-western wall leans outward. Its present position is stable. The second window located on the east wall is partly recessed and extends into the wall of the next-door room. The wooden ceiling is in poor condition and some supporting beams were reinforced by additional wood poles.



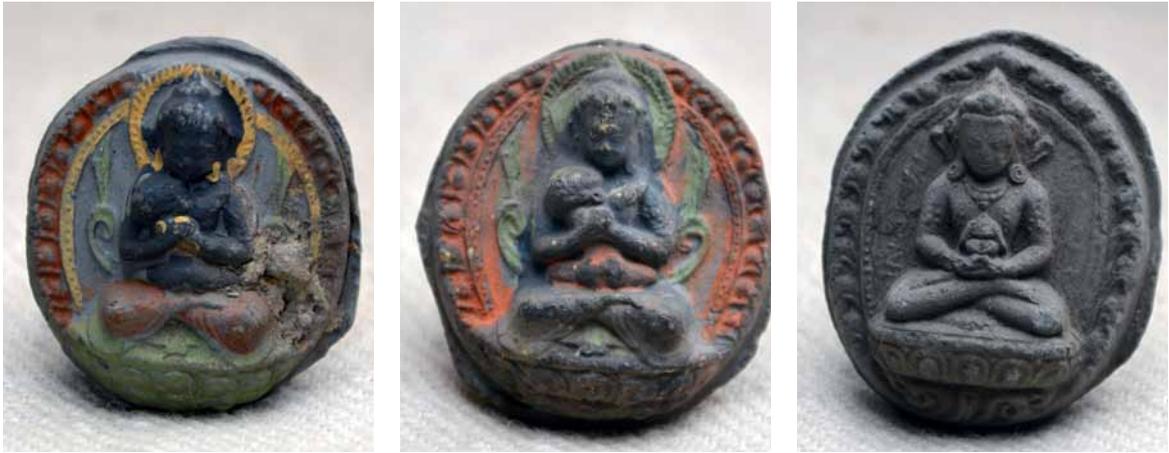
71 North-eastern side with the window of the east facade. CA 2011.



72 North-eastern corner of the room next to the east facade. CA 2011.



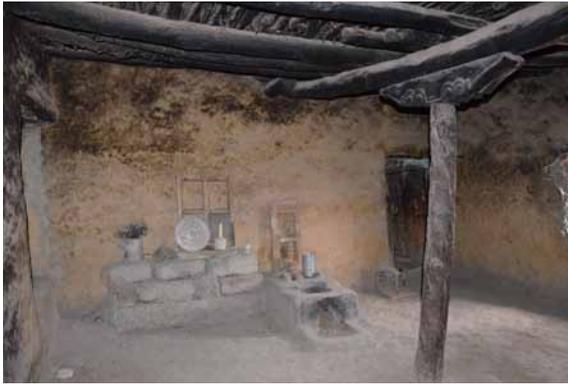
73 Middle area of the intermediate storey above the assembly hall with the parapet of the lantern. CA 2011.



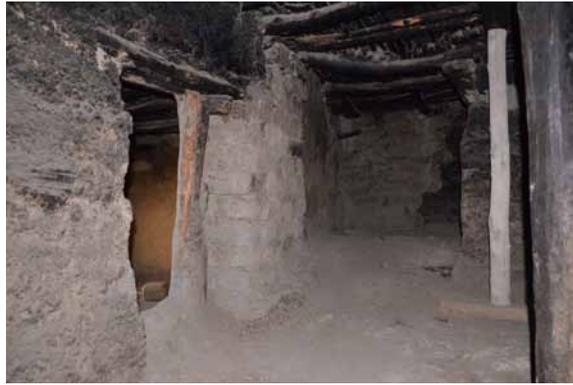
74 Some of the Tsatsas, that are treasured in the inside of the stupas. CA 2011.



75 The stupas on the former roof of the assembly hall at the backside of the room. CA 2011.



76 Northern wall of the first side room with bricked up fireplace. CA 2011.



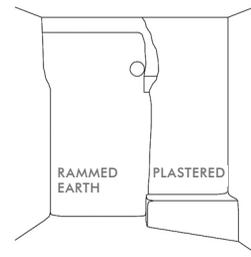
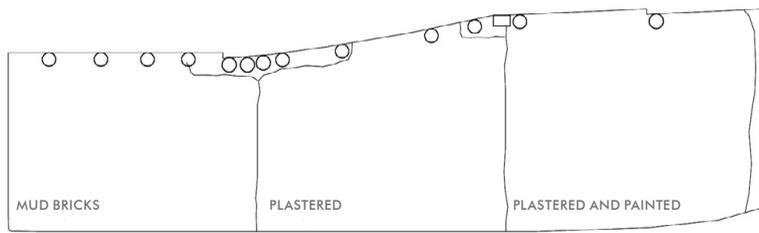
77 Room 19 with its entrance in the eastern wall. CA 2011.



78 North-western area of the room 7a. CA 2011.



79 Walled up passageway to the adjoining assembly hall. CA 2011.



80 Eastern and southern wall of room 7a. TU Graz 2013

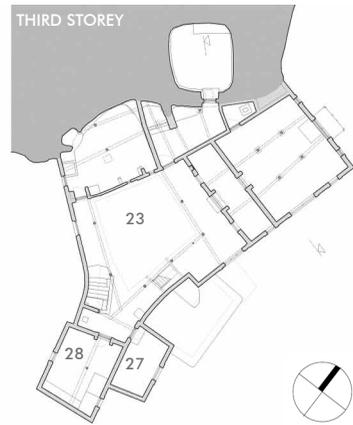
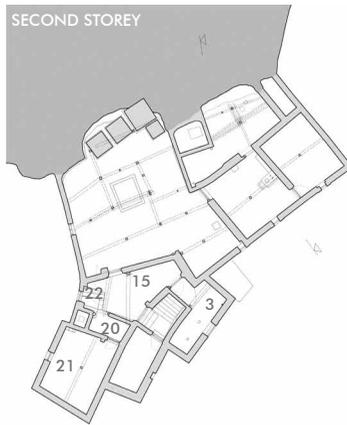
In the front area of the intermediate storey, a door on the right opens up to two more rooms (17 and 18) on the northern side of the building. Their floors are made of clay and each have a single window at the eastern facade. The ceiling is supported by a single wooden pole surmounted by a capital in both rooms. The walls of these two rooms both have brick masonry and were not similarly plastered. Some more or less severe cracks are visible on their surfaces. The walls of room 17 are ochre while those of room 18 are white. The north wall of room 18 was furnished with two windows which were subsequently walled up. The edges of their initial position are still clearly visible.

In the first room (17) there is a solidly built floor hearth and to the left a narrow door leads into an unlit room (19) whose rear wall is made of bedrock. The walls are made of rammed earth to the left of the door and to the northern side of the room. To the right side of the door, the wall is of mud bricks. Its thickness varies. On the south, an area was later walled up. Next to it, the surface of the wall was plastered, and runs behind a rectangular granary chamber in the left-hand corner of the room which was once accessible from above. The walls of the granary chamber are made of mud bricks. Their surfaces were plastered and contain some small holes and repaired areas. The ceiling in room 19, which is borne by two wooden pillars, is in a bad state, one broken beam has been secured by another wooden pillar. The wooden beams of the ceiling have been supported in several places where the wood has splintered or threatens to do so. A small opening in the northern wall of the room seems to lead to the outer wall of the monastery building which, however, has been made inaccessible by a walled-up area, behind which there is a narrow space.

HIDDEN ROOM

In the front of room 19, a small opening was uncovered which gives access to a similar room below (7a on the first storey). A rendered door-opening on the southern wall proves that, originally, this room must have been accessible from the assembly hall. The east wall is built of three different masonries clearly delimited by construction joints; a coarse mud brick area on the left, a plastered wall surface in the middle, and a painted wall with a clear ledge which indicates some local adjustment work or restoration. In the south, a party wall divides the area and the adjoining assembly hall. The right side is built of bricks while the left side is of rammed-earth. Through a large cleft in the left corner it is possible to see the rammed-earth portion of the wall running eastwards. The top of the wall, just below the ceiling, is made of mud bricks randomly arranged. The edge of the former doorway is clearly visible in the middle of the wall. A few beam-ends from the assembly hall and from the door slightly stick out.

To the right of the walled-up doorway stands another well built granary chamber. The western side of the room leans on bedrock. The stitch wall on the western side of the room is built of large mud bricks. Another wall made of mud bricks was constructed in the north in front of the actual facade of the building creating an empty space devoid of access. Finally, the ceiling pattern is irregular. A few broken beams are supported by additional poles.



81 Taking stairs, left the access to room 20 and 21. CA 2010.



82 Stairway up to the third floor from above. CA 2010.



83 South-eastern corner of the inner courtyard. DB 2010.



84 North and east side of the inner courtyard. CA 2011.

From the other side of the second storey and the southern part of the front area (15), a small ante-chamber (20) which also features a built-in granary in one of the corners, leads into yet another room of the corner tower (21). The walls of the room 20 are built of mortared mud bricks. Their uneven surfaces were painted ochre. Many cracks were observed on the surface of the east wall, especially where it meets the west wall of the lower protector chapel perpendicularly. The walled granary chamber on the west side of the room is accessible from above. The walls of the corner room (21) are of mud bricks. Their surfaces are uneven and cracked in places. The western wall features a single glassless window with wooden shutters. A traditional ceiling of beams and shafts is supported in the middle of the room by a single pole surmounted by a capital. Large cracks are visible on the south wall just below the extremity of the main beam. Like the other rooms it has a clay floor. Finally, the front area (15) again gives access to an annex on the eastern facade which accommodates a dry toilet facility (3) that is made of unplastered mud brick masonry. The corners and wall connections are made of poor masonry bonds. The wooden ceiling is covered with a flat rammed-earth roofing. A skylight-like opening is located above the entrance door.

THIRD STOREY

A staircase (22) leads up to yet another storey around an open inner courtyard (23) from where all the rooms on that level can be accessed. The outer wall next to the staircase is built of mud bricks and appears to be rather thinly dimensioned. The surface was plastered and painted. It has a glassed window. The stone-paved steps are uneven. A parapet of mud bricks borders the staircase.

THE INNER COURTYARD

The walls of the inner courtyard are of mud bricks. Their uneven surfaces were plastered and painted. In the south end corner of the courtyard next to the room 28, an area made of adobe was left unplastered. The east wall has a recessed glassed window of large dimensions. It was once part of an oriel window. The keyholder in 2011, Gen Palden, did mention that the oriel windows of the east facade had been removed. Besides, it seems that the sections of the corbels that once supported the bays are still clearly visible under both windows. Interestingly, the architectural development of oriel windows can be attributed to the 16th-17th century in the Western Himalayas. The south-western wall also has a small window.

A portico runs along three quarter of the courtyard. It is supported by columns at more or less regular intervals and surmounted by capitals, many of which were finally carved and painted. The roof of the portico is an integral part of the roof of the monastery and is hence described below. In the summer of 2011, a temporary greenhouse-like roof made of timbers and plastic sheets was built over the open area of the courtyard. The original position of the former skylight to the intermediate storey below is partly visible on the rammed-earth floor of the courtyard.



85 Northern wall with the entrance to the vestibule of the HH Dalai-Lama's residence. CA 2010.



86 South-eastern corner with the entrance to the upper protector's chapel (left) and Lochen Rinpoche's residence. CA 2010.



87 North-eastern niche of the inner courtyard with the window of the eastern facade. CA 2011.



88 Corner detail of the wooden structure of the portico. CA 2011.



89 Temporary roof above the inner courtyard. CA 2011.



90 Tea break in the northern part of the inner courtyard. CA 2011.



HH DALAI-LAMA'S RESIDENCE

The large sacred hall called HH Dalai-Lama's residence, which is situated on the northern side, consists of a vestibule with a window to the east (24) and an assembly room (25). The entrances lie in the central axis of both rooms. The walls of these two rooms are built of mud bricks. Their surfaces were plastered and painted with glossy colours. There are many cracks especially along the party wall of these two rooms.

One large-scale window and another smaller one in the eastern facade light up the assembly room. Two longitudinal beams run along the ceiling. Four columns surmounted by capitals support them. Both columns and capitals were carved and painted. The rest of the ceiling construction is draped with lengths of cloth. The floor of the room is made of rammed earth and was covered with felt. From the inside you cannot see the large balcony and the two small windows on the outer northern facade – they seem to have been walled up. In the centre part of the northern wall stands a glazed statue cabinet-altar which reaches up to the ceiling, concealing the wall behind.

On the western side, a door opens up to another room (26). It is a room of very small dimensions made of mud brick masonry. Situated in the back of that chamber, an opening in the floor, no bigger than a rat hole, overlooks room 19 below.



91 West and north wall of the HH Dalai-Lama's residence. CA 2011.



92 Altar wall on the north side of the HH Dalai-Lama's residence. CA 2011.

UPPER PROTECTOR'S CHAPEL

At the south-eastern corner of the inner courtyard, there are two more sacred rooms. The upper protector's chapel (27) is a plain room lit by a window on the eastern side. The access to the chapel is restricted. As far as one can judge from outside, the walls are made of mud bricks and were painted ochre.

LOCHEN RINPOCHE'S RESIDENCE

Directly next to it lies the uppermost room of the corner tower, named Lochen Rinpoche's residence (28). This room has one single central pillar and its floor is covered with rugs. The windows in the eastern and western walls let light in. The walls are built of mud bricks and were painted ochre. Strong vertical cracks in the masonry can be observed on the corners and right below the beams of the ceiling. A single longitudinal beam is supported by a column surmounted by a capital. Both were carved. A step-like base made of mortar was constructed along the east and south sides of the room.



93 Inside of the upper protector's chapel. HN 2010.



94 The altar on the southern side of the chapel. HN 2010.



95 Northern area of Lochen Rinpoche's residence. HN 2010.



96 Southern area of Lochen Rinpoche's residence. HN 2010.



97 Windows on the east facade of the HH Dalai-Lama's residence. CA 2011.



98 The altar in the middle area of the northern side of the HH Dalai-Lama's residence. CA 2011.



99 Thangkas, eastern wall of the Lochen Rinpoche's residence. CA 2011.



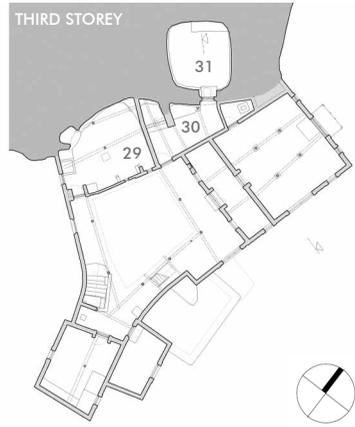
100 Clay sculpture at the altar of Lochen Rinpoche's residence. CA 2011.



101 South-eastern corner of the Lochen Rinpoche's residence. CA 2011.



102 Southern wall of the Lochen Rinpoche's residence. CA 2011.



103 Southern outer wall of the staff quarters (29). DB 2010.



104 Northwest corner of the staff quarters. DB 2010.



105 Room 30 with the access from the courtyard. HN 2010.



106 North-western side of the room 30 with the door to the cave. HN 2010.

On the western side of the open courtyard towards the rock face lie the staff quarters which are equipped with a kitchen and a sleeping place (29). Two wooden pillars support the ceiling, a window in the southern wall lights up the room. The western side of the room abuts the bedrock which was partly plastered and painted. The side walls are bumpy and built of mud bricks. They were plastered with thick layers of mud in some places.

In some areas next to the door the inner structure of the wall (with a layer of mountain grass or other plant) is clearly visible because of the broken wall surface.

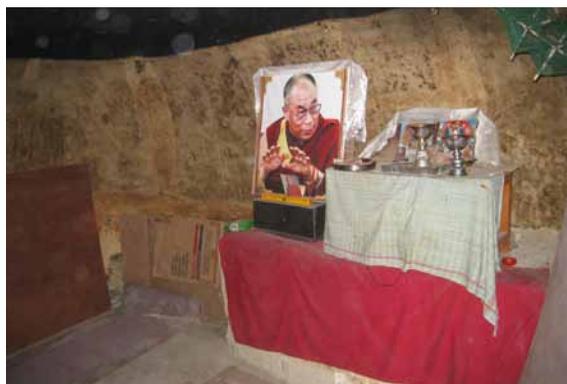
MEDITATION CAVE

An adjoining meditation cave can be entered from the inner courtyard via an ante-room (30). The west wall of the ante-room abuts on bedrock and is partly plastered and repaired with stone and mud bricks. The side walls and the stitch wall of the niche are of mud bricks. They were plastered unevenly. Flaking areas indicate presence of shaft or straw inside the mixture. In the western corner of the room, opposite the entrance, a parapet made of bricks forms a basin-like quadrangular feature. Inside, the top of the axis mundi (srog shing) of the biggest stupa located in the room below sticks out. The structure of the ceiling is random, in particular above the entrance of the cave. The access to the granary chamber situated below the floor was blocked and its exact location is no longer visible.

The so-called meditation cave (31) is an oval room that was cut directly into the rock of the cliff. The lower part of the walls were partly plastered and painted ochre. Its ceiling was blackened with soot. Around the doorway the wall is made of mud bricks. An opening was made above the entrance to provide light. It is partly protected by a simple skylight made of wood and plastic sheets. The floor of the meditation cave is of rammed earth. A walled up altar is arranged opposite the entrance on the north-western side of the cave.



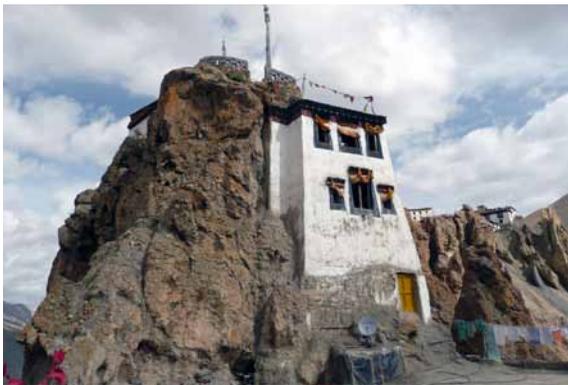
107 North-eastern area and entrance of the meditation cave. DB 2010.



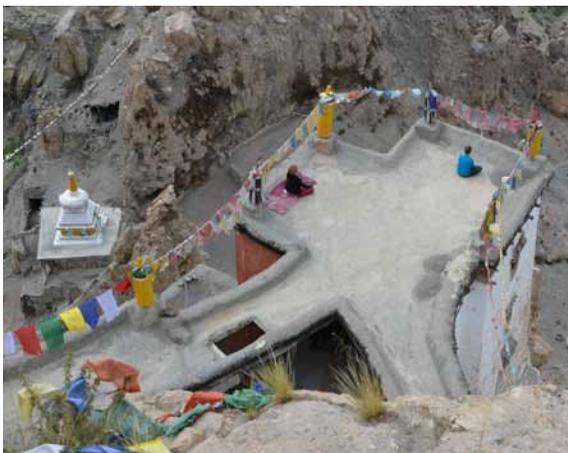
108 The altar of the meditation cave opposite the entrance. DB 2010.



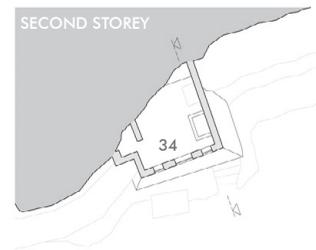
109 Detail of a photograph taken by Samuel Bourne 1866.
© Victoria and Albert Museum, London.



110 South-eastern facade of the tower. CA 2010.



111 Roof area of the main building. CA 2011.



TOWER



ROOF AREA

CEILING CONSTRUCTION AND ROOFING

Most ceilings of the main monastery building follow the same pattern. Longitudinal beams support secondary beams of smaller diameters. Joists made of willow sticks are arranged between those secondary beams. The main longitudinal beams are supported by columns or poles and may or may not be surmounted by a capital. Beams are usually made of poplar or willow. Juniper is also used in particular for woodcarving work. The roofing is completed by adding barley chaff, straw, or grass on top of the joists. Layers of humid loam or mud are then applied on top and mechanically rammed.

TOWER

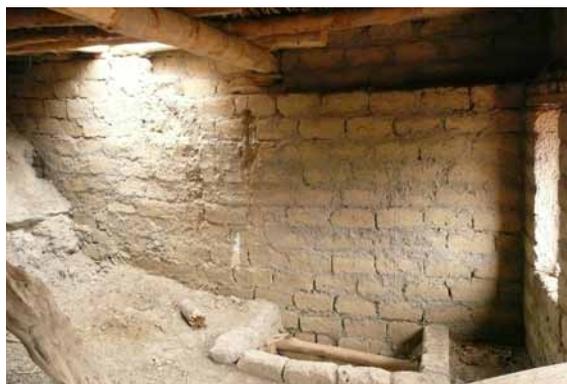
The tower is situated at the western side of the roof area of the main building, directly in front of the steep rock wall. A wooden staircase on the eastern side of the inner courtyard leads up to the roof of the main building. After climbing an open flight of steps on the south-eastern side of the tower you can enter the ground floor through a door and traverse the three storeys (rooms 32, 33 and 34) via which you can get to the roof and then along a path up to the upper temple.

The rear side of the tower leans against the bedrock. The lower part of the building is made of stone masonry and then develops into mortared mud brick masonry. The walls of the inferior room are not plastered. The brickwork changes above the middle of the first floor. The size of the bricks becomes smaller and the surface of the walls is only plastered in the lower area. The windows on the south-eastern side of the tower are unglazed and also reflect different construction phases. Access to the next floor is gained through the ceiling by using ladders. An opening in the roof top is temporarily closed by a wooden board.

Older pictures show that the tower originally only consisted of one upper storey with a kind of open courtyard on its roof. Due to the construction of the concrete flight of steps on the rear side of the rock, the path for visitors of the upper temple was relocated outdoors.



112 Windows of the south-eastern facade in the first floor. HN 2010



113 Access to the roof on the northern side of the second floor. CA 2010.



114 View from the north-west. CA 2010.



115 South-eastern view of the building with its walled terraced platform of solid rock and the ambulatory leading around the temple. DB 2010.

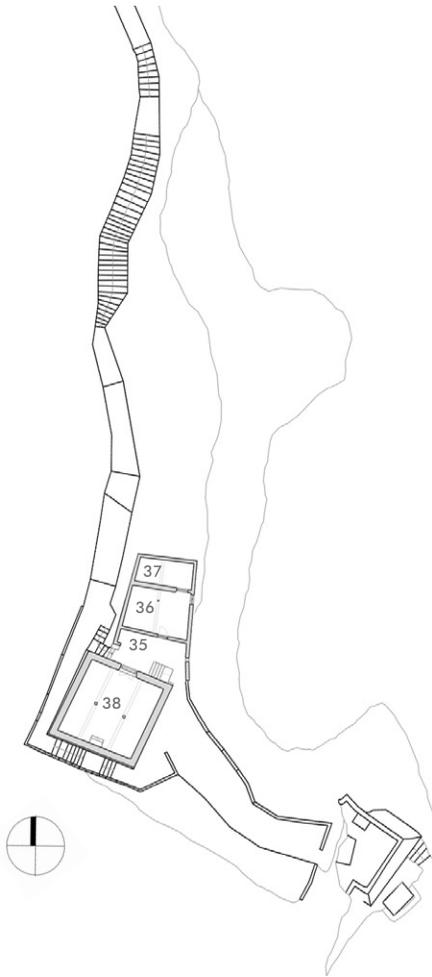
THE UPPER TEMPLE

You can reach the external area of the upper temple (*Tib. lha khang gong ma*) on the tip of the cliff, either via the tower or by using the outer staircase to the north.

A narrow circumambulatory path, parts of which have been artificially extended and walled-in, surrounds the temple overlooking the monastery building below with its walled terraced platform of solid rock. The adjoining annex on the north-eastern side consists of two rather desolate rooms (36 and 37), which are used as a kind of field kitchen during religious festivals once a year.

The temple hall (38) can be accessed via the roofed-over front area (35). It consists of a square room whose ceiling is supported by two wooden pillars. The temple was built directly on solid rock, the bedrock on the west side is relatively higher. The foundations are of stone masonry. The walls are built of mud bricks. They were smoothly plastered and decorated with wall paintings, parts of which, however, have since been repainted with highly glossy colours. The floor is made of well-trodden clay. Water infiltration at the foot of the south-eastern wall has resulted in the formation of mould, threatening the wall paintings.

There is a skylight in the centre of the ceiling which has evidently been renovated. Sometime after 2005, a second roof made of corrugated sheets was added on top of the original roof.



116 View from the north with the adjoining annex in front. HN 2010.



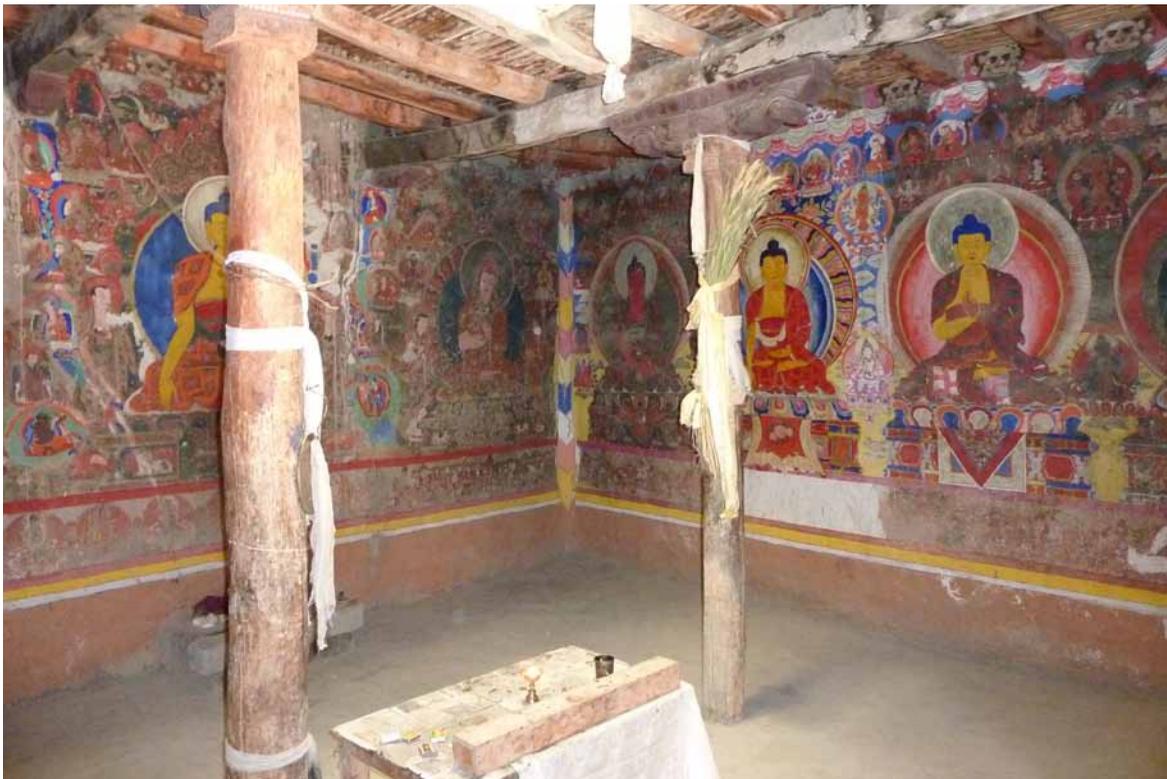
117 South-western facade of the upper temple. LN 2010.



118 Picture montage of the north-eastern wall. TU Graz 2012.



119 Picture montage of the south-eastern wall. TU Graz 2012.



120 Inside of the temples with the southern corner. HN 2010.



121 Picture montage of the south-western wall, TU Graz 2012.



122 Picture montage of the north-western wall, TU Graz 2012.



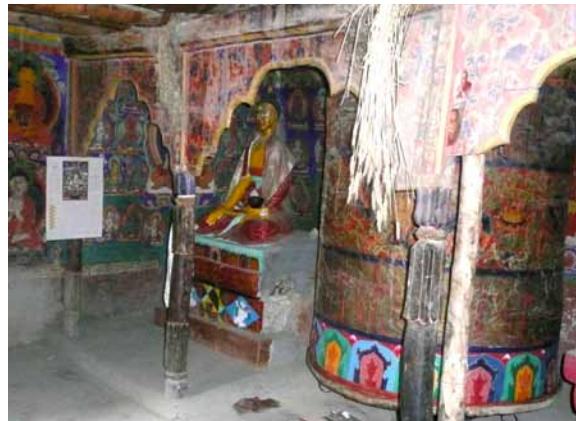
123 The central area of the upper temple in front of the south-western wall. CA 2011.



124 View of the ancient village with the chapel in the lower area and the upper temple on the tip of the cliff behind. HN 2010.



125 South-eastern view of the building. LN 2010.



126 Inside of the chapel. CA 2010.

THE VILLAGE CHAPEL

In addition to the monastery complex, a small one-tiered chapel in the centre of the old part of the village is included in our documentation.

Following the path to the castle of the No no above the monastery complex, you reach the so-called village chapel in the lower part of the ancient village. At the northern and western side of the building the area is walled up with a small terrace that forms a narrow circumambulation path that surrounds the chapel. The entrance to the chapel is situated at the south. The inside consists of one square room which is divided by two pillars and decorated with painted wooden panels. The entire wall surfaces are covered with paintings. In the centre of the rear part of the room stands a huge decorated prayer wheel flanked by two seated statues on their pedestals: to the left the sculpture of Sakyamuni, and to the right the sculpture of Avalokitesvara.



127 Southern wall inside the village chapel. Picture montage.
TU Graz 2012.



128 Western wall inside the village chapel. Picture montage.
TU Graz 2012.



129 Northern wall inside the village chapel. Picture montage.
TU Graz 2012.



130 Eastern wall inside the village chapel. Picture montage.
TU Graz 2012.





2

PLAN DOCUMENTATION

SITE PLAN OF THE AREA



2 PLAN DOCUMENTATION

The plan documentation shows the two-dimensional plans of the building. They provide the basis for the restoration measures and further work. The plans are orthogonal and two-dimensional. The horizontal sections were arranged in such a way to clearly show the different floor levels and their respective horizontal timber work. The two-dimensional plans show the state of the building in 2010. The plan documentation is listed in the order of documentation as follows:

TABLE OF PLANS

SITE PLAN

- MAIN BUILDING • GROUND STOREY
- FIRST STOREY
- SECOND STOREY
- THIRD STOREY
- ROOF STOREY
- LONGITUDINAL AND CROSS SECTIONS

TOWER

- GROUND STOREY
- FIRST STOREY
- SECOND STOREY
- SECTION OF THE MAIN BUILDING AND THE TOWER

UPPER TEMPLE

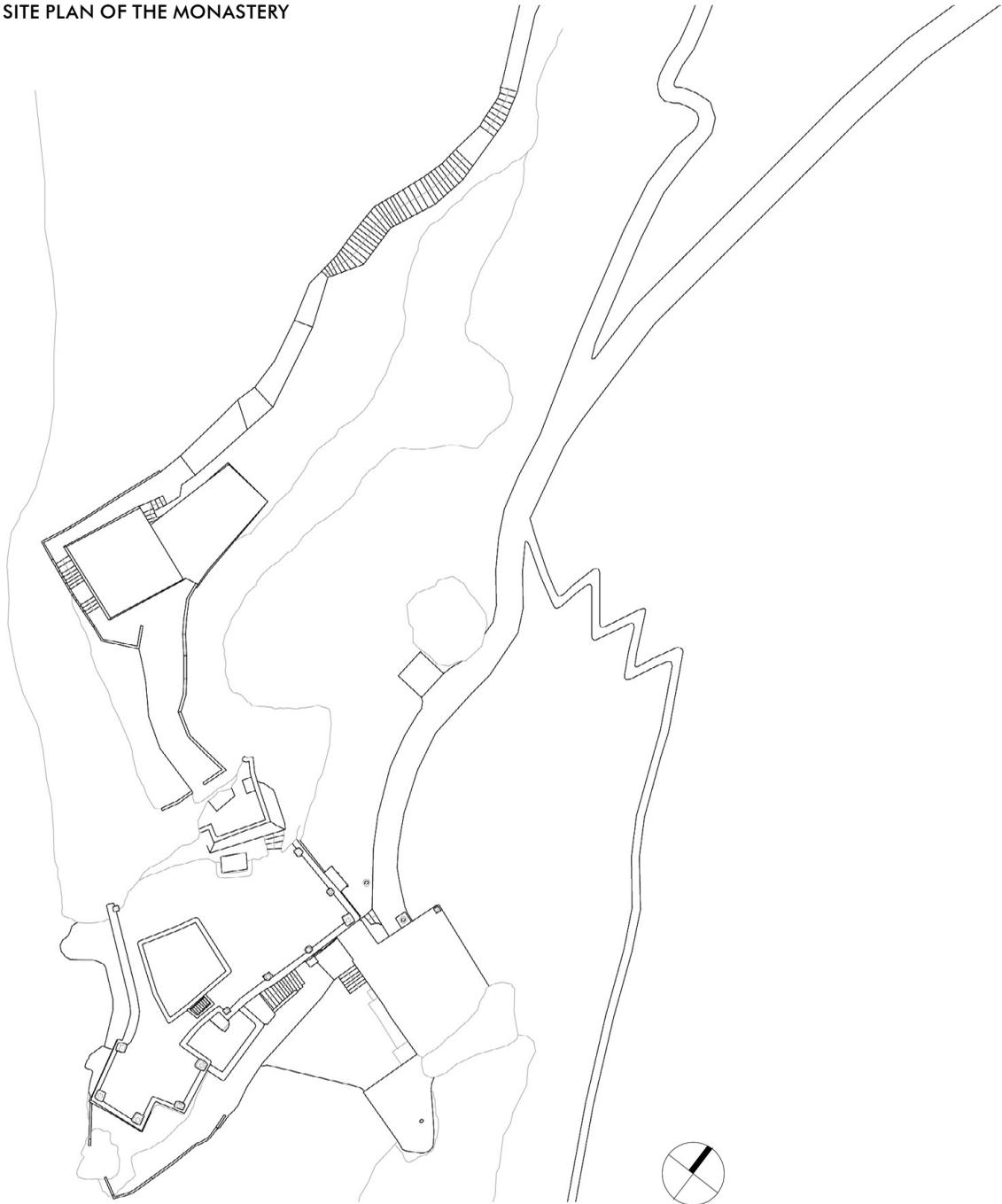
- GROUND STOREY
- CROSS SECTION
- NORTH-EAST ELEVATIONS
- SOUTH-WEST ELEVATIONS
- SOUTH-EAST ELEVATIONS
- NORTH-WEST ELEVATIONS

VILLAGE CHAPEL • SECTIONS AND ELEVATIONS

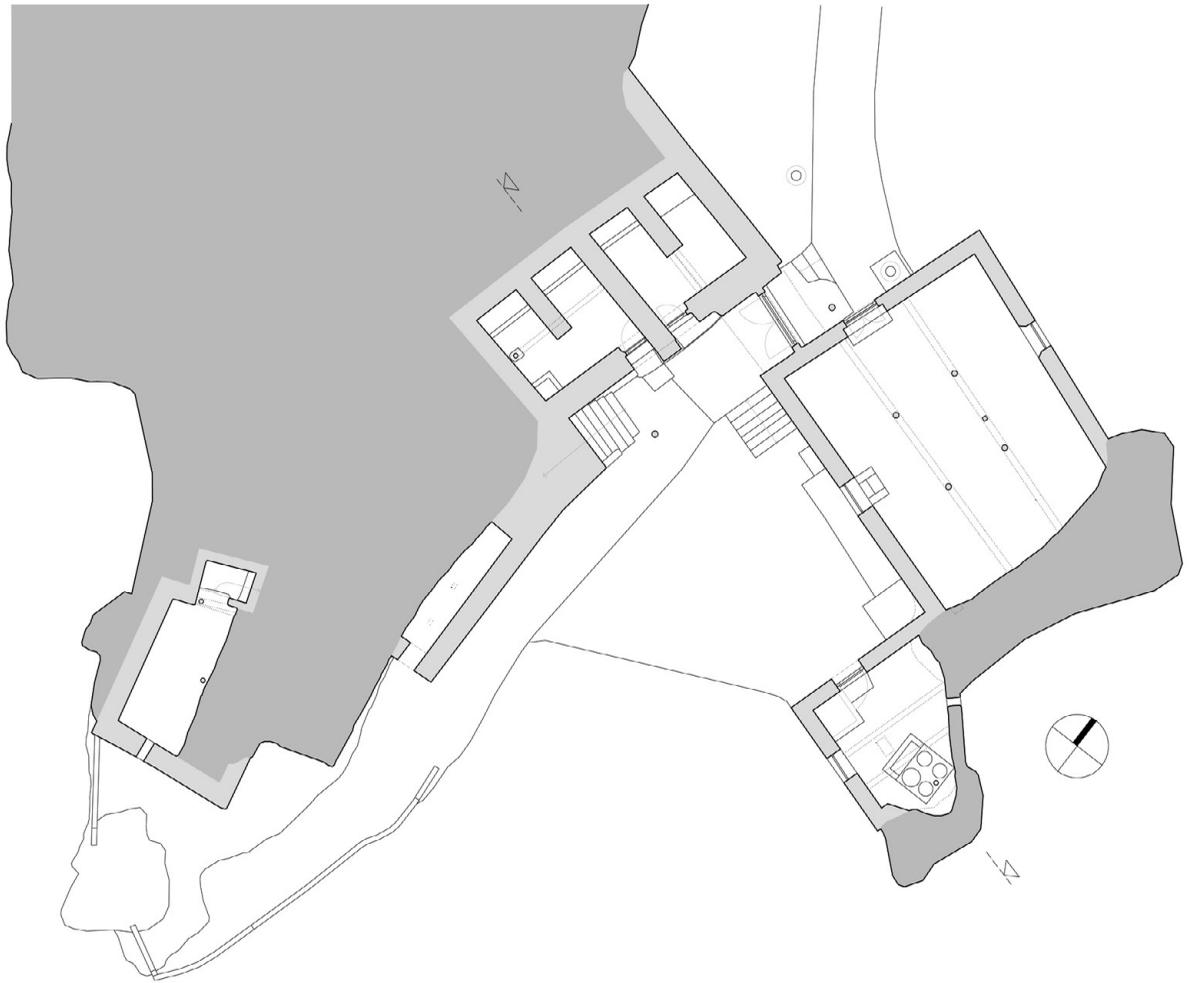
THE MONASTERY COMPLEX

- GENERAL SECTION
- NORTH-EAST ELEVATIONS
- SOUTH-EAST ELEVATIONS
- SOUTH-WEST ELEVATIONS

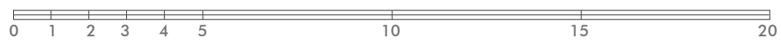
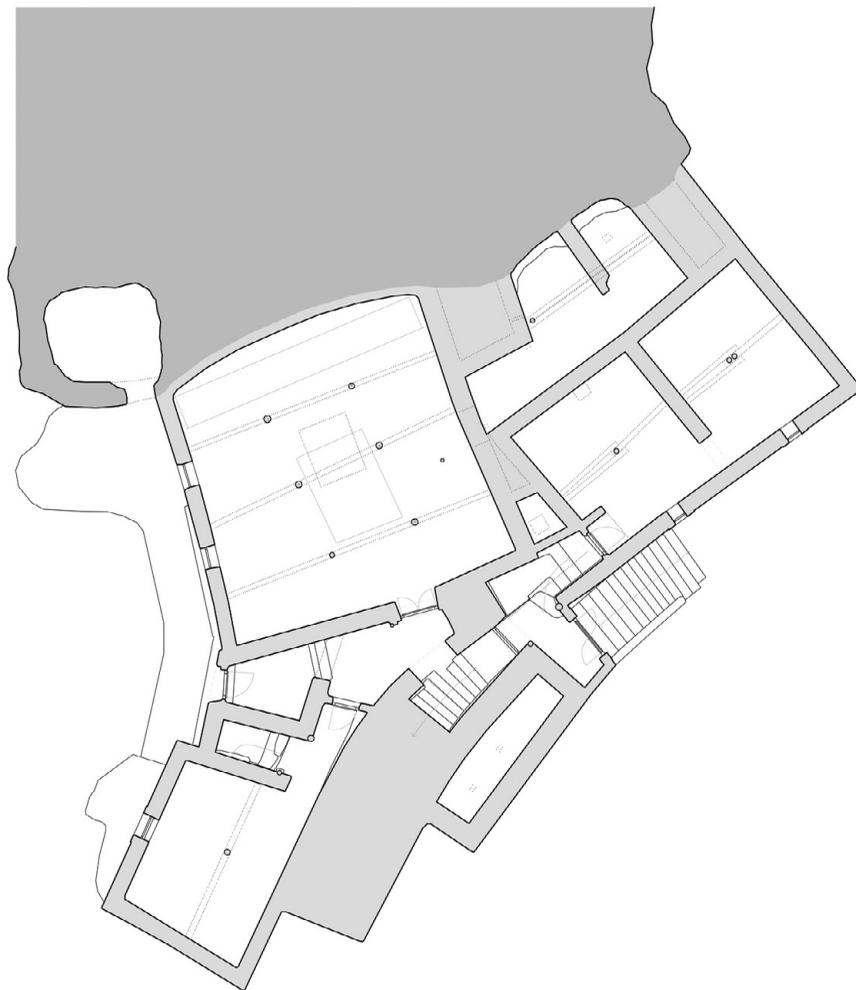
SITE PLAN OF THE MONASTERY



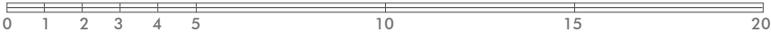
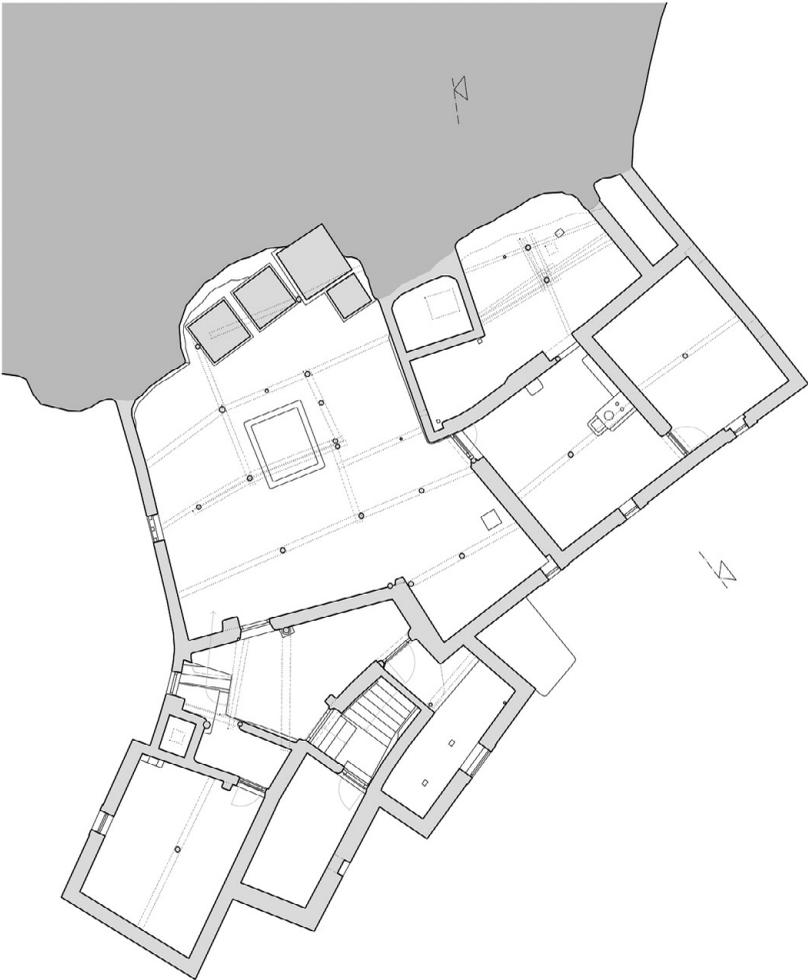
MAIN BUILDING - GROUND STOREY



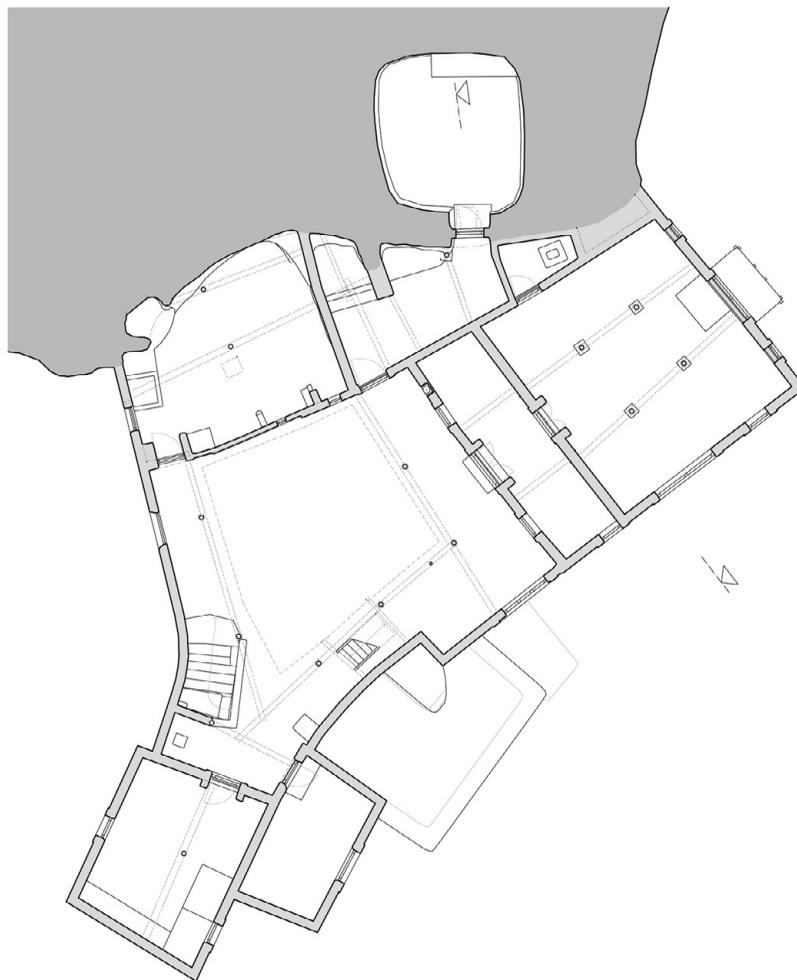
MAIN BUILDING - FIRST STOREY



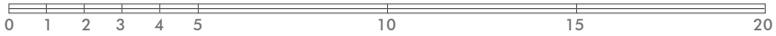
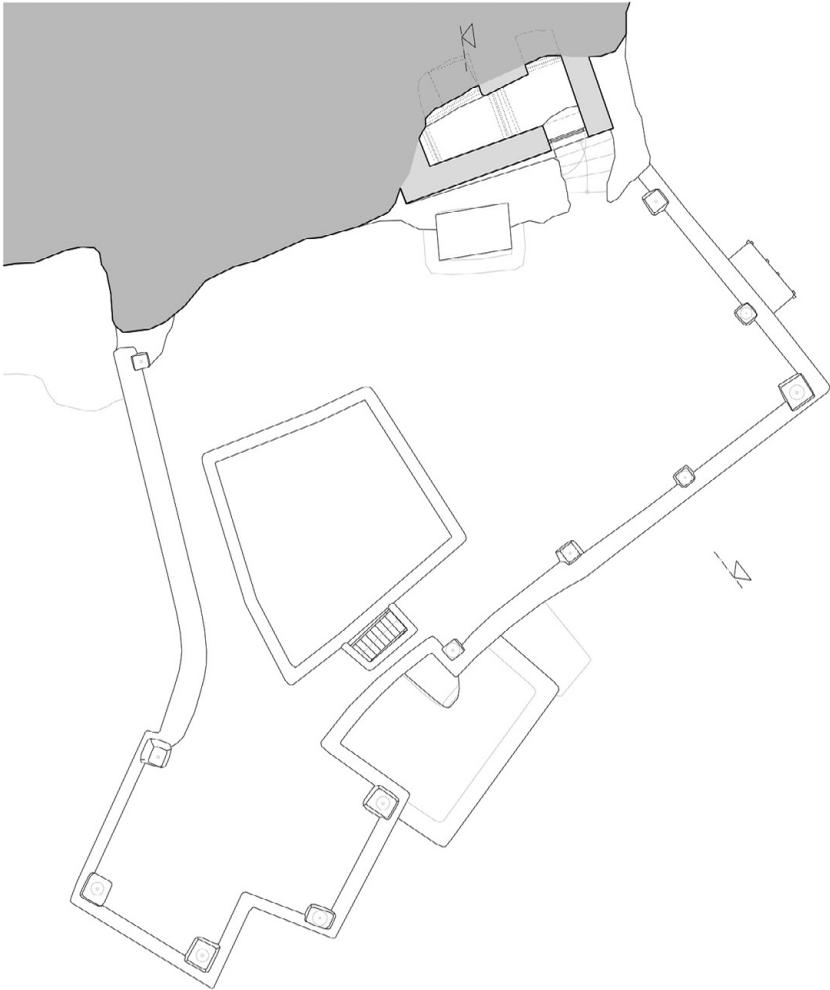
MAIN BUILDING - SECOND STOREY



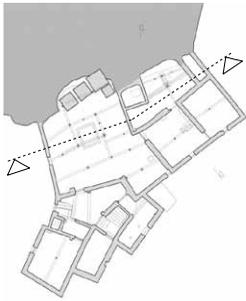
MAIN BUILDING - THIRD STOREY



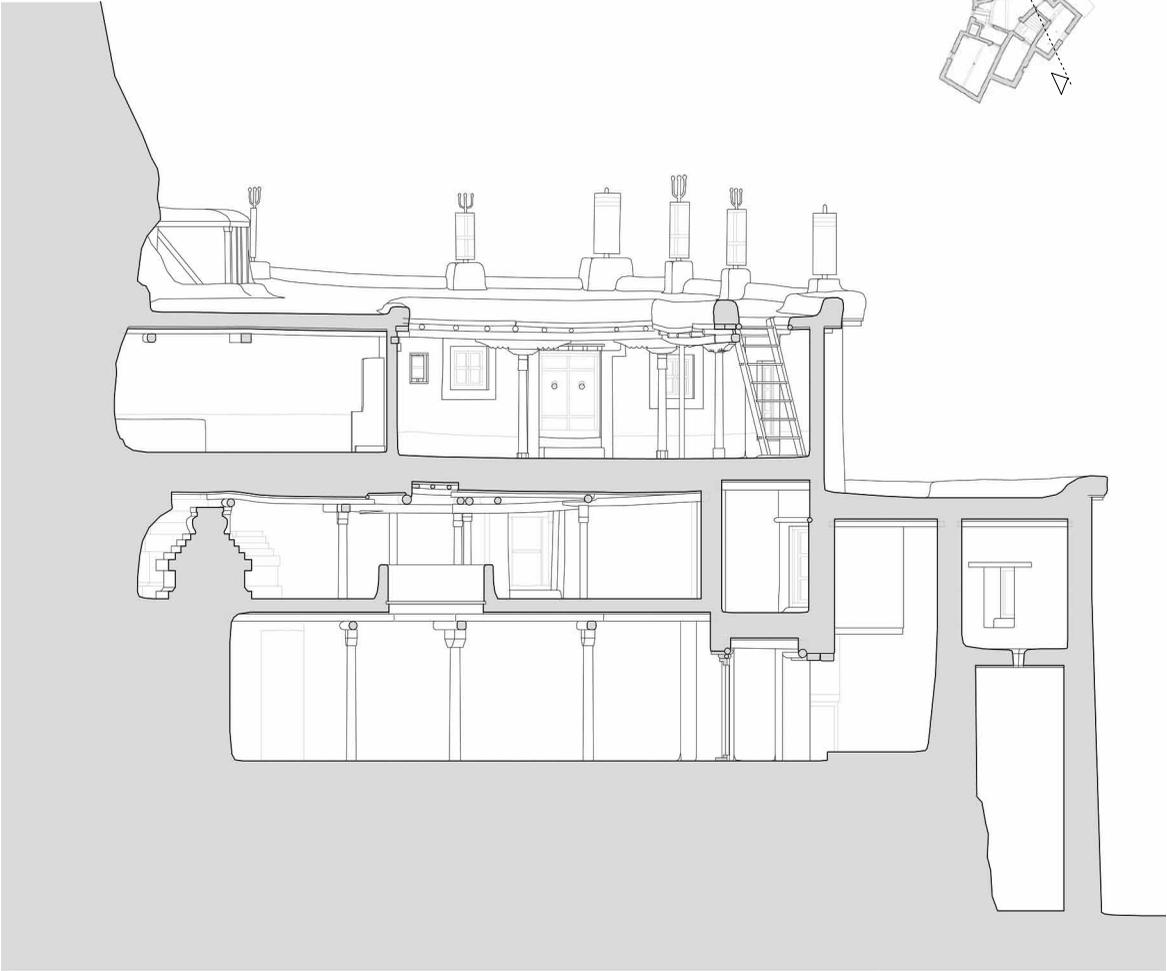
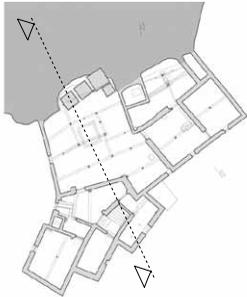
MAIN BUILDING - ROOF STOREY



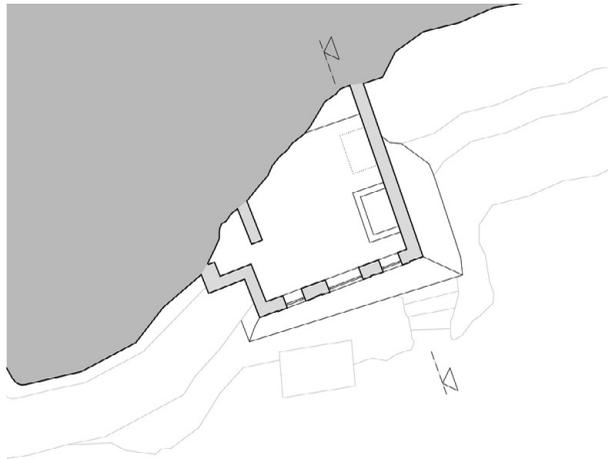
LONGITUDINAL SECTION OF THE MAIN BUILDING



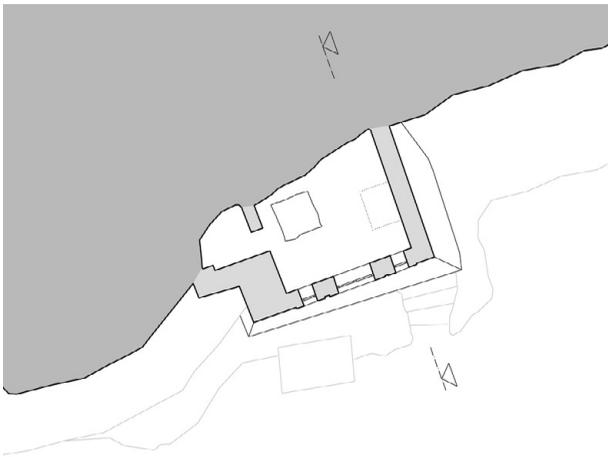
CROSS SECTION OF THE MAIN BUILDING



TOWER



SECOND STOREY



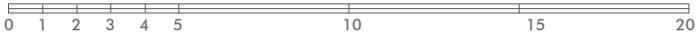
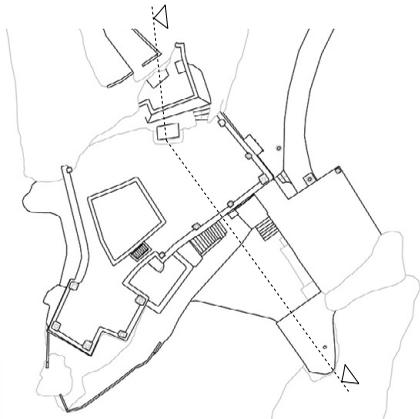
FIRST STOREY



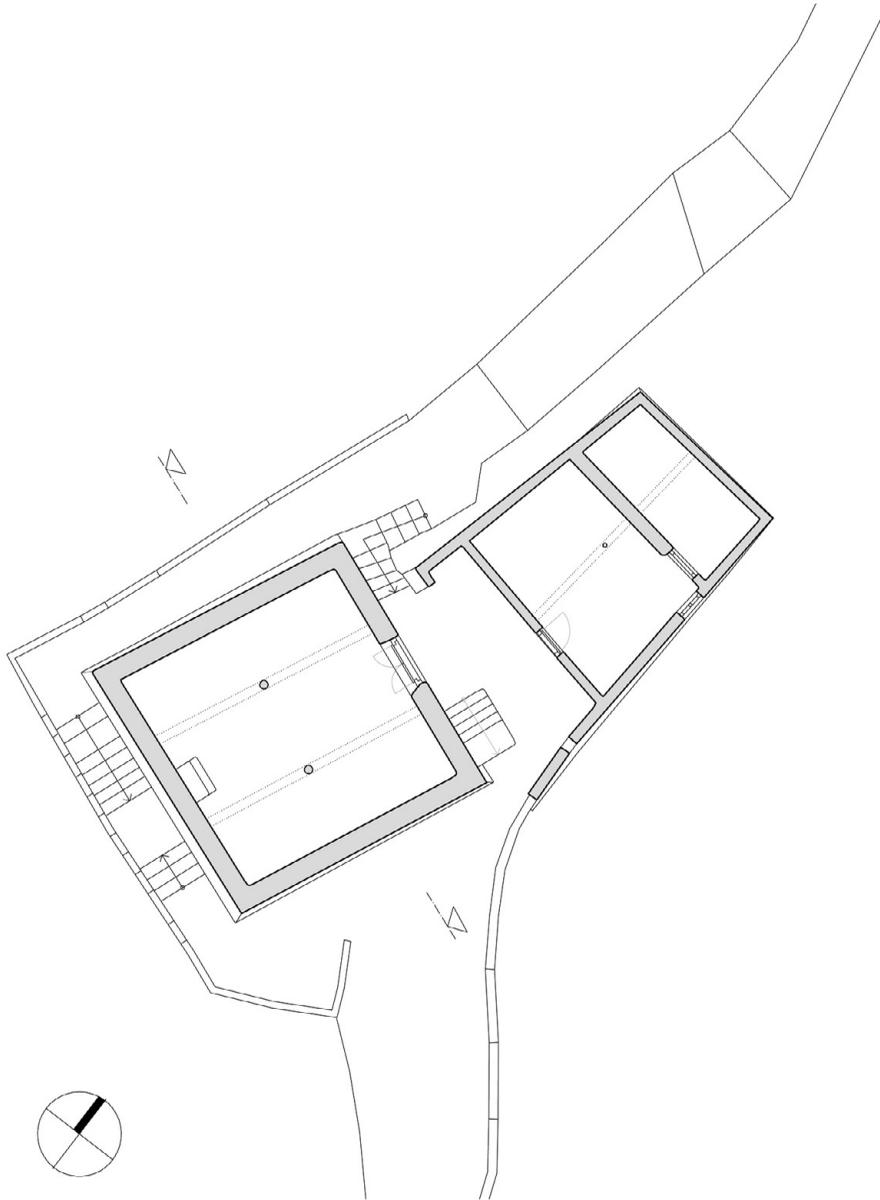
GROUND STOREY



SECTION OF THE MAIN BUILDING AND THE TOWER

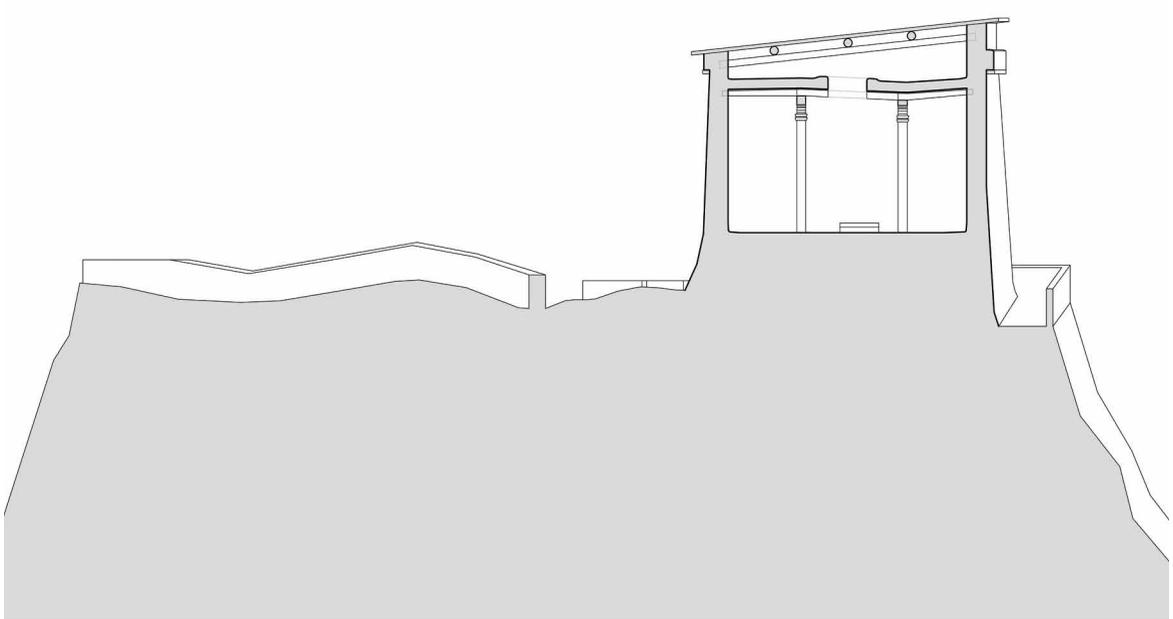


UPPER TEMPLE - GROUND STOREY

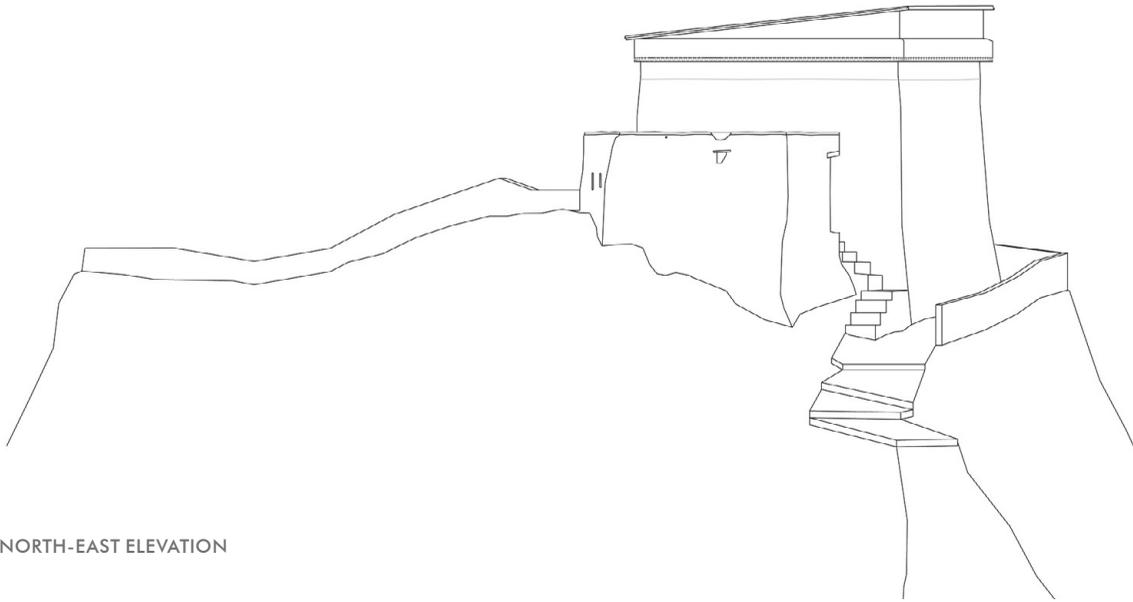


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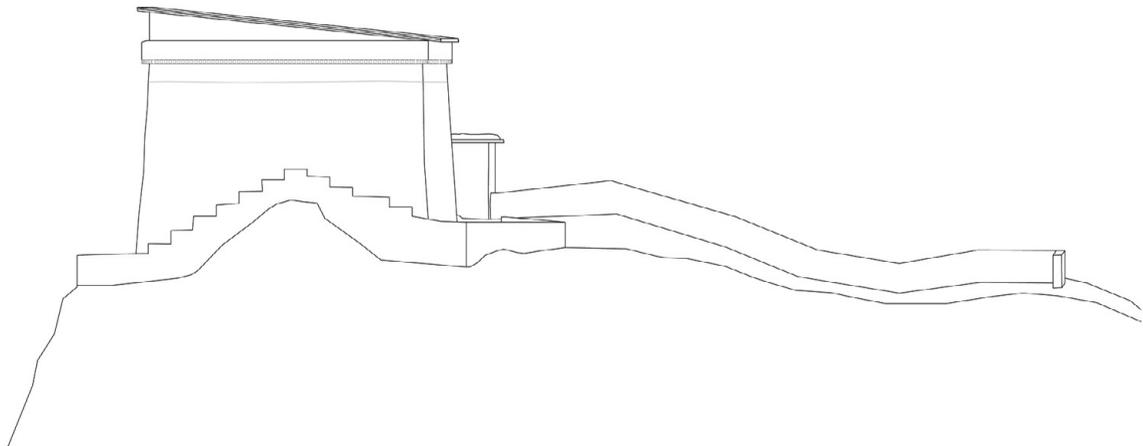
UPPER TEMPLE - CROSS SECTION



UPPER TEMPLE - ELEVATIONS



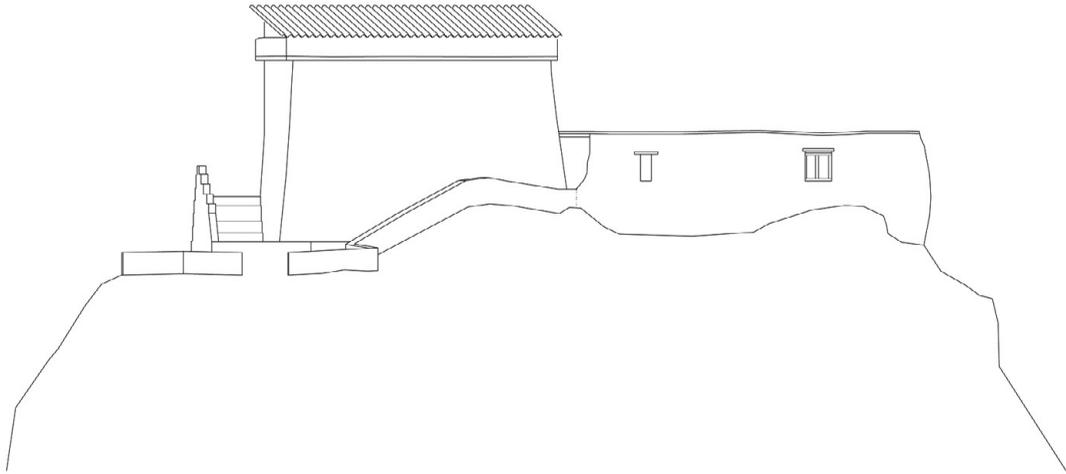
NORTH-EAST ELEVATION



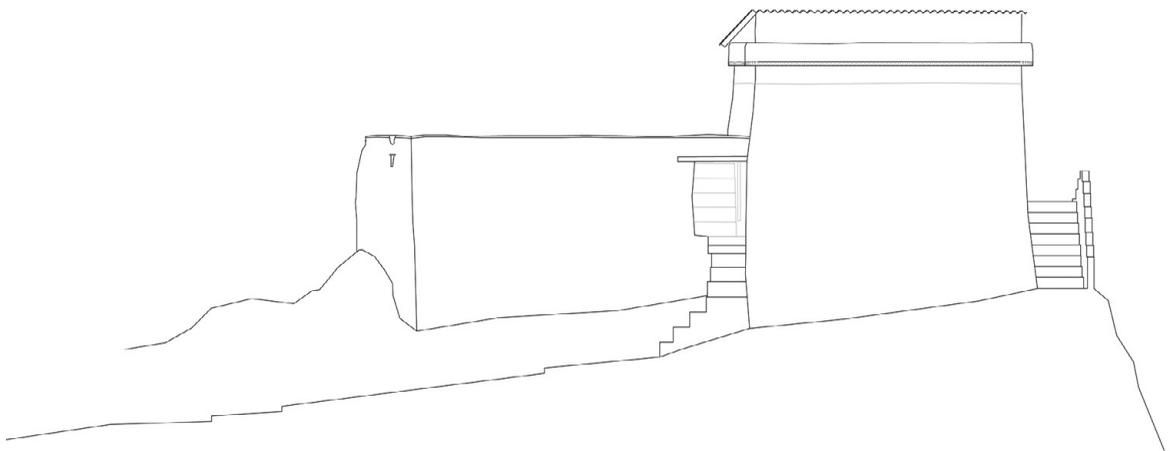
SOUTH-WEST ELEVATION



UPPER TEMPLE - ELEVATIONS



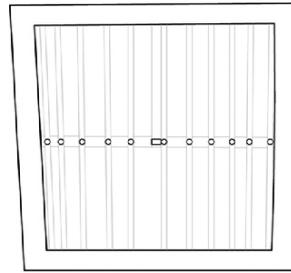
SOUTH-EAST ELEVATION



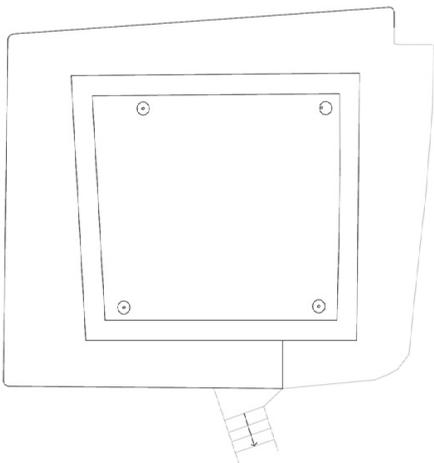
NORTH-WEST ELEVATION



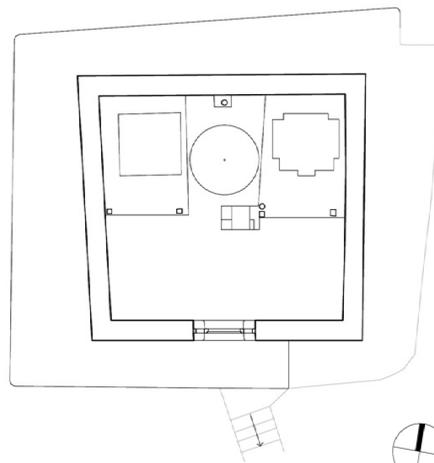
VILLAGE CHAPEL - SECTIONS AND ELEVATIONS



CEILING PLAN



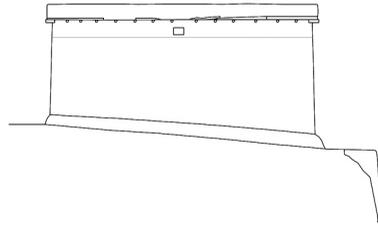
SITE AND ROOF



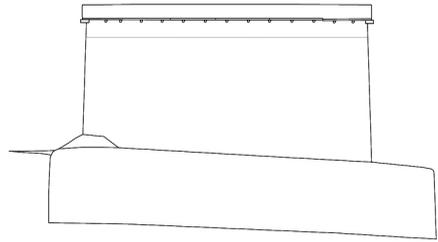
GROUND STOREY



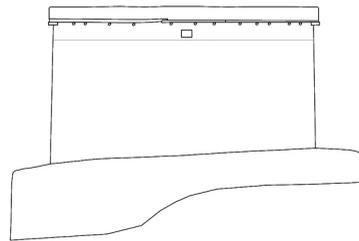
VILLAGE CHAPEL



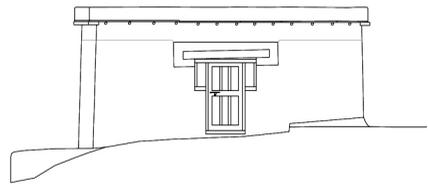
EAST ELEVATION



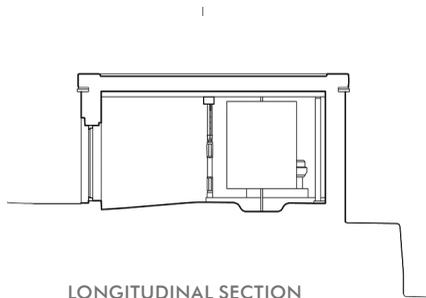
NORTH ELEVATION



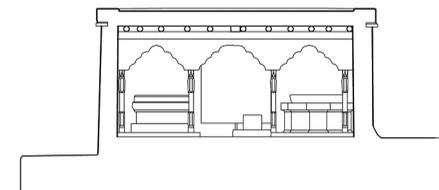
WEST ELEVATION



SOUTH ELEVATION



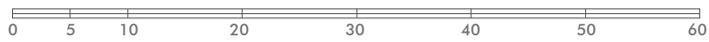
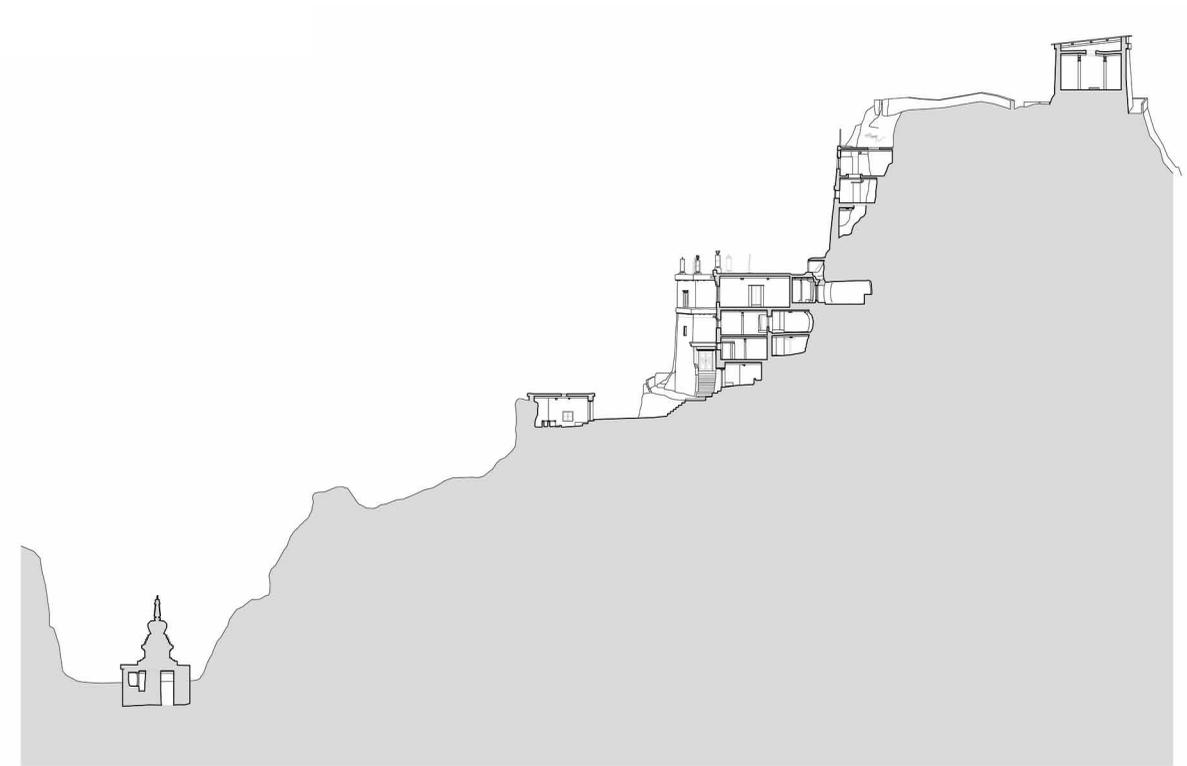
LONGITUDINAL SECTION



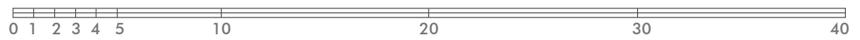
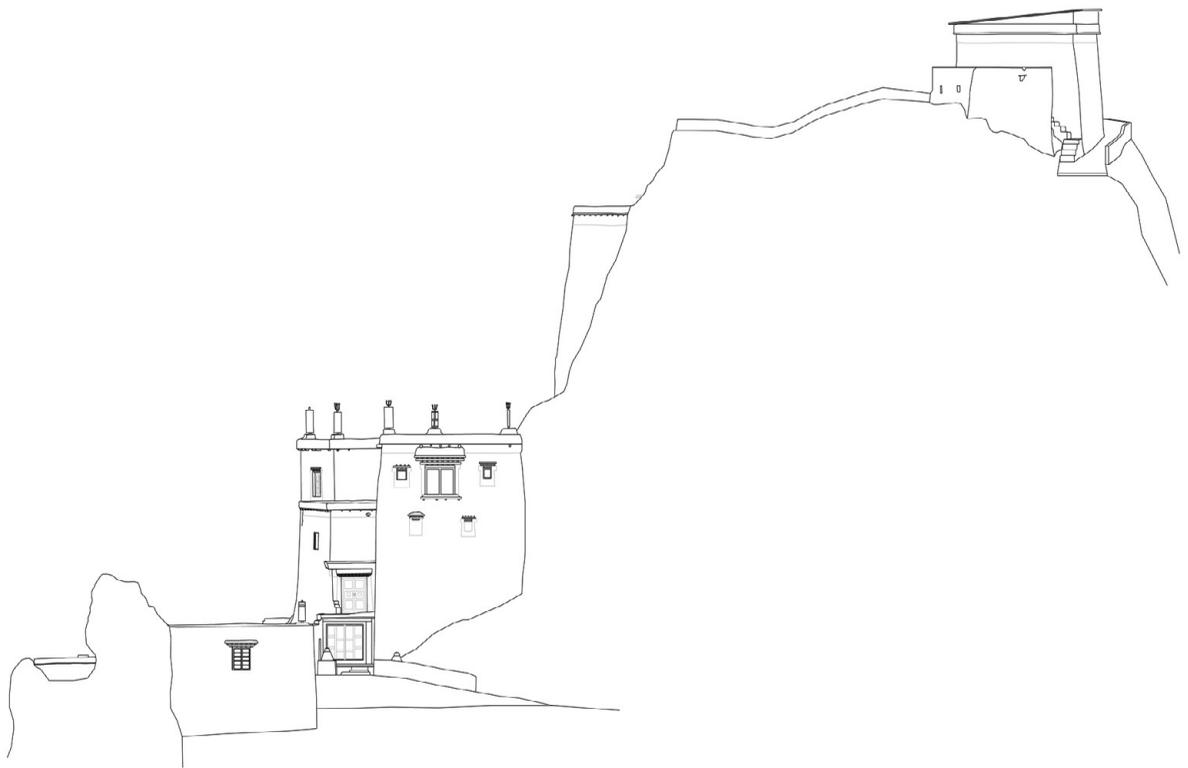
CROSS SECTION



GENERAL SECTION



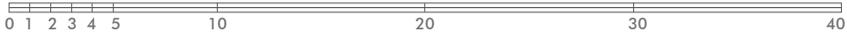
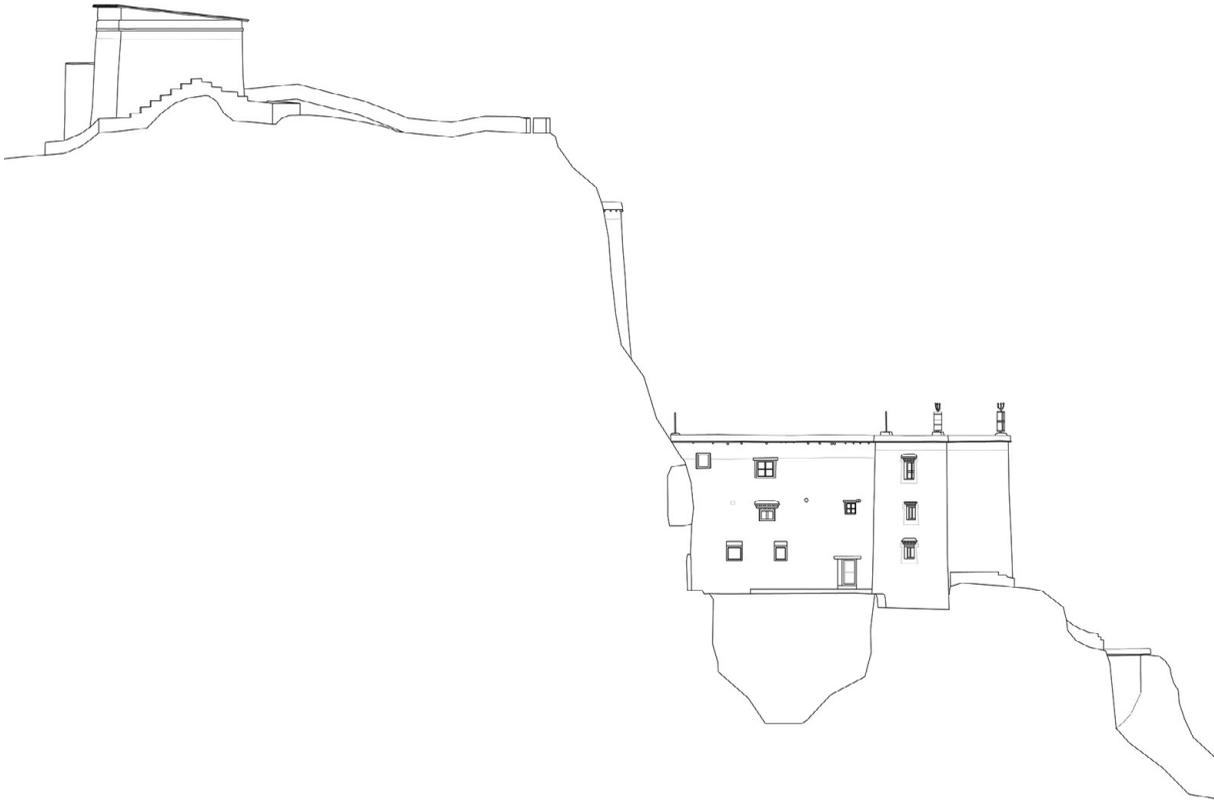
NORTH-EAST ELEVATION

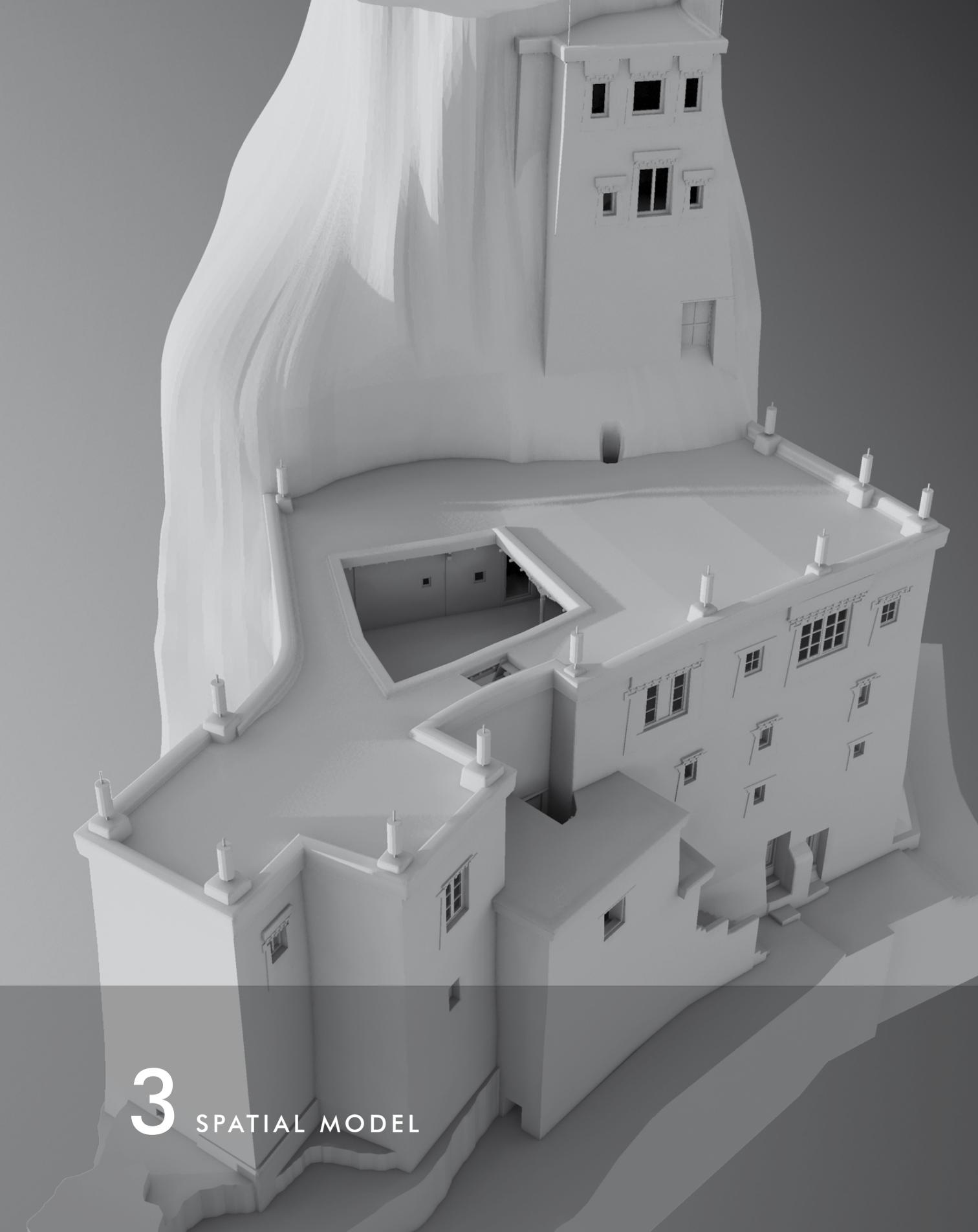


SOUTH-EAST ELEVATION

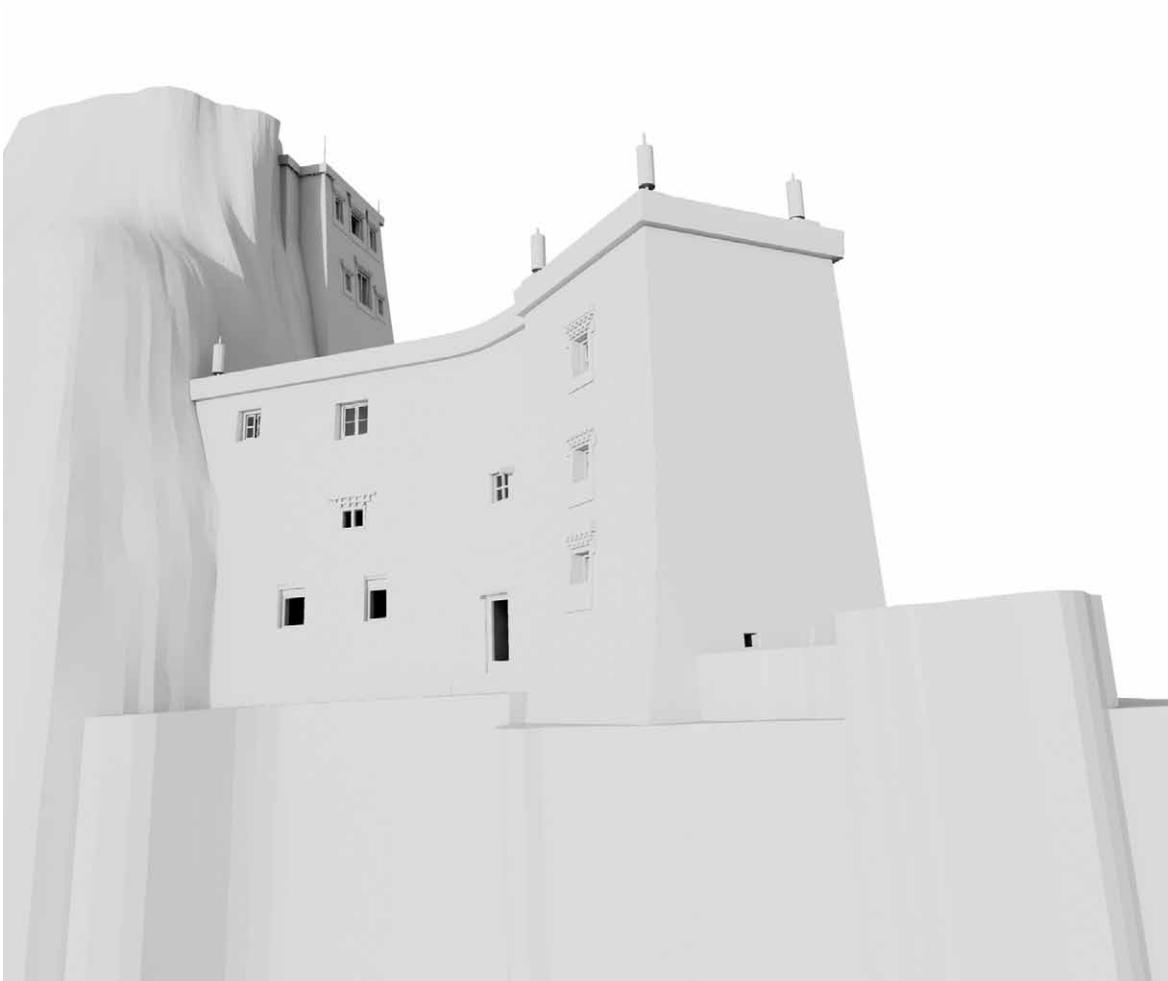


SOUTH-WEST ELEVATION





3 SPATIAL MODEL



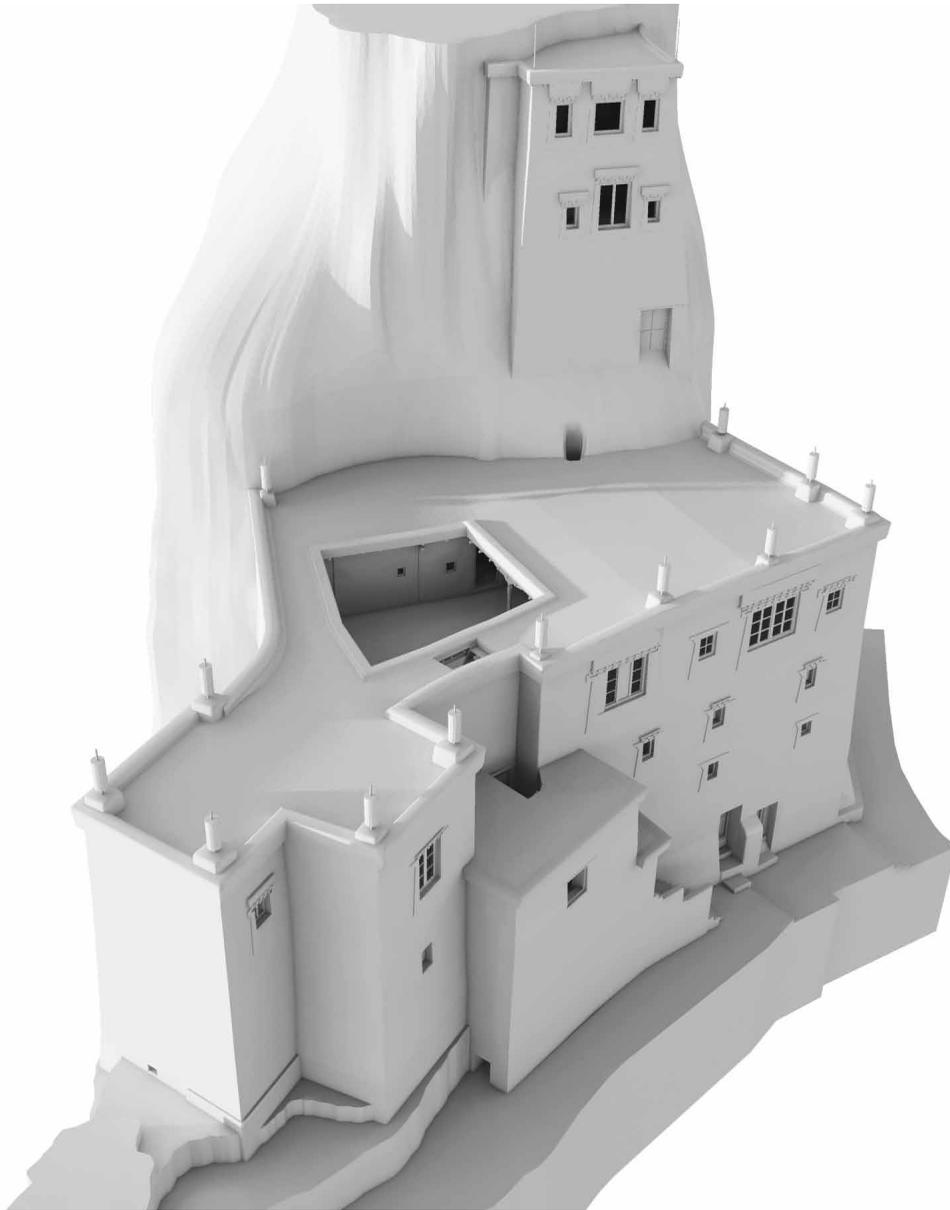
131 View from south-west. TU Graz 2013.

3 SPATIAL MODEL

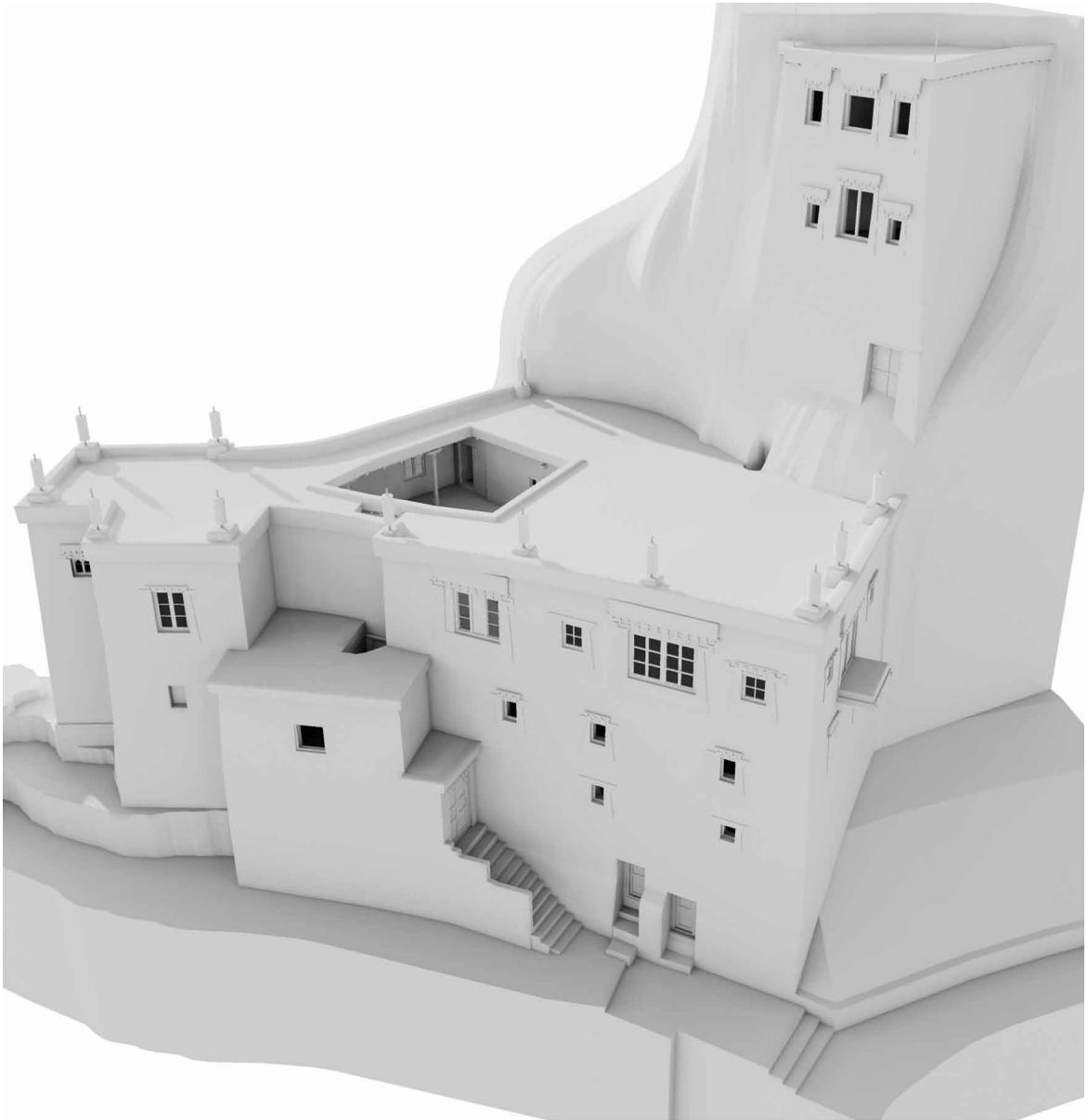
Dieter Bauer

VISUALISATION OF THE MONASTERY'S MAIN BUILDING

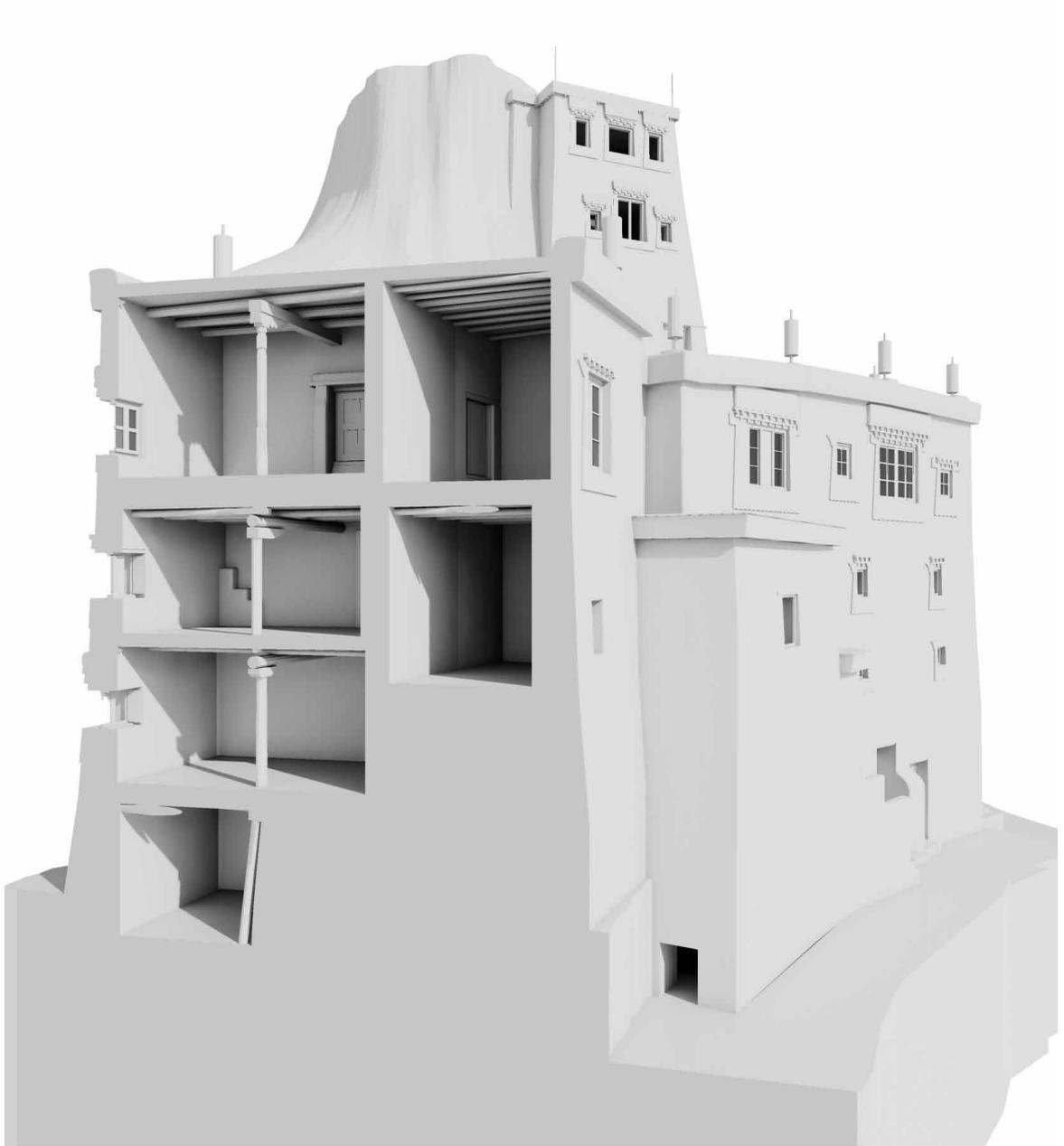
In the first part of the building documentation, the plan documentation shows two-dimensional plans of the building. These plans provide the basis for the creation of three-dimensional spatial models, and the further documentation of the interior. The three-dimensional models demonstrate the high complexity of the main building which was subject to several different construction phases over the centuries.



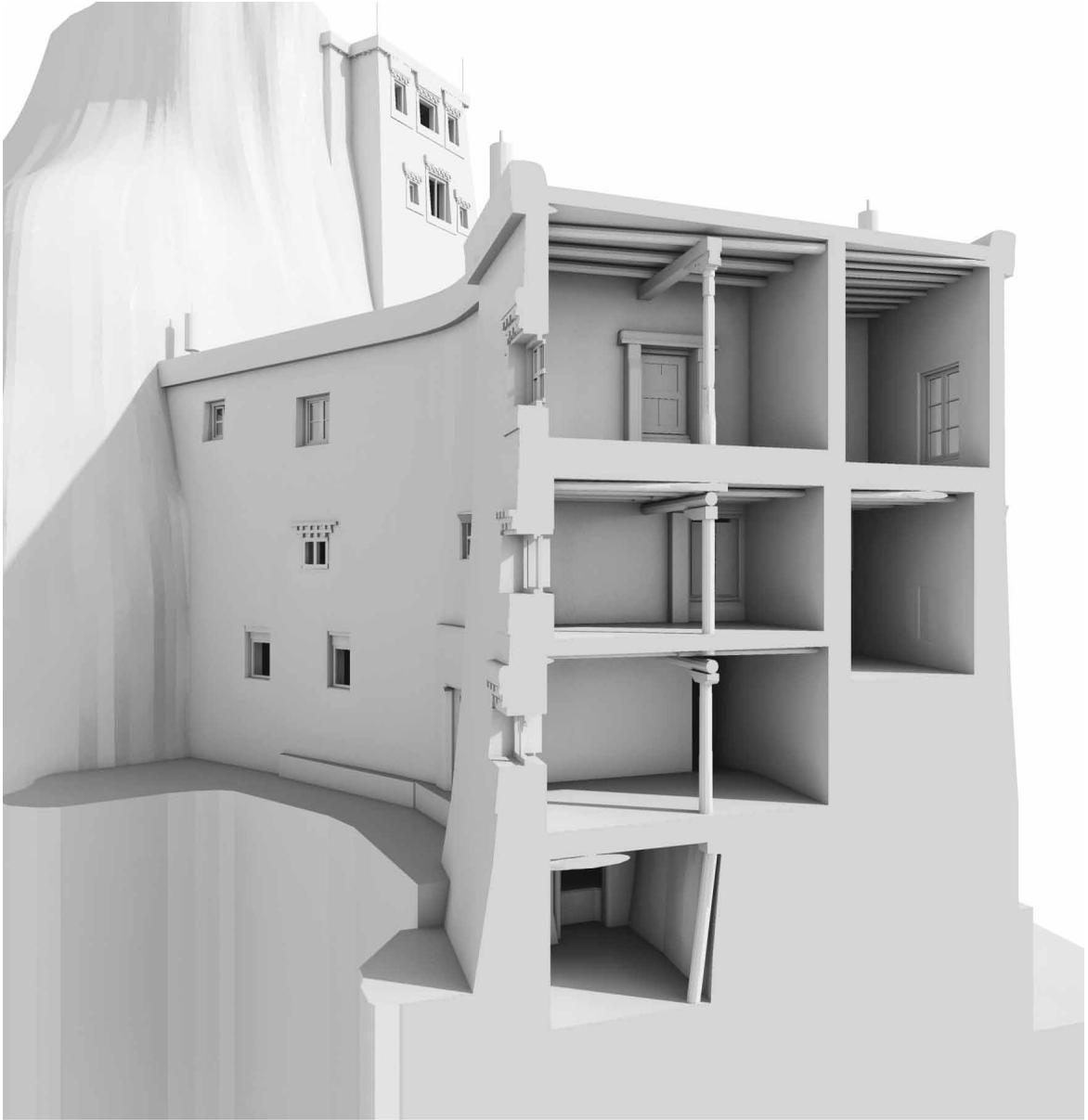
132 Bird's eye view from south-east. TU Graz 2013.



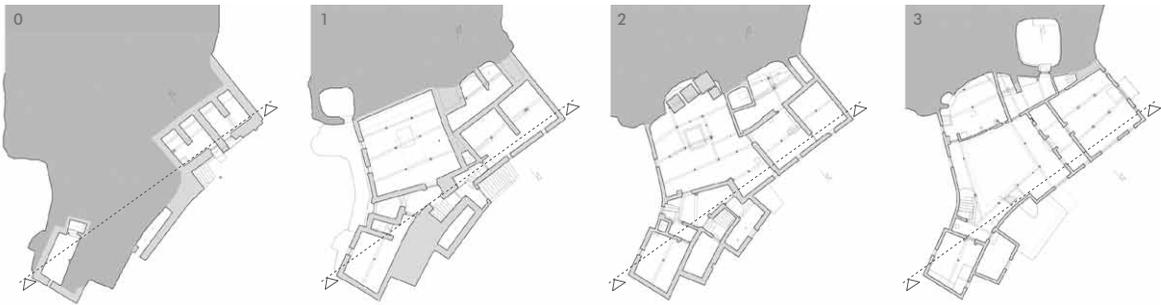
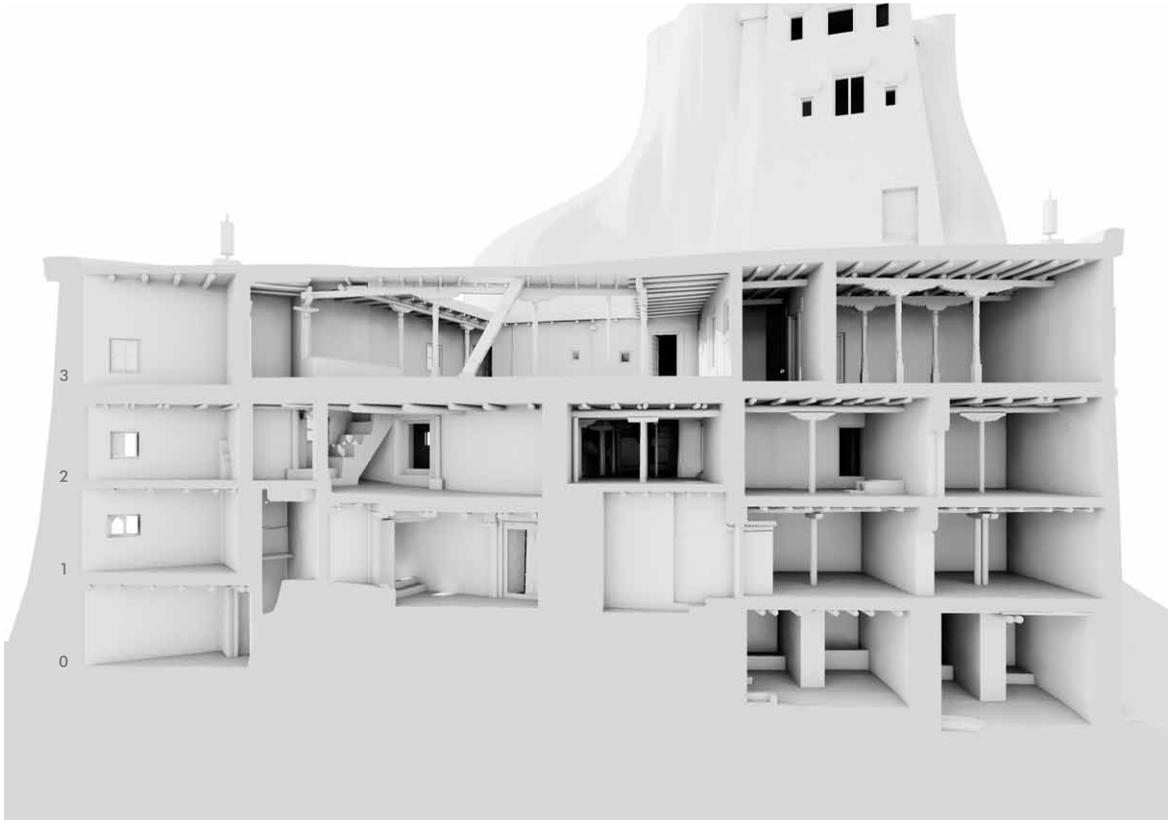
133 Bird's eye from north-east. TU Graz 2013.



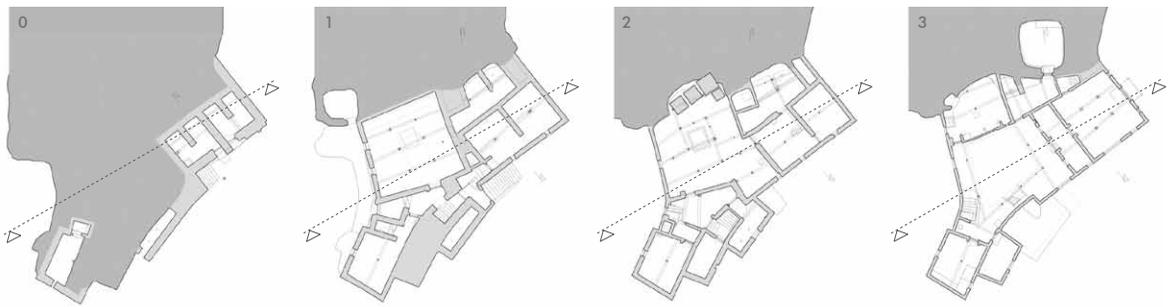
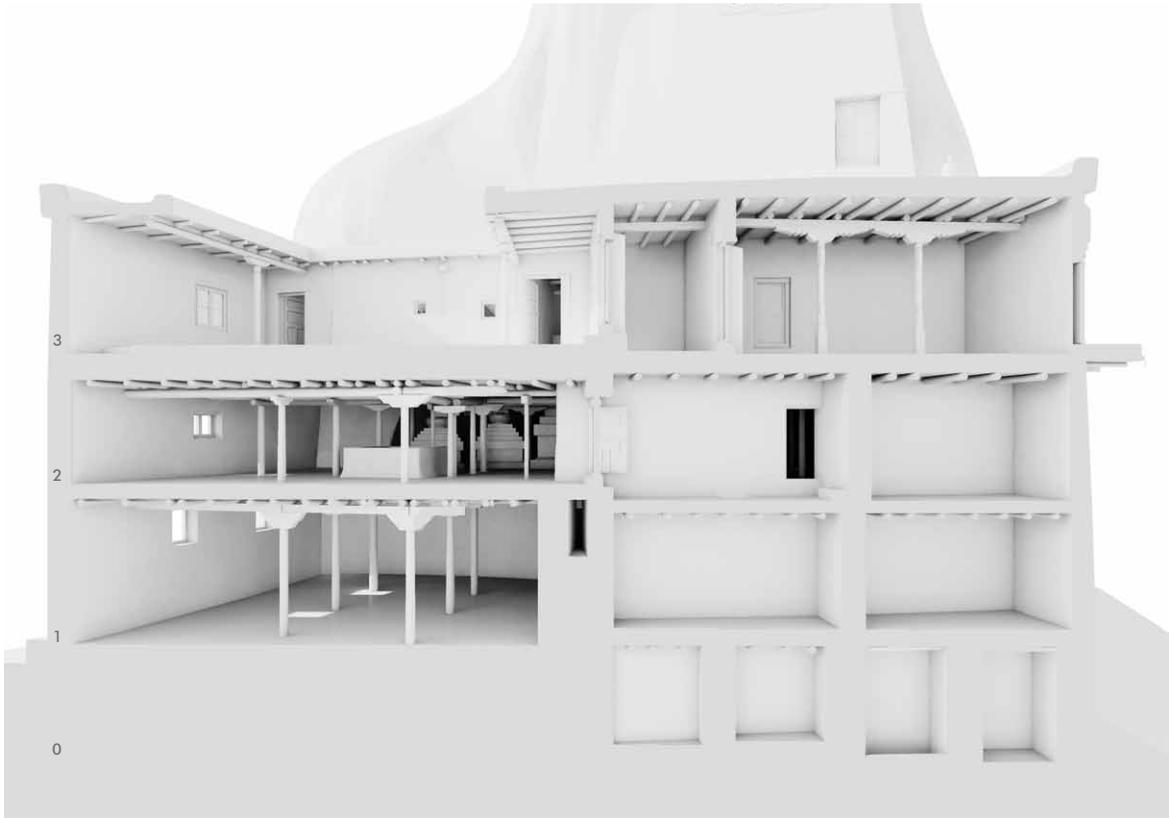
134 Cross section A. TU Graz 2013.



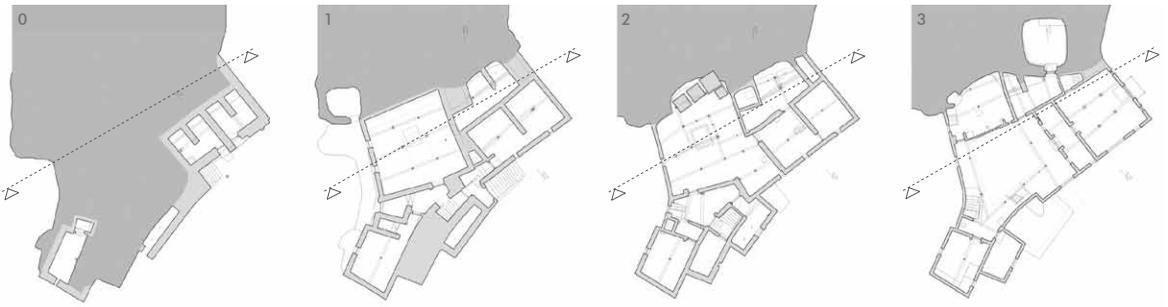
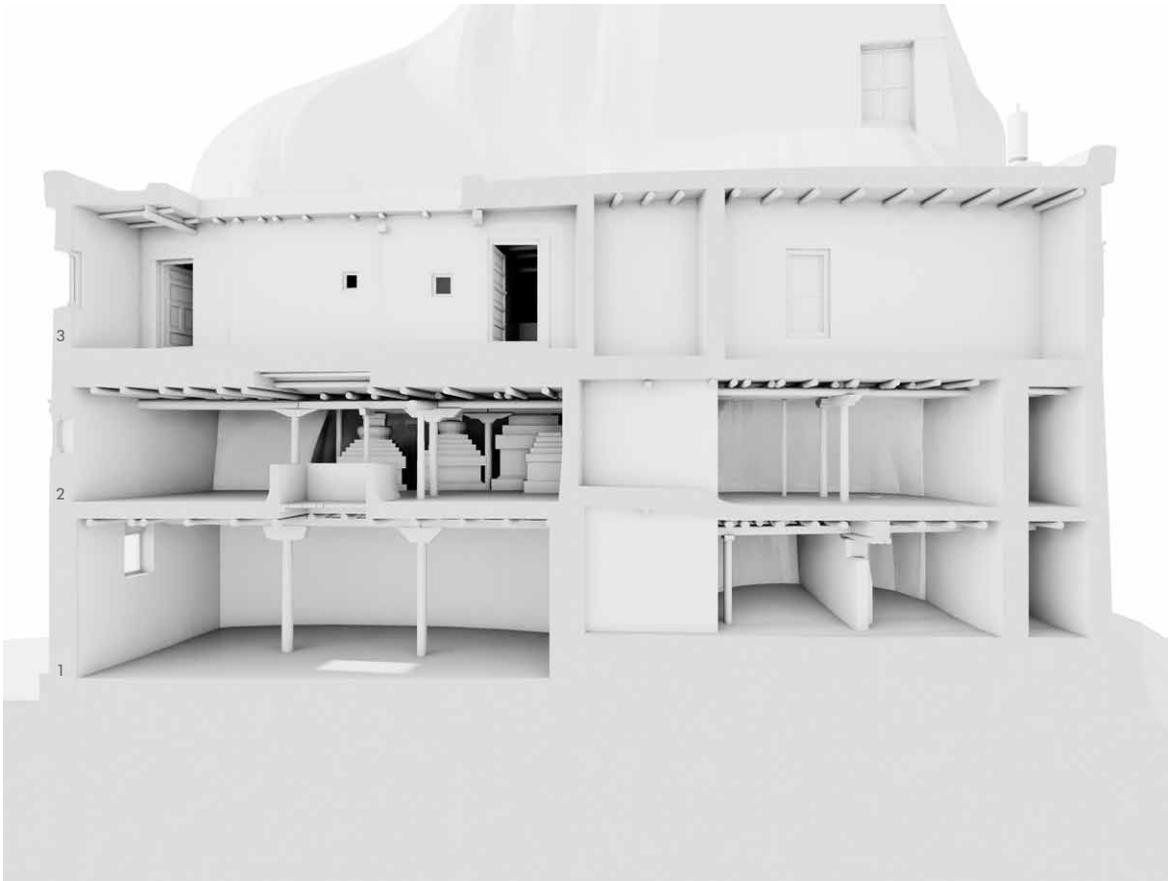
135 Cross section A. TU Graz 2013.



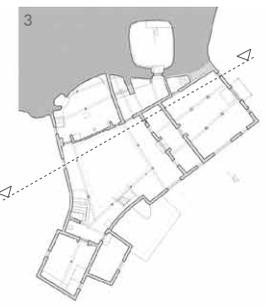
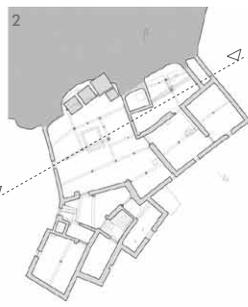
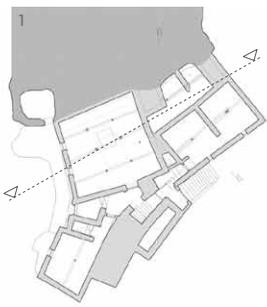
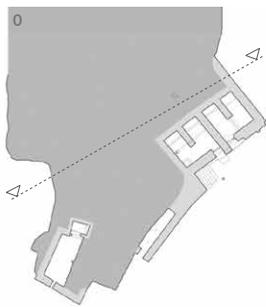
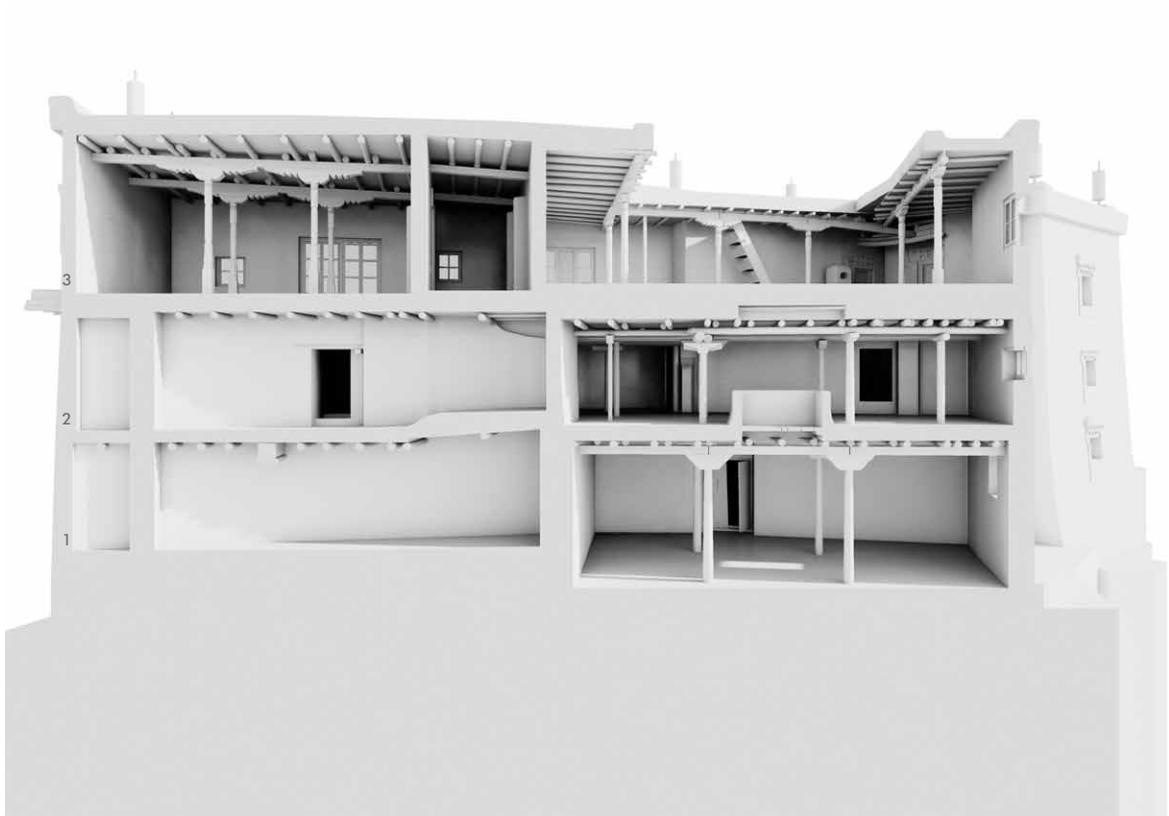
136 Longitudinal section A. TU Graz 2013.



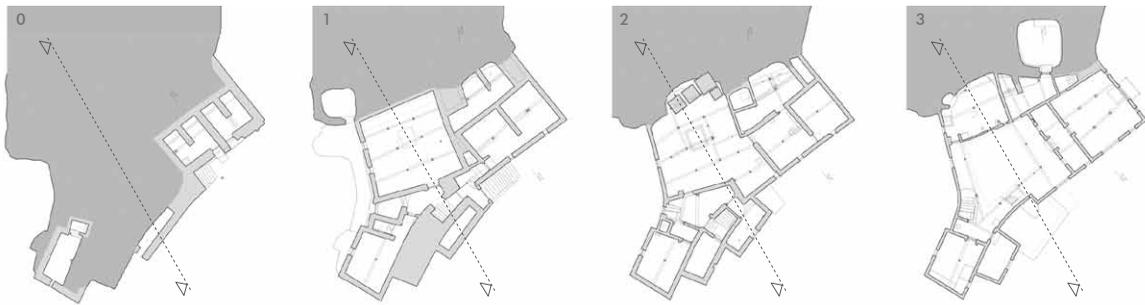
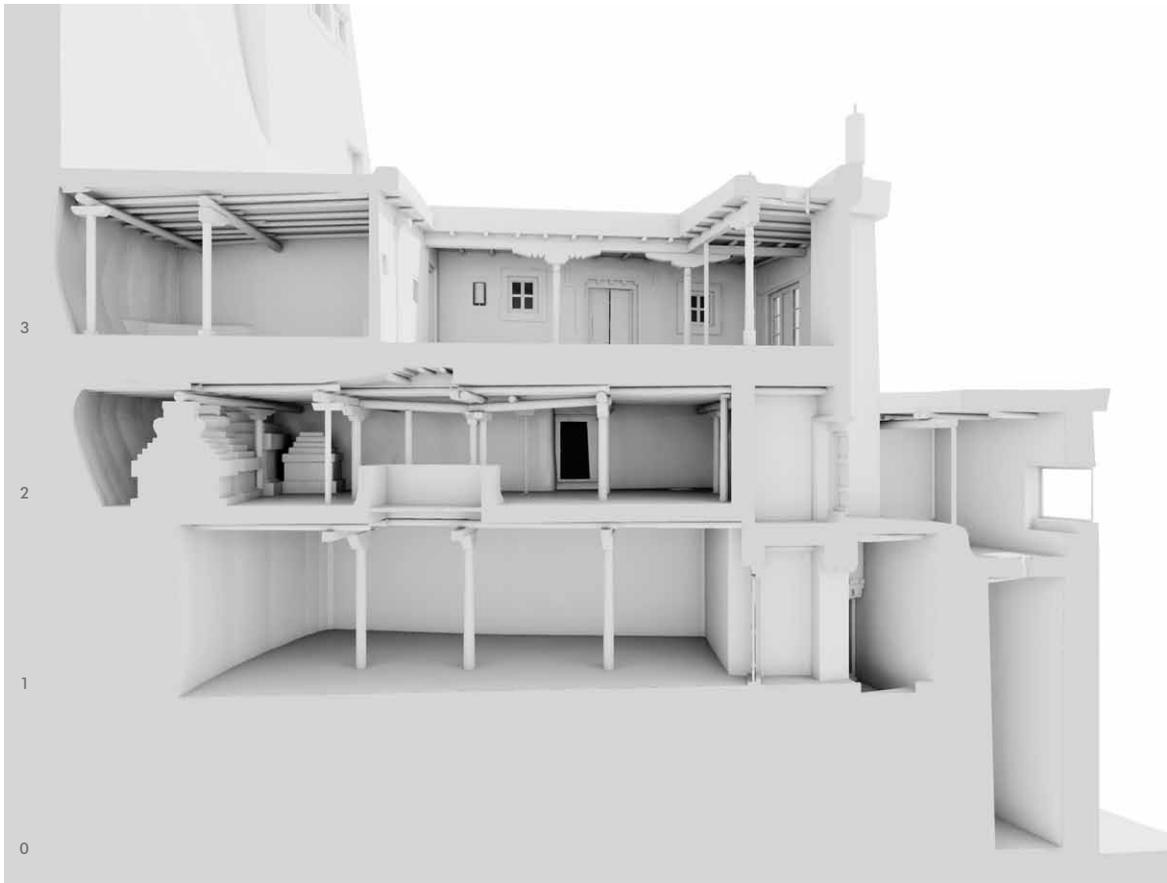
137 Longitudinal section B. TU Graz 2013.



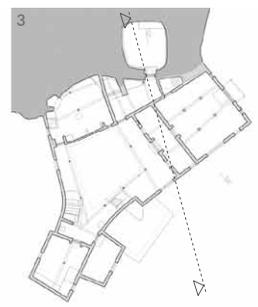
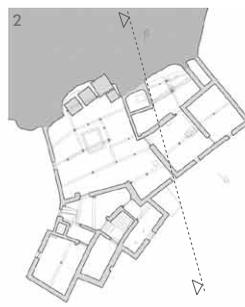
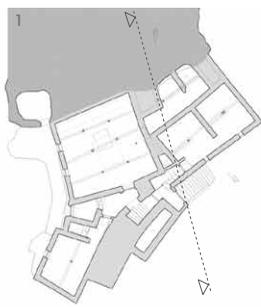
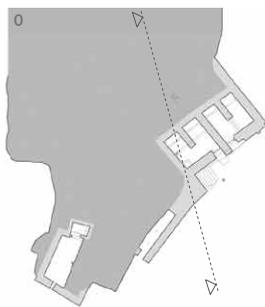
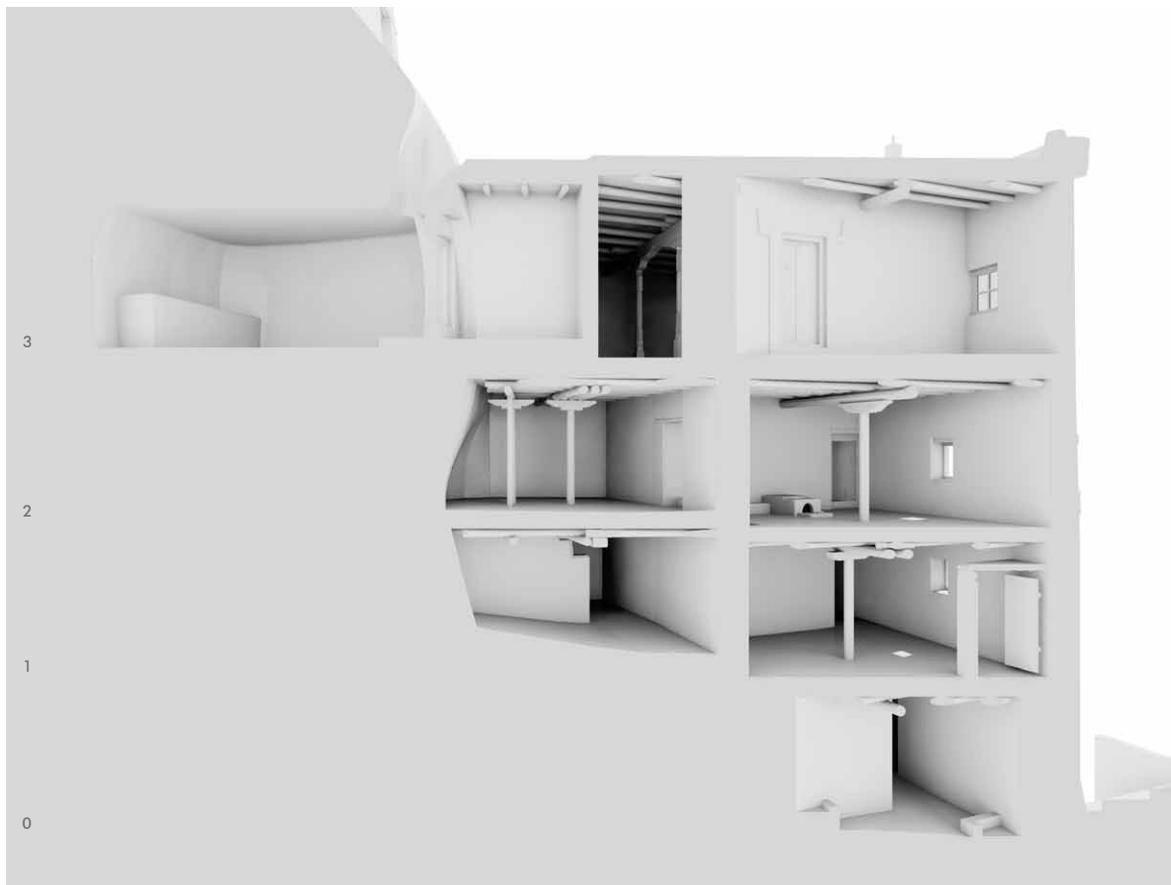
138 Longitudinal section C. TU Graz 2013.



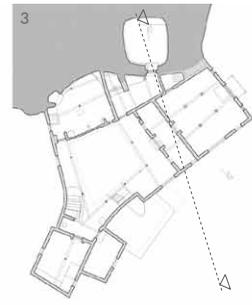
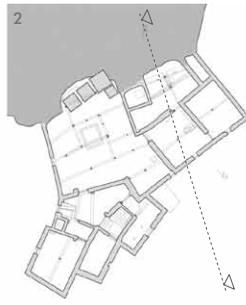
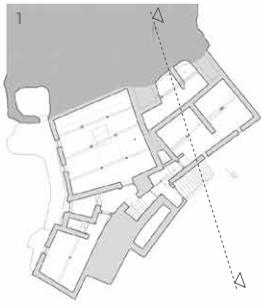
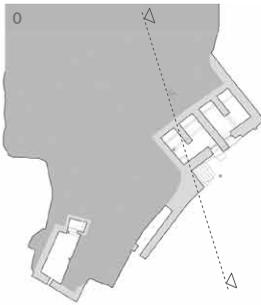
139 Longitudinal section D. TU Graz 2013.



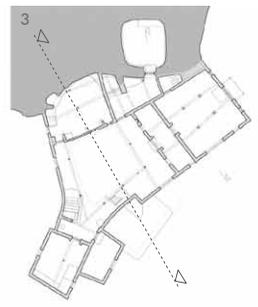
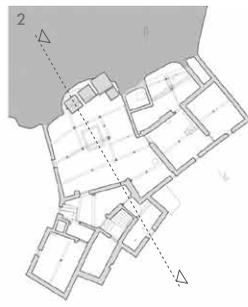
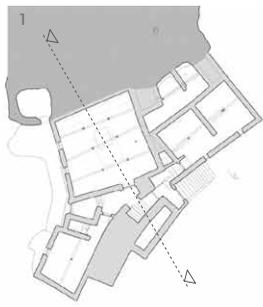
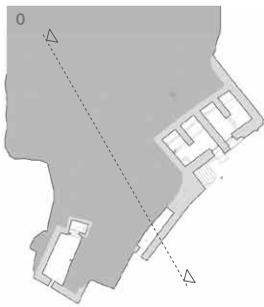
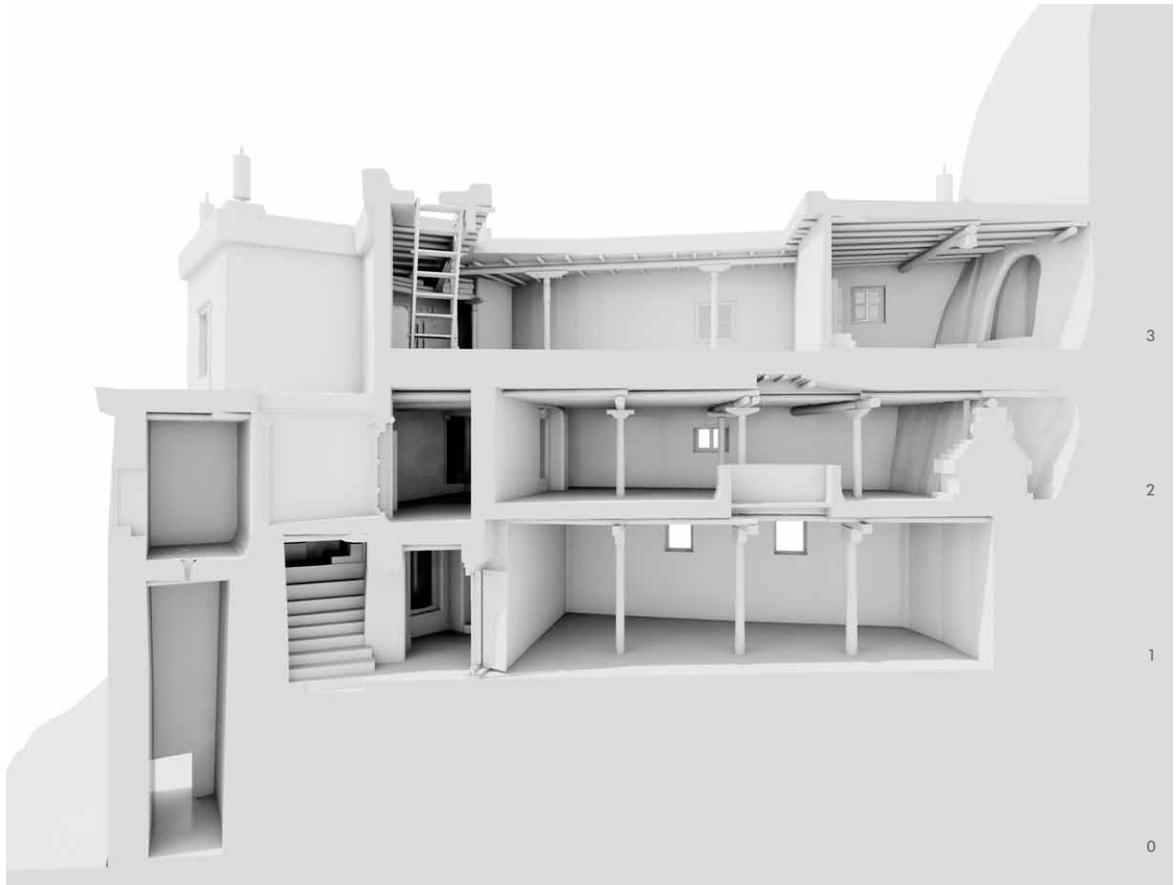
140 Cross section B. TU Graz 2013.



141 Cross section C. TU Graz 2013.



142 Cross section D. TU Graz 2013.



143 Cross section E. TU Graz 2013.



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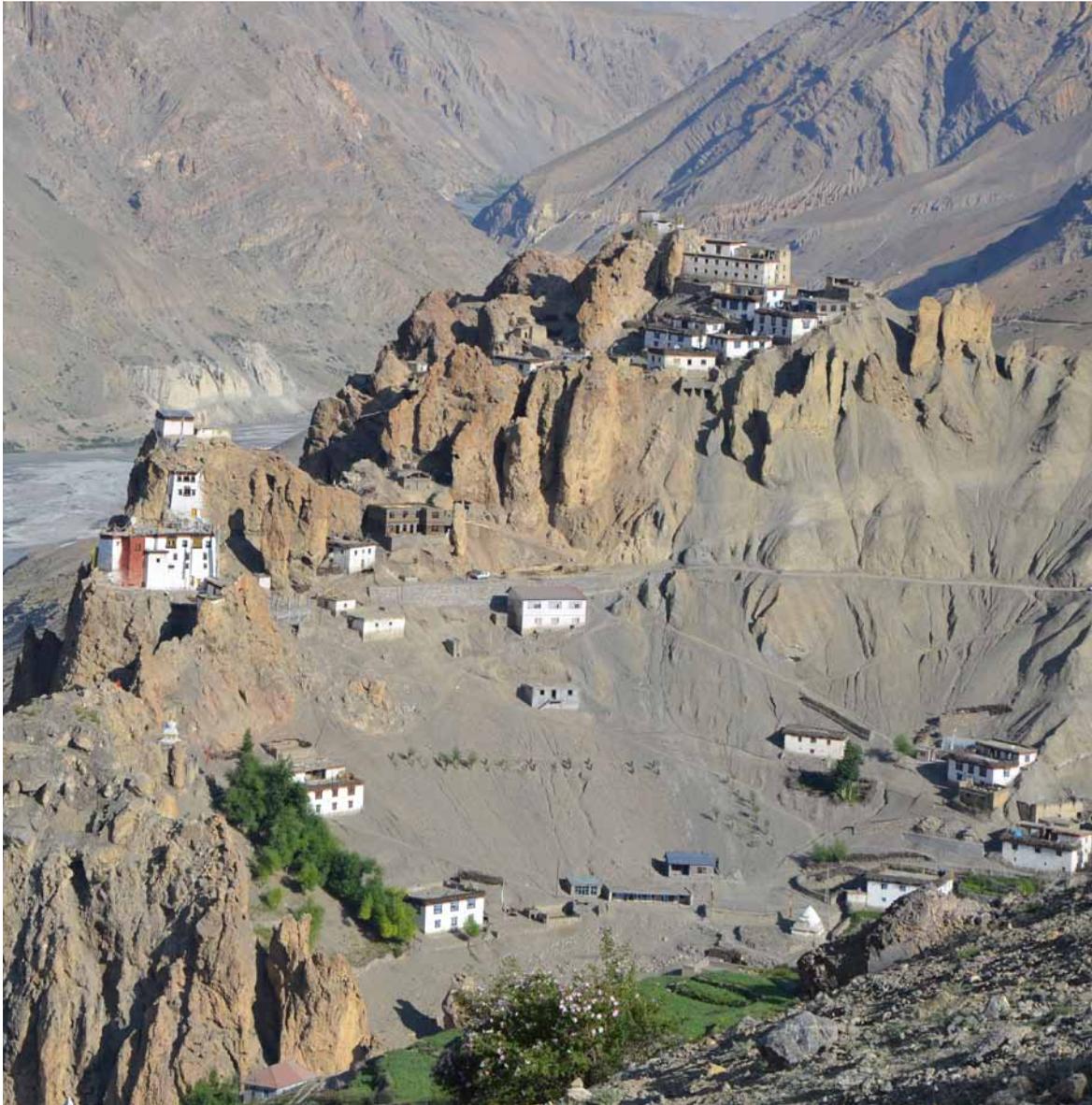
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© Victoria and Albert Museum, London (see fig. 07).



4

HISTORICAL RESEARCH ON DANGKHAR



144 The monastery complex and the old part of the village with the castle of the No no on its top. CA 2011.

4 HISTORICAL RESEARCH ON DANGKHAR

Lobsang Nyima Laurent

THE ANCIENT MONASTERY OF DANGKHAR: AN ANAMNESIS

While the monastery of Dangkhar (Tib. *Brag mkhar*) still occupies a dramatic position in the barren land of Spiti (Tib. *sPi ti*) today, its occurrences in literary sources, historical chronicles and inscriptions confine it to a ghost-like figure. However, as the former capital of Spiti it must have played, without any doubt, a significant role in the socio-political and religious landscape of the valley.¹

This preliminary report is an attempt to address this discrepancy. It records the occurrences of Dangkhar as a political and religious centre of the Spiti valley in primary sources and secondary literature over a period of about thousand years. However, it does not purport to be exhaustive given the difficulty in gathering all the documents pertaining to West Tibet and the means at our disposal. Each entry is presented following its chronological significance and is completed with contextualizing notes, remarks and archaeological observations.

This procedure is therefore not meant to establish the historicity of the place but rather to disentangle the relationship between the feudal principality and the religious establishment of Dangkhar within the larger frame of the Western Himalayan kingdoms.

THE SPITI VALLEY: A PAWN ON THE SOCIAL-POLITICAL LAND OF WEST TIBET

The Spiti valley is geographically located at a junction between the Greater Himalaya, the Tibetan plateau and the Indian hill state of Himachal Pradesh. It is formed by the Spiti River which rises on the slopes of the Kunzum pass (4551m) and ends its route as a tributary of the Sutlej River about hundred-fifty kilometres south-eastwards. Located on the Tibetan border and flanked by Kinnaur, Lahul, Zaskar and Ladakh, the Spiti valley lies at an altitude ranging from 3000 to 4000 meters above sea level. Despite the harshness of the climate and the rugged topography of the area, the Spiti valley was an important centre for trade and communication between the Indian subcontinent, Central Asia and West Tibet.

After the mid 18th century it suffered many invasions and raids that were often meant to secure or extend commercial control and trade conditions. The network of trade routes that criss-crossed the Western Himalayas also bears witness to the intimate connection between merchants, religious communities and rich patrons. The vitality of the religious establishments that spread along them can be best exemplified by the monastery and prestigious translation centre of Tabo.²

1 The spelling follows the name of the current monastic complex Brag mkhar bkra shis chos gling. The capital of Spiti is also recorded under other denominations such as Brang mkhar, Grang mkhar or Grang dkar in our sources.

2 See KLIMBURG-SALTER 1997.

Furthermore, the presence of religious complexes in Spiti was part of a larger phenomenon of pacification and Tibetanization of West Tibet which started round 986 when Lha Lama Yeshe Öd (Tib. *lHa bla ma Ye shes 'od*) initiated the conversion of his subjects to Buddhism.³

The native inhabitants of the Spiti valley and neighbouring areas were culturally and linguistically different from the new Tibetan ruling élite that favoured the latest diffusion of Buddhism which has been described as a massive intellectual and cultural process.⁴ This process of acculturation included the foundation and edification of chapels, temples and monastic centres as part of a domestication of the landscape. In addition, it involved a substantial effort in revising and translating Buddhist works written mainly in Sanskrit or in other Indic languages. This Buddhist renaissance and religious conversion which took place around the millennium in the Western Himalayas was to create not only a literature but a new culture.⁵ This could be only achieved with the formation of a class of literati and the help of Buddhist masters and preachers. Around 1020, two hundred youths from different areas were chosen to become the actors of this cultural movement. Thirty of them came from Spiti.⁶

The history of Buddhism in Spiti can be divided into several periods of religious and political influences which are summarized in a few words below.

The first period, as we have briefly outlined, goes back to the establishment of the Kingdoms of Guge Purang and the second diffusion of Buddhism in West Tibet which took place in the late 10th and 11th century. The first half of the 12th century was marked by the ravages of the Garlogpa invasions, a term which is believed to designate Muslim Qarakhanid Turks who settled in a neighbouring territory north of Guge.

The next period is characterized by the presence of hermits and meditators in West Tibet, belonging to the Kargyudpa school and whose main figure and founder is the well-known and celebrated yogi Milarepa (Tib. *Mi la res pa*) (1040 – 1123). Although of little political weight and rather unobtrusive in the religious landscape, its Drigung (Tib. *'Bri gung*) branch found increasing visibility in Ladakh and Guge where it was eventually defeated by the Sakyapa in 1290. The Sakyapa establishment, under the sovereignty of the Mongols, ruled from the second half of the 13th century until the Gelugpa ascendancy in the 15th century. This last period of religious effervescence is vital to understand the distribution of Tibetan monasticism and the forces at work in the Western Himalayas up to the mid 19th century when Spiti, Lahul and Ladakh went under British rule.

The rise of the Gelugpa order following the teachings of its charismatic founder and main exponent Tsongkhapa (Tib. *Tsong kha pa*) (1357 – 1419) not only involved large number of adherents, who would soon constitute the largest celibate monk communities in the history of Buddhist monasticism, but attracted the attention of aristocratic families and patrons, too. Last but not least, the incarnate lineage of the Dalai Lamas and its proximity with the central power of Lhasa promoted this school to the rank of state religion.⁷

3 See VITALI 1996.

4 See KLIMBURG-SALTER 2005.

5 See TUCCI 1988.

6 Similarly, from the three western dominions (Tib. *mNga' ris skor gsum*), as two hundred youths were gathered, who had considerable wisdom, bright intelligence, diligent mind, good heart, faith in Buddhism and fondness for the triple jewel, altogether two hundred, they were delivered on the path of liberation in the footsteps of Yeshe Öd's two sons. Consequently, one hundred from Guge, forty from Purang, thirty from Maryül (Tib. *Mar yul*), thirty from Spiti altogether two hundred, were gathered. From the Ngari Chronicles; see VITALI 1996: 59, 113, 233.

7 On the formation of the Tibetan state religion linked to the hegemony of the Gelugpa school and its mass monasticism; see MCCLEARLY and VAN DER KUIJP 2008 and GOLDSTEIN 2010.

The religious hegemony of the Gelugpa order, with its prestigious monastic universities and extensive curriculum, attracted monks from all over the Himalayan Range. After completing their scholastic training, these monks almost invariably returned to their native place in order to disseminate their doctrine. Thus, among the most active followers of Tsongkhapa, three of them were native of West Tibet and belonged to a group of six masters who were collectively remembered by the tradition as the “Six banners who diffused the teachings to the borderlands”.⁸

As a kind of a buffer zone between the different lands and authorities that competed for political supremacy, religious hegemony and commercial control, Spiti passed again under the nominal control of Ladakh for brief periods during the reigns of kings Tashi Namgyal (Tib. *bKra shis rNam rgyal*) (c.1555 – 1575) and Senge Namgyal (Tib. *Seng ge rNam rgyal*) (c.1616 – 1642). In 1834, the Sikh kingdom of the Punjab invaded Spiti and Ladakh in order to extend the boundaries of Jammu. The Spiti valley then suffered the ravages of other incursions of the Sikh militia until the Dogra army was finally defeated by the Tibetans in 1841.⁹ After 1846, the British ruled in the area and the lands of Spiti, Lahul and Ladakh were delivered into the hands of the government of India at last.

8 One of them is Sherab Zangpo (Tib. *She rab bzang po*) from Töd Ngari who laid foundations of three monasteries in the Nubra valley, two in Zaskar, converting a third one to the Gelugpa school and finally assigned to one of his own disciples the edification of Kyi Monastery in Spiti; see VITALI 2000.
9 See PETECH 1977.



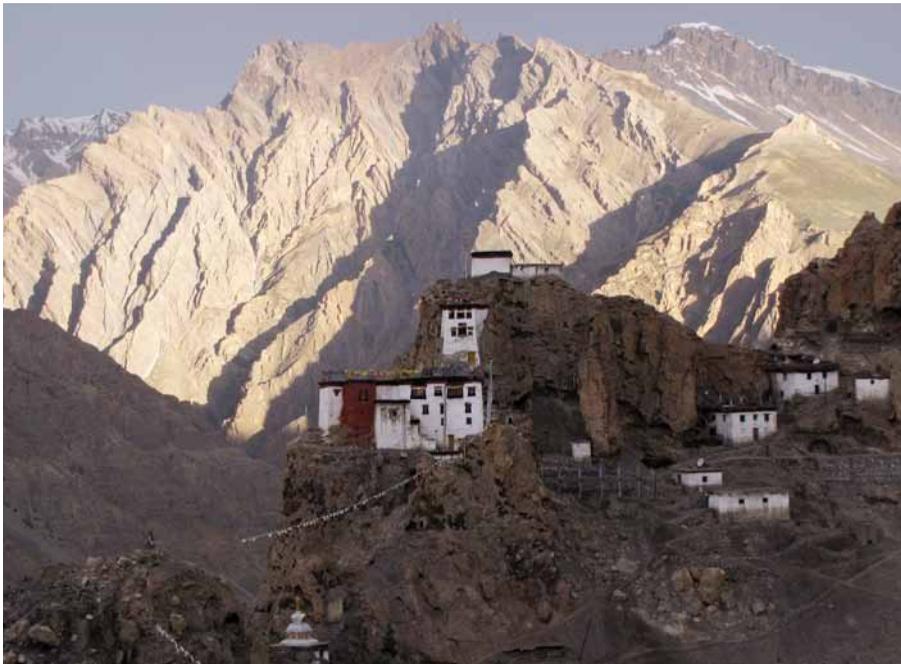
145 The confluence of the Spiti and Pin rivers. View from Dangkhar. LN 2010.

THE ANCIENT MONASTERY OF DANGKHAR

Dangkhār is located on the left bank of the Spiti River where the Pin River joins in, forming a large confluence which divides the whole valley into two areas of different morphology.¹⁰ The monastery, the village and the “castle” of the governor (Tib. *no no*) are nested on a spur which marks the outer limit of a corrie wherein the village lately expanded.¹¹ As its name suggests, the site of Dangkhār is above all a fortified palace (Tib. *mkhar*) which probably carried out the function of a district castle. From its vertiginous cliff and strategic location which overlooks the main route it was hence possible to see a hostile army approaching from both downstream and upstream the Spiti River. These types of feudal strongholds, where local lords often indulged in waging war against each other, are found all over Tibet and the Himalayan belt. Their edification in the political landscape is generally attributed to the disintegration of the Tibetan empire into smaller principalities which was followed by a period of unrest and civil war from the mid 9th century to the mid 13th century. The so-called capital of Spiti was never the centre of a powerful state or kingdom and the Tibetan term *rgyal sa*, which does not appear in our sources, should be better translated as royal site as we will see further on.

10 This may explain the distinction made between upper and lower Spiti which is often recorded under the designations of Pi cog, Pi ti pi cog, sPi ti spi cog, Ci cog or even Pi skyog and Pi kyog suggesting that the valley looks like a ladle (Tib. *skyogs*).

11 The earliest households are clearly located on the spur above the monastery and below the uppermost “castle” of the No no. The first household built within the corrie belongs to rGan dPal ldan’s family and cannot be much older than the first half of the 20th century when Spiti started to enjoy a relatively quiet period. Oral communication with rGan dPal ldan, July 2010.



146 The ancient monastery of Dangkhār. LN 2010.

DANGKHAR AND THE KINDOM OF GUGE

From the late 10th century until 1630, West Tibet was ruled by a dynasty of pious kings who, in more than one occasions, renounced their secular prerogatives – at least partially – and decided to adopt a more ascetic way of life by taking religious vows. Their aspirations to sanctity, which was equally well illustrated by their missionary zeal and cultural patronage, could not always prevent dissident branches of the royal family from attempting to usurp the throne as a passage of the *Ngari Chronicles* indicates:¹²

*Finally, having had a dispute with a subject, he [king rTse lde] was murdered. He died before his paternal uncle. // As a matter of fact, his four sons were as follows. His son was rTse 'od. His son was Jo rtse. His son rDo rje gdan. These three offspring resided at Sang brag Brang mkhar. lHa btsun dBang 'od was designated the heir apparent. He resided at dKar po'i Te lde. Finally, when there was a dispute between [uncle and nephew], dbon mnga' bdag bSod nams rtse assassinated him at Tho gling Thang gi 'od. //*¹³

This report will not discuss the succession struggle which broke out after King Tse De's (Tib. *rTse lde*) demise. It is sufficient to note that three of his sons were deprived of power and settled down in Dangkhar¹⁴, while Lhasun Wang Öd (Tib. *lHa btsun dBang 'od*), the designated heir, was also ousted and could no longer reside at Tholing, the capital of the early dynasty of Guge. He was eventually assassinated by his paternal uncle Sonam Tse (Tib. *bSod nams rtse*) which, as Vitali explains, resulted in a new politico-territorial arrangement. The events related above must have taken place in the last quarter of the 11th century sometime between 1083 and 1092. They offer the earliest literary attestation of Dangkhar as a residence of Guge's royalty. In the present state of preservation, the ancient monastery bears no architectural, epigraphic or iconographical sign of dating back to this time.¹⁵

12 The *Ngari Chronicles* (Tib. *mNga' ris rgyal rabs*) were compiled by Ngawang Dragpa (Tib. *Ngag bdang grags pa*) around 1497; see VITALI 1996: 125.

13 Mjug tu bangs mo la 'khus nas dkrong ste khu'i sngon la dgung gshegs so // de la sras bzhi ste / seng brag / brag mkhar la bzhugs / de'i sras rtse 'od / de'i sras jo rtse / de'i sras rdo rje gdan dang gdung gsum / lha btsun dbang 'od / gdung tshab la bzhag te / dkar po'i te lder bzhugs / mjug tu khu dbon 'khrugs pa'i dus su / dbon mnga' bdag bsod nams rtse / tho gling gi thang gi 'od du dkrong ngo //.

14 It leaves little doubt that the text refers here to Dangkhar in Spiti although the first toponym Sang brag, which Vitali corrects as Seng brag (the Leonine Rock), has not been located yet or is unknown to me; VITALI 1996: 125 n.141.

15 See VITALI 1996.



147 The old village of Dangkhar and the Spiti river. LN 2008.

A POSSIBLE ROYAL RENOVATOR

On the 31st July 1909, the Moravian missionary A. H. Francke (1870 – 1930), who later became Professor of Tibetan at Berlin University, reached Dangkhar in Spiti and questioned the monks regarding the origin of their monastery. He later completed his report with a note from the “Reu-mig” which I believe is the *Re ’u mig* of the Mongolian historiographer Sumpa Khenpo (Tib. *Sum pa khan po*) (1704 – 1788). Since I did not manage to consult this text or any critical edition, and hence cannot confirm the reference, we shall rely on Francke’s work for the time being:¹⁶

The monastery of this town, the capital of Spiti, is called Lha-’od-pa[’]i-dgon-pa. Lha-’od seems to be the local pronunciation of Zla-’od, the name of a famous lama who was born in 1121, according to the Reu-mig. Zla-’od-pa would then mean “a follower of Zla-’od”. He is apparently the founder or renovator of the monastery which now belongs to the Gelugpa order.

The following comments should then be taken with all due circumspection. Let us first consider the phonological remark about the name of that famous lama lHa ’od/Zla ’od. The name of Zla ’od, attached to a renowned historical figure who had disciples in Spiti, has not come up yet in any other documents pertaining to West Tibet. There is, however, a *pandita* Zla ’od bzang po who, in 1006, along with Bhi na se na and Ka ma la rakshita, conferred the monastic ordination to the notorious translator Rinchen Zangpo (Tib. *Rin chen bzang po*) (958 – 1055).¹⁷

His candidature is not very convincing since a gap of more than hundred years stands between the *pandita*’s religious activity in the area and the lama Zla ’od of the late *Re ’u mig*. Their identification would hence demand strong revision of the chronology assessed by Francke.

Moreover, we are provisionally inclined to believe that the religious establishment of Dangkhar was correctly referred to, at least orally, as *lHa ’od pa’i dgon pa*, the monastery of lHa ’od or perhaps of lHa ’od’s followers. This suggests that we could be dealing here with a member of the royal dynasty of Guge who, like many of his predecessors, decided to gain spiritual merits and political credence by restoring a religious edifice.¹⁸

It is of course tempting to hazard a guess at the identity of this mysterious royal patron. The name of Tse Öd can be conjecturally put forward. As we have seen, he found refuge at Dangkhar with two of his brothers following the murder of his father king Tse De. Yet, the year 1121 would be untenable for Tse Öd’s birth although it might be acceptable for the time of the monastery renovation. If the identity and biography of lHa ’od/Zla ’od cannot be ascertained at the moment, the documenting campaign carried out by the team of Graz University of Technology in summer 2010 may shed some light on the subject. The observations made *in situ* and the plans realised afterwards indicate that the main edifice of the monastery of Dangkhar was subject to a major enlargement.

The earliest room was probably the assembly hall (Tib. *’du khang*), of what is now the monastery, with its almost square shape which suggests a towering castle origin. The roof of the assembly hall, which has become the floor of a large empty space of no specific purpose, has a skylight which once allowed light to filter through, and accommodates a series of four stupas (Tib. *mchod rten*) on its outermost east side.

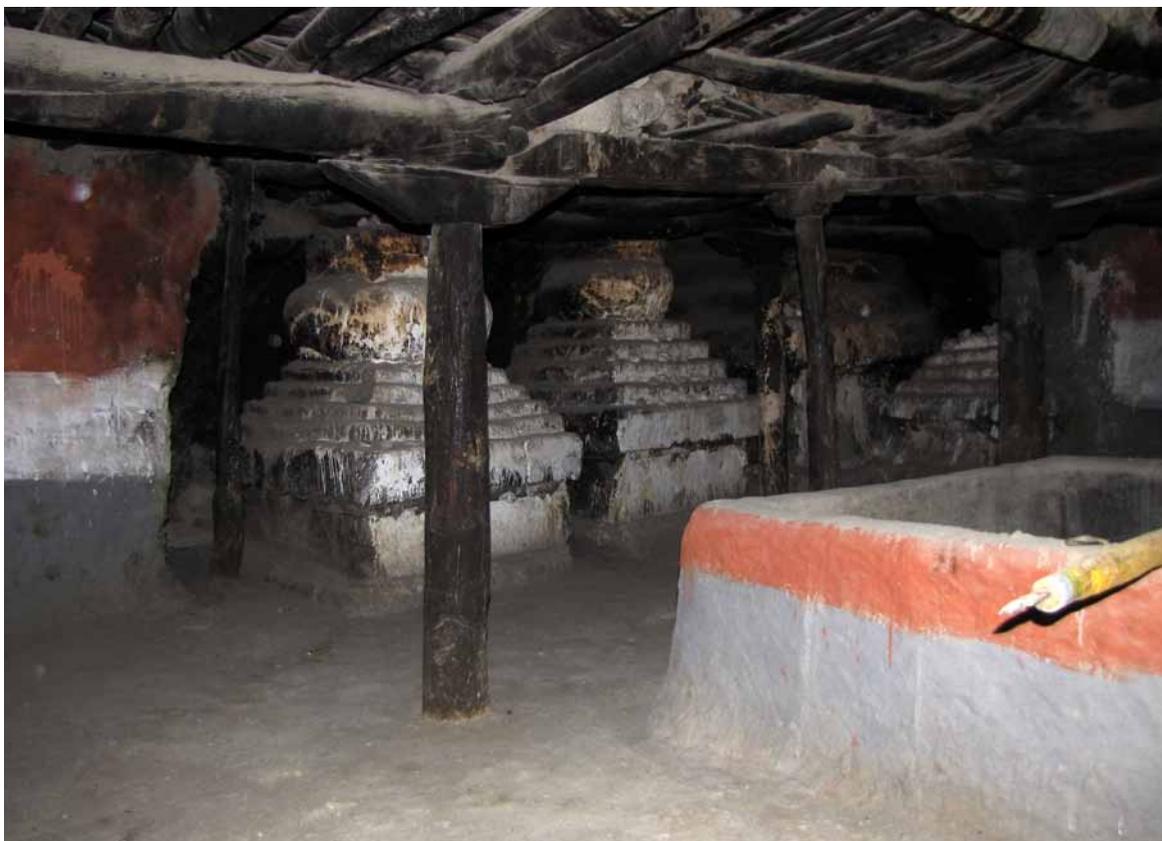
16 See FRANCKE 1914: 43. The latest critical edition of this text seems to be B.P. Singh (ed. and tr.). *The Chronology of Tibet according to the Re ’umig of Sumpa Khenpo*, Bihar Research Society, Patna, 1991.

17 About the ordination of Rinchen Zangpo and the pertaining sources, see some details regarding Rinchen Zangpo; see VITALI 1996: 240.

18 We assume that Sumpa Khenpo uses the term *bzheng pa*, a verb that means to build or erect, to lay foundation, to renovate or to enlarge, which could explain Francke’s attempt of disambiguation.

These stupas are of particular interest to us because they were built in all likelihood after the completion of the assembly hall and before the subsequent enlargement of the edifice, in both width and height, for the upper part of the largest stupa is clearly embedded in the beams of the ceiling while its wooden axis visibly reappears in the upper floor. It is difficult to specify the date and the function of these stupas, which were possibly replastered on many occasions, and to establish whether they were votive monuments or reliquaries; at least one of them has already been opened leaving nothing to contemplate other than its axis. It cannot be ruled out that the largest stupa still contains the remains and relics of an important religious figure who was long forgotten by the collective memory of the place but who might have assumed a significant role in the history of Dangkhār.

However, it seems premature to discuss construction phases in this report. The assembly hall should nonetheless be given priority due to its centrality in the development of the edifice. Besides the renovation of its endangered wall paintings, carbon dating and dendrochronology analyses of the wooden beams and pillars could provide useful information.



148 The four stupas and the skylight on the roof of the assembly hall. LN 2010.

A 15TH CENTURY HISTORICAL WALL PAINTING

In the 15th century, Sangpuwa Lhawang Lodrö (Tib. *gSang phu ba lHa dbang blo gros*), a native from West Tibet who was a disciple of Tsongkhapa (1357 – 1419), Khädrupje (Tib. *mKhas grub rje*) (1385 – 1437)¹⁹ and Gendun Drup (Tib. *dGe 'dun grub*) (1391– 1474)²⁰, returned to West Tibet participating actively in the diffusion of Gelugpa tenets. Sangpuwa Lhawang Lodrö's intensive activity, which included the foundations of many temples as we shall see, is not only attested in literary sources but is also epigraphically and iconographically glorified on the wall of the Mandala Temple (Tib. *dKyil 'khor lha khang*) at Tabo Monastery. A portrait of Lhawang Lodrö is depicted on the left side of the northern wall and bears the inscription “The one whose name is lord lHa dbang became [...] the ornament of the crown, the king of all migratory beings”. The “ornament of the crown” is a frequent expression used to designate the monastic complex of Tabo, for which Lhawang Lodrö is credited with the construction of various temples.²¹ These temples were also represented immediately below his portrait.

19 Khädrupje Geleg Palzang was posthumously recognised as the 1st Panchen Rinpoche by the 5th Dalai Lama who established the institution in the 17th century. Also see next note.

20 Gendun Drup was posthumously recognised as the first Dalai Lama. In 1447, he founded the monastery of Tashi Lhunpo (Tib. *bKra shis lhun po*) in Central Tibet (Tib. *Tsang*) which became a “focal point of reference” for the Gelugpa monasteries of the Western Himalayas; see VITALI 2000. Other Gelugpa exponents and religious masters from Tashi Lunpo, such as Shantipa Lodrö Gyaltzen (Tib. *Shantipa blo gros rgyal mtshan*) (1487-1567) and the incarnate lineages of Lochen Rinchen Zangpo and the Panchen Lama, were instrumental in sealing the bound between the two regions.

21 See VITALI 1999.



149 Northern wall of the Mandala Temple at Tabo Monastery. Picture montage TU Graz2005.

The scene depicted shows the monastic complex of Tabo at the time of the completion of the Mandala Temple and is accompanied with an inscription, “the ground plan of the temple, the ornament of Tabo”. Vitali claims that this type of panoramic view of the buildings, with its somewhat awkward perspective, is a common practice of West Tibet in the 15th century.²² In the sacred courtyard (Tib. *chos 'khor*), a group of historical personages are gathered around the central figure of Tsongkhapa, in what appears to be a religious teaching, and can be identified thanks to individual inscriptions.²³ Thus, flanked to the right of Lobsang Dragpa (Tib. *Blo bzang grags pa*) is a listening pupil (Tib. *chos nyan pa*²⁴) and to his left the great arhat Chöphag (Tib. *Chos 'phags*). Below these three figures is seated a lay congregation of high dignitaries. A royal couple comes first with king Sonam Bum (Tib. *bSod nams 'bum*) and his wife wife Lhālham Djom (Tib. *jo co lHas lham 'joms*), followed by a minister called Ringyan (Tib. *Rin rgyan*). Finally, in the lower register of this depiction stands a singular character who is identified as the clerical officer and minister from Dangkhar. Commenting this last personage, Vitali asserts that his title indicates that he was “a junior religious minister of royal descent” and gratifies the whole congregation as “the court of Spiti of those years”.²⁵ This painting obviously raises many more questions about the royal genealogy of the Spiti valley in the 15th century than it provides historical grounds for further development. However, Dangkhar appears to be once again a place of conjoined political and religious significance in the area and gains increasing visibility in our investigation.

THE 40TH HOLDER OF THE GANDEN THRONE

Our next reference is provided by an entry of the *Dungkar Encyclopaedia* (Tib. *Dung dkar tshig mdzod chen po*) compiled by Dungkar Lobsang Thrinlay (Tib. *Dung dkar blo bzang 'phrin las*) (1927 – 1997) one of the most important Tibetan historians of the 20th century.²⁶ The author has recorded the succession of most Ganden Thripa (Tib. *dGa' ldan khri pa*) of the Gelugpa establishment and hence offers interesting information regarding our subject. In 1654, Palden Gyatso (Tib. *dPal ldan rgyal mtsho*) (c.1601 – 1674) from Dangkhar in Spiti became the 40th holder of the Ganden throne, a position he held during seven years. Prior to his appointment to the most prestigious and powerful rank of the Gelugpa hierarchy, he completed his studies first at Ngari Trasang (Tib. *mNga' ris grwa tshang*) and then at the Tantric college of lower Tibet near Lhasa.²⁷ Unfortunately, the author of the *Dungkar Encyclopaedia* does not indicate his primary source for this entry but it seems reasonable to assume that he consulted the *Vaidūrya ser po* composed by the Tibetan regent Sangye Gyatso (Tib. *sDe srid Sangs rgyas rgya mtsho*), which was not available to us for confirmation. It is difficult to ascertain whether Palden Gyatso was just a native of Dangkhar village or a novice monk from the monastery when he left the secluded valley of Spiti for further Buddhist studies in Central Tibet, and may not even be relevant. In any case, the inhabitants of Dangkhar reappear continuously *en filigrane* of the great religious and political history of the Himalayan kingdoms.²⁸

22 See VITALI 1996, 1999.

23 See TUCCI 1988: 113. These inscriptions were recorded differently by Tucci and we did not succeed in reading all of them successfully when we last visited the place in summer 2010. We rely here on Vitali's rendering; see VITALI 1996: 525 n. 896.

24 The term *chos nyan pa* (Tib. *dharmasravanika*) literally designates an individual worthy to listen to Buddhist exposure. It cannot be ruled out that it refers here to the proper name of the personage illustrated.

25 See VITALI 1996: 525 n. 896.

26 We wish to thank dGe shes chab ril from Dangkhar for drawing our attention to this reference.

27 The imposing monastery of Ngari Trasang in the Yon valley was built by the 2nd Dalai Lama under the patronage of a king of Guge in 1541.

28 Little is known about the local villagers and peasants of Dangkhar. Following Lyall's observations, Francke records however the name of six paternal relative clans (Tib. *pha spun*): 1) rGya zhing pa 2) Khyung po 3) bLon chen pa 4) sNyegs pa 5) Henir 6) Nandu The last two are clearly of non-Tibetan origin; see FRANCKE 1914: 48.

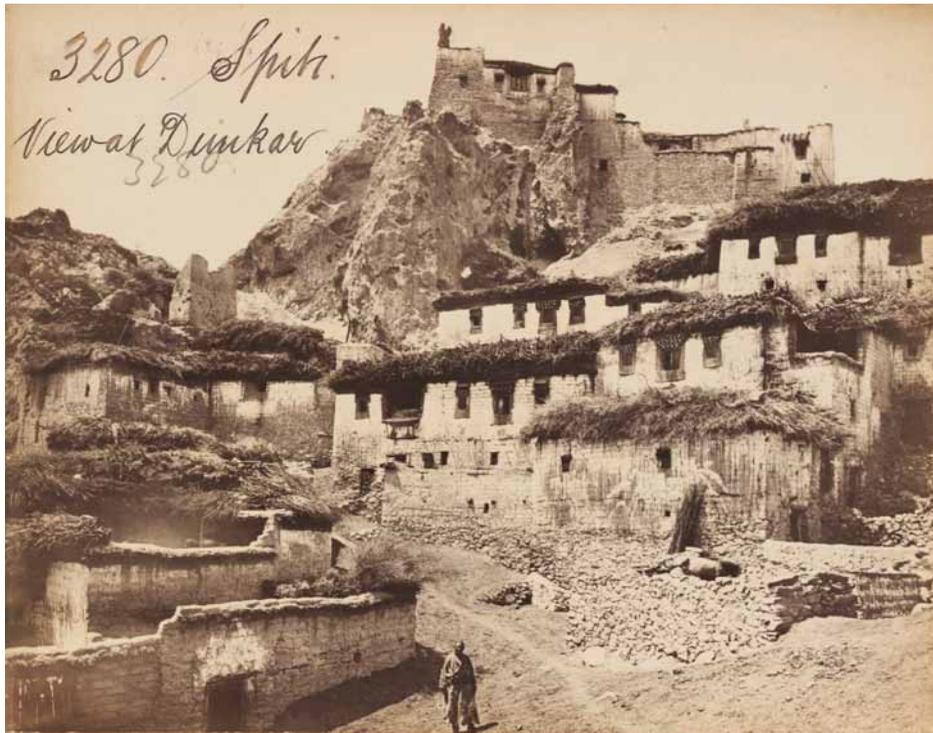
THE CASTELLAN AND THE CHAMBERLAIN

The next sources, somewhat evanescent and distant in time from about hundred years, offer a glimpse at two local personalities of the feudal stronghold of Spiti. The first occurrence is found in the colophon of a text commissioned by the king of Ladakh Senge Namgyal around 1630 when his aggressive campaigns in West Tibet resulted in the disintegration of the kingdom of Guge. Namkha Palgön (Tib. *Nam mka' dpal mgon*), an aristocratic member of the king's retinue, is entrusted by the latter with task of copying several Buddhist scriptures and hagiographies. In the Sa bu colophon of the the Aṣṭasārasrikāpraññāpāramitā, a Gaga Tenzin Namgyal (Tib. *Gag ga bsTan 'dzin rnam rgyal*), castellan of Dangkhar in Spiti is mentioned.²⁹ In his unsurpassed work on the history of Ladakh, Petech wonders whether Tenzin Namgyal could be King Senge Namgyal's half brother but concludes that a "royal prince would be expected to be called *rgyal sras* and not *ga ga*."³⁰

The Ladakhi control over the region lasted from 1630 until 1680 when the government of Tibet brought the Namgyal paramuncy to an end. The Spiti valley was thus torn between ascending powers and struggles of influence from different religious orders. In 1647, the kingdom of the three western dominions was divided between the three sons of the late Senge Namgyal who passed away in 1642.

²⁹ His name is said to be recorded again in a Spiti inscription; see FRANKE 1906: F. 173. This document was not at our disposal.

³⁰ See PETECH 1977: 55 n. 3.



150 Old village and castle of Dangkhar pictured at 1850-1870. E.208:3318-1994 © Victoria and Albert Museum, London.

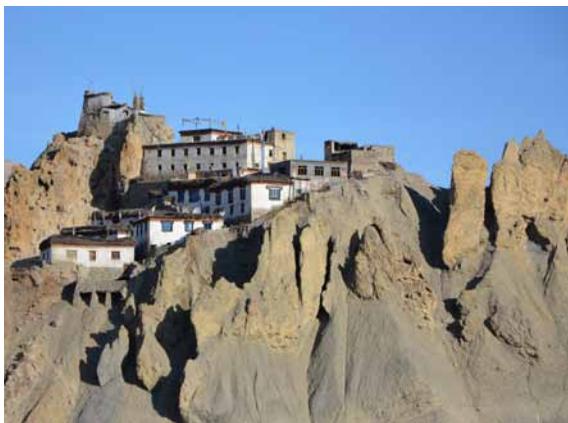
Although Dechog Namgyal (Tib. *bDe mchog rnam rgyal*) officially obtained Zanskar and Spiti, the monasteries of the latter seem to have remained under the jurisdiction of the central Tibetan government as we will see further on.³¹ It is probably during those years that a castle, which according to Francke was used as a garrison post by the Ladakhi people, before it eventually became the seat of the *No no*, was built on top of the spur overlooking the village and the monastery of Dangkhar.³² Consequently, the identity and political allegiance of our castellan Gaga Tenzin Namgyal would certainly be of great interest to us in order to determine the topographical configuration of Dangkhar by the time of the Tibet-Ladakh treaty.

A century later, sometime around 1750, the Western Himalayas were agitated by a conflict opposing Phuntsog Namgyal, the king of Upper Ladakh, and king Tashi Namgyal of Lower Ladakh. The rivalry between the uncle and the nephew over the supremacy in Spiti and the limited control of trade in the area was endangering the commercial interests of Central Tibet, too. Therefore, the 7th Dalai Lama (1708 – 1757) appointed a mediator in the person of Kathog Rigdzin Tsewang Norbu (Tib. *Ka' thog rig 'dzin tshe dbang nor bu*) (1698 – 1755) who was deputed to Ladakh in order to hold negotiation and resolve the argument. The meeting between the different parties took place in Gartog (Tib. *sGar tog*) where two government officials of Ngari went as chamberlains. Although their names were not preserved, the two representatives of Western Tibet were said to be from Zanskar and Dangkhar. The negotiations eventually succeeded and an agreement was ratified in 1752.

The potential disturbances that could result on the Western Tibetan frontier due to the impediment of the commercial traffic between North West India, Central Asia and Tibet underline the critical role that feudal territories like Spiti, Zanskar and Lahul, which marked the westernmost limit of Tibet political influence, once had. It is therefore not surprising that despite its relative isolation the feudatory land of Spiti would be consulted and officially represented in times of trouble.

31 Spiti still had to pay annual revenue in iron bars to Ladakh up to 1842; see PETECH 1977.

32 See FRANCKE 1914: 44.



151 The upper part of the old village. CA 2011.



152 The so-called Castle of the No no from behind. LN 2010.

SOCIAL PRACTICE AND ARCHAEOLOGICAL EVIDENCE

In his study of the socio-economic organisation between the major monasteries and the lay population in Spiti, Jahoda provides helpful pieces of information to understand some of the structures found in Dangkhar. Since the mid 17th century, the main Gelugpa monasteries of Kyi, Dangkhar and Tabo, with their estates, were subject to Lhasa and recorded as *chos gzhis*, a term quite similar to *bla brang* which designates a household corporation of monks.

These monastic communities were important landowners ensuring regular and substantial income. Certain fields were the full property of the monastery and were cultivated by tenants while others belonged to individual monks.

Besides, a due in kind was levied from taxable landholding peasants (Tib. *khral pa*) in order to support monastic communities as part of a special economic system (Tib. *chos gzhis*) which is the main subject of Jahoda's paper. Like him, we are inclined to believe that the *bon* "designates a special category of religious dues in kind" such a grains like barley. This customary law of levying grains was still witnessed by Coldstream, a British officer stationed in Spiti in 1912. His account of an event located in Dangkhar is reproduced here as given by Jahoda; all additions are his:

All possible precautions were taken to verify the payments of pun [bon] [...] After some difficulty the monastery records were procured and examined. These were always in a very confused state, being only a mass of tattered manuscripts packed without any order into leather boxes. [...] At Dangkhar a darbar was held at which the abbots of all monasteries, the Nono [i.e. the head of the leading local aristocratic family] and his servants, the patwari and the great majority of the landowners were present. [...]

*Asked why the truth had been concealed so long, the assembly gave the explanation [...] that they feared confiscation of religious dues by Government. "But now that the measuring chain has come to Spiti, nothing can possibly be hidden, and each khang-chhen [khang chen] has been ordered to say what is true." This declaration was corroborated by a high dignitary of the Lhasa faith [i.e. the Dge lugs pa school, most probably the contemporary incarnation of lo chen Rin chen bzang po] who was living in the monastery of Ki. The people admitted that whatever cash revenue was imposed they would be bound by their religion to continue paying pun at the existing rates to the monasteries.*³³

33 See JAHODA 2007: 229.



153 The granary unearthened by rGan dPal ldan. LN 2010.



154 Inside of the granary space. LN 2010.

In summer 2010, three small dissimulated chambers were documented inside the monastery of Dangkhar. Two of them had been unmistakably used as granaries as the remains of grain and dead maggots indicated. Gen Palden (Tib. *rgan dPal ldan*), who was in charge of the place at that time, pointed out a third granary which he himself reopened to let us take measurements. These somewhat hidden storage locations are of no surprise when reading Coldstream's report. The latter also explains that "the pun collections are spent principally on religious feasts and concerts in which the lay population joins". On inspection, the structures partially dug into the ground and embedded in the walls of the monastery were ideal granaries to stock large quantity of grains and protect them from rodents and germination until the time of celebration. By and large, the commotion that followed the double taxation imposed by the British upon the households of Spiti around 1840 and the court that was eventually hold in the presence of the settlement officer, the landowners, the abbots, the *No no* and the high dignitary of Kyi monastery is a remarkable testimony to the multifunctional identity of Dangkhar. The perennial issue between religious and state edifice finds here a social resonance which underlines the symbolic function of the place as the socio-economic, religious and political centre of the Spiti valley.

A SECRET DOOR AND A MYSTERIOUS SPIRITUAL FRIEND

Finally, it must be recalled that when Francke was visiting the assembly hall of Dangkhar in 1909, the monks pointed out an inscription that he could not read because of the dark but that contained, he was told, the term "spiritual friend" (Tib. *dge ba'i bshes gnyen*). He also adds that the inscription was located "above one of the doors", a statement that makes eyebrows to rise since the main doorway provides the only access to the assembly hall today.³⁴ But in July 2010, while documenting the place, some senior monks confirmed that their elders decided, many years ago and for some reasons that were no longer remembered, to wall the lateral door on the right side of the hall, obliterating the inscription forever.

It has been recently argued, with much passion and intellectual brilliance, that the aim of any archaeological enterprise is the recollection of memory rather than the investigation of the past.³⁵ From the top of its steep cliff, the monastery of Dangkhar has not come to term with the structural deficiencies of history, while its most intimate structures (e.g walls, paintings, artefacts etc.) are the sole remaining evidences of a memory lost. Thus, repairing the walls, renovating the paintings, dating the structures should bring us much happiness, if not more, than waiting for new historical source and textual testimony about the place. In other words, to recognize the significant contribution of Dangkhar in the Spiti valley is to ensure its continuity into the present time. Black and white photographs taken almost a century ago attest it: the living memory of Dangkhar is falling apart. For the identity of the spiritual friend does not matter as much as the recalling of his kindness. This is the wisdom of the place.

³⁴ See FRANCKE 1914: 44.

³⁵ See OLIVIER 2010.

THE EXPANSION AND THE TOPOGRAPHICAL REORGANISATION

While the earliest reference found in *The Ngari Chronicles* clearly mentions the toponym of *Sang brag Brang mkhar* in relation to the royal family of Guge Purang, for example, it does not state the architectural nature of the site.³⁶ Did it, therefore, refer to a fortified royal residence, as we tend to believe, or to a monastic complex? Moreover, can we even ascertain that the toponym from *The Ngari Chronicles* refers to the site in the Spiti valley?³⁷ Despite the difficulty of clarifying the origin of Dangkhar and establishing the *terminus post quem* for our building, the first fieldwork has shed some new light in the form of oral testimonies and monastic literary documents. The information they contain helps contextualize the monastic complex of Dangkhar within the larger framework of a territory, its villages and hamlets, fields, water system, and communication routes. In addition, the fieldwork in 2011 was also the occasion to further investigate information recorded by August Hermann Francke, Joseph Gergan, and others in the first half of the 20th century.

36 *The Ngari Chronicles* (mNga' ris rgyal rabs) were composed by Ngag dbang grags pa around 1497. The mention of the toponym Sang brag Brang mkhar is related to events which probably occurred between 1083 and 1092 when the kingdom of West Tibet was agitated by internal strife and was eventually dismembered in 1088 according to Vitali; see VITALI 1996 and 2003.

37 Neil Howard has documented the structural vestiges of a rounded fortified tower of approximately 7m in diameter known as Takkar (Dangkhar), and which “command[ed] the south-western entrance to central Zanskar”. This edifice could have served as early as the 10th century hence colliding with our assumption that *The Ngari Chronicles* actually refers to a location in the Spiti valley; see HOWARD 1995.



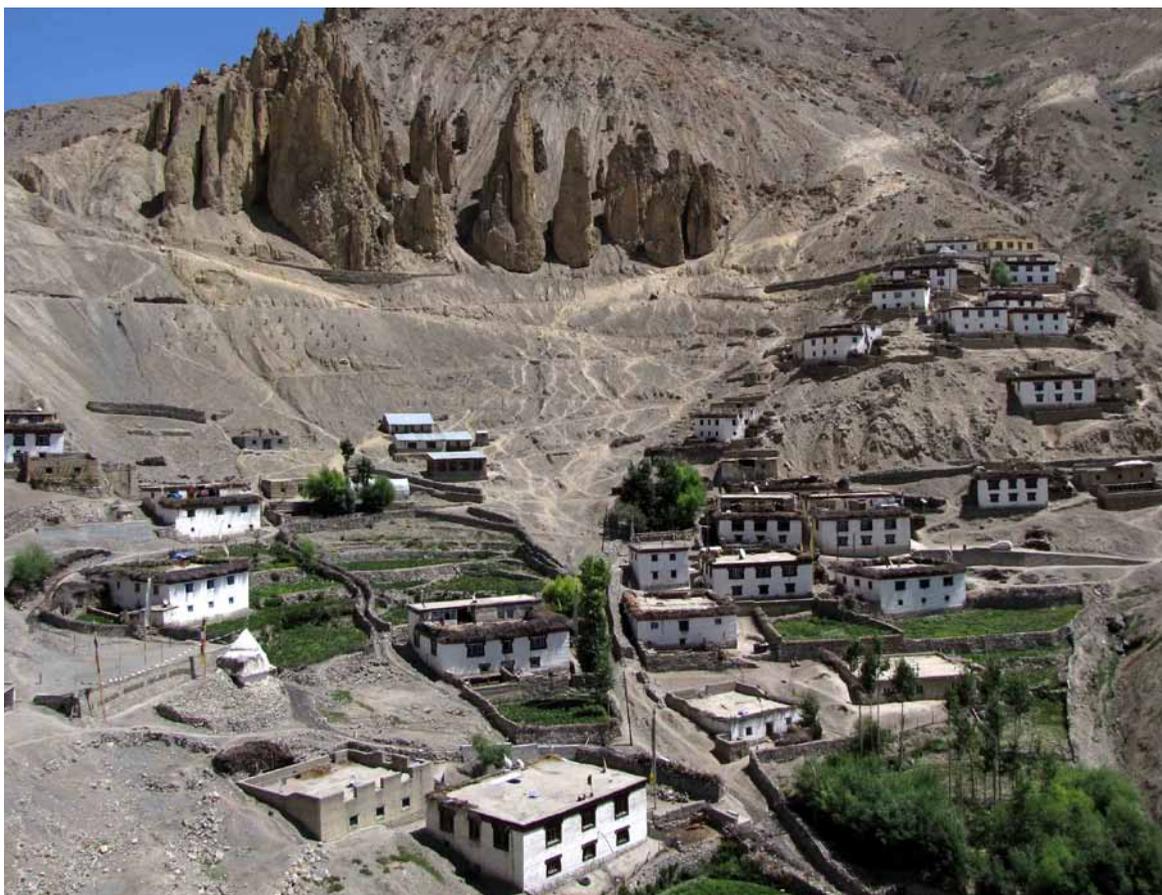
155 View of the valley and the village area. LN 2010.

The earliest buildings still preserved are located on the spur above the monastery and below the uppermost “castle” of the Governor.³⁸ Most of them have been refurbished over the centuries. Three buildings still present some old architectural features such as large defensive stone walls at ground level, use of sun dried bricks for the next floors, and larger windows and openings at the upper levels.

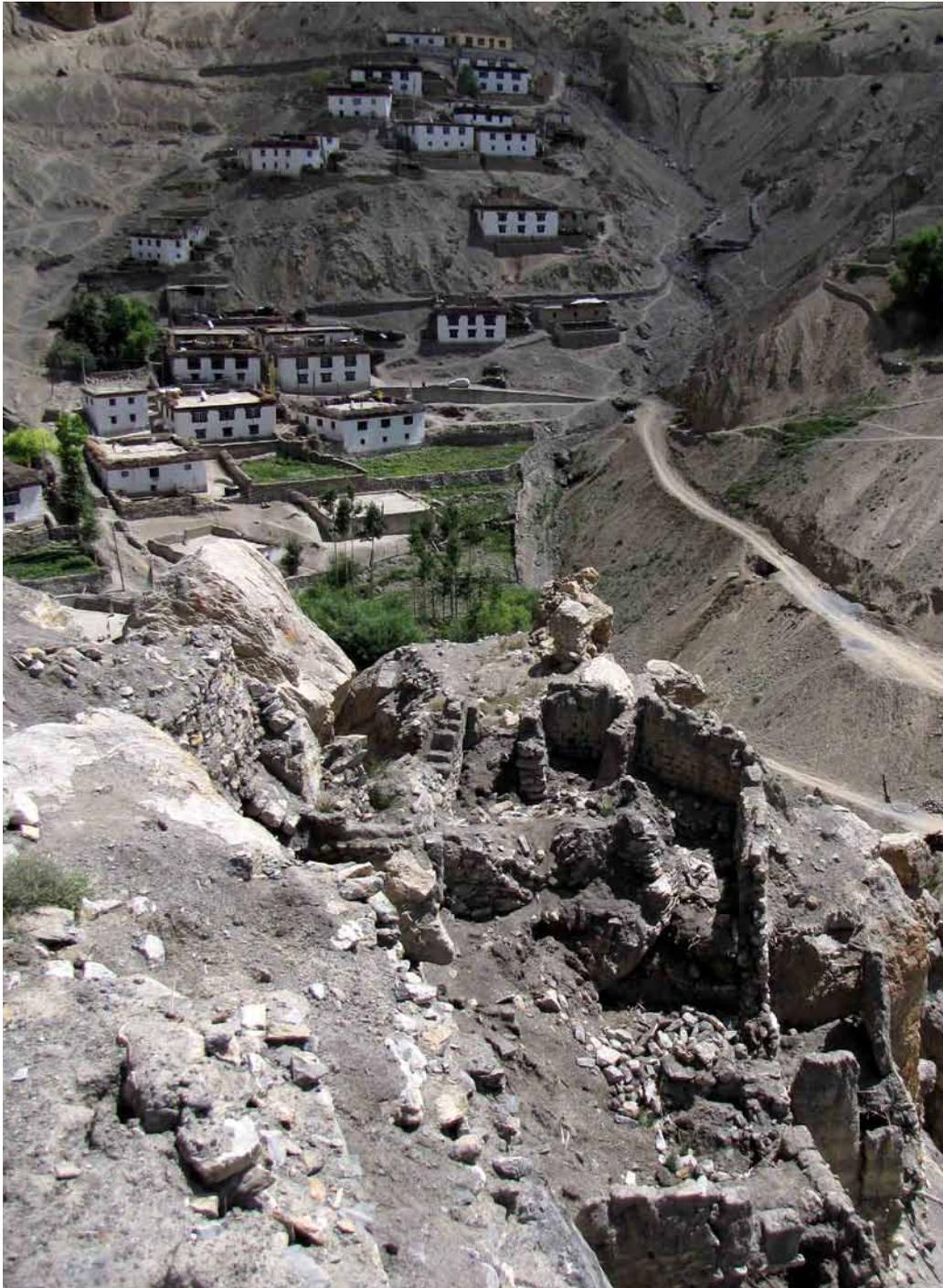
The first dwelling established within the corrie belongs to the *Tshe ba* family.³⁹ Their house was first built by the grandparents of Gen Palden who was born in 1970. Their habitation, therefore, cannot be much older than the first quarter of the 20th century. Since then, the households located within the corrie are usually referred to as *tshe* while the earliest houses situated on the spur are called *mkhar stod*; literally the upper part of the fortress. Many families have since moved from *mkhar stod* to *tshe*.

38 Other houses and/or monastic quarters were located on the ridge below the monastery, as black and white photographs and etchings attest. All these buildings were abandoned due to the instability of this part of the rock and are now in ruins.

39 Tibetan spelling uncertain.



156 Dangkhar corrie and the *tshe* area. LN 2011.



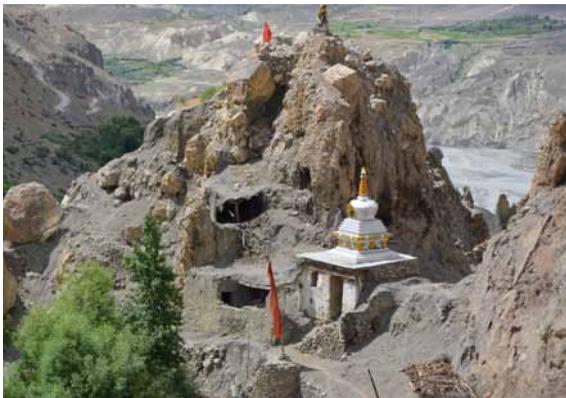
157 Ruins on top of the ridge. LN 2011.

There are today eleven *mkhar stod pa* households although only ten of them are currently inhabited.⁴⁰ The owner of the last one has moved to the *tshé* area while retaining his old property. Whether they are located on the spur or inside the corrie, the households belong to both *khang chung pa* and *khang chen pa* families. This social and economical distinction between large householders and small householders plays not only a decisive role in the division of the arable land of the territory, but also involves the taxes levied by the religious administration unit, as some of the monastic documents recorded 2011 emphasise.

The downhill expansion of the village at the beginning of the 20th century could well be the consequence of a period of political stability under British rule, when Spiti was eventually detached from Ladakh, following the Treaty of Amritsar in 1846. The inhabitants of Dangkhar village were then able to leave their defensive location on top of the ridge and move down to the corrie. Later on, a gateway stūpa-like (Tib. *rgyal sgo'i mchod rten*), located to the south of the site, seems to have been built on top of earlier vestiges. The site is disturbed and the interpretation of its remains is difficult. Nineteen century etchings and photographs show the presence of large buildings but do not allow the restitution of a gate or a stūpa. As part of the gateway structure, the leonine wooden brackets display some skilful work and archaic features.⁴¹ These kinds of leonine beam ends are commonly found on early monuments in Ladakh, e.g. in Alchi and Wanla.

40 Referred to as *mkhar stod te* [sic] in the local Tibetan dialect.

41 The lion, already a symbol of royalty and power in ancient India, came to represent the Buddha as the “Lion of the Sakya”. With the expansion of Buddhism, the artistic representation of lions spread beyond the Indian subcontinent and reached Tibet between the 7th and 8th century. As an architectural feature, beam ends in the shape of a lion are already represented in reliefs at Gandhāra and Mathurā. In Tibet, early representations of lions are not only found in imperial necropolises (i.e. lion statues of 'Phyong rgyas; see HELLER 2007) but also in religious architecture (i.e. carved lion beam ends of the Jo khang; see HELLER 2004).



158 The gateway stupa from north-east. CA 2011.



159 The window at the north-eastern facade. CA 2011.

The lions of Dangkhar seem, however, to exhibit a regional and somewhat more naturalistic style than those of the neighbouring kingdom, as the whirl of hair on the shoulder tends to indicate. The reuse of these lions within the structure of a gateway stūpa prevents any relative dating based on stylistic grounds alone.⁴²

Moreover, the small murals partly preserved in a niche inside the structure could well be some of the earliest paintings at Dangkhar. Despite the heavy damage and the almost complete crumbling of the front wall, the iconographical composition, the blue background, the shape of the haloes, and the colour palette (i.e. blue, red, white, and tawny) suggest a date between the 13th and 14th century.⁴³

42 We wish to thank Christian Luczanits for the information regarding the use of leonine brackets in the early temples of Ladakh as well as for his stylistic analysis of the lions of Dangkhar.

43 We are again indebted to Christian Luczanits for the stylistic analysis of these murals and for suggesting a Kagyü (Tib. *bKa' brgyud*) or even Drikung Kagyü (Tib. '*Bris gung bKa' brgyud*) context. The closest stylistic comparison can be seen inside the Shangrong temple at Alchi.



160 The leonine wooden bracket at the corner of the gateway on the north-eastern facade. LN 2010.



161 The space behind the window. CA 2011.

162 Niche on the south-eastern wall. CA 2011.

163 Opposite sidewall of the niche. CA 2011.

The left sidewall of the niche is entirely covered with the representation of a blue four-armed Mahākāla carrying in his principal pair of hands a vajra chopper and a skull cup. While he holds a trident (Skt. *triśūla*) in his second left hand, the attribute of the second right hand is no longer visible, but can be confidently asserted to be a sword. On the right sidewall, a set of six figures disposed in two rows shows the attendants of Mahākāla; only two of them clearly visible. Among these figures with zoomorphic faces, the one situated in the upper right corner can be identified as a representation of Raven-faced Mahākāla.⁴⁴

As for the front wall, traces of painting in the upper part and left hand corner points towards the presence of a single deity as the outline of a large *vesica piscis* suggests. Emerging from behind the aureole, two red branches bearing bodhi leaves develop towards the left.⁴⁵ A few other floral elements are represented on the left side of the wall. Finally, the wooden ceiling of the niche, which might have been replaced over the years, does not bear any traces of painting. The niche also served as a votive deposit place for hundreds of stupa clay miniatures (Tib. *tsha tsha*). On the whole, the rather confused architectural state of this gateway stupa raises more questions than it answers. Following Nepalese and Tibetan conventions, a depiction of Mahākāla would traditionally be located at the temple's entrance; as a dharmapāla, he functions as a protector and guardian. The purpose of the niche and its murals, and their function within the original structure cannot be established, given their present condition. In addition, the reuse of the leonine wooden brackets does not simplify the interpretation of this structure, and its initial appearance may now be difficult to determine.

44 This iconographical treatment seems to conform to the manifestation of Mahākāla Caturbhūja (Tib. *Ye shes mgon po phyag bzhi pa*) as it was established by the time of the later diffusion; see BRAUEN and WILSON 2000.

45 Due to the shape of the halo and the presence of the bodhi leaves, it is tempting to speculate that the main deity depicted is none other than the historical Buddha, Śākyamuni.



164 Mahākāla's attendants. LN 2011.



165 Mahākāla Caturbhūja. LN 2011.

PATERNAL CLANS

Based on Lyall's earlier observations, Francke records the names of six paternal clans which, in Spiti, may also be termed father-son clans, bone-lineages, or even paternal bone-lineages in Dangkhar.⁴⁶ This notion of paternal family lineage has been documented by various researchers and shows some commonalities throughout the Western Himalayas.⁴⁷

It is essentially an exogamic system ensuring a social cohesion and solidarity among a group of people living in proximity. The members of the same paternal clan tend to worship a common tutelary deity – literally father-deity – and are responsible for the organisation of the funeral rites and the cremation of their dead. This last point possibly explains the nature of the exogamic system where a male individual of a certain *pha rus* is not allowed to marry a woman of the same *pha rus*. Due to the polluting character of the dead body, the closest relatives of the deceased are bound by funereal prohibitions. The other members of the group must take care of the body and perform the cremation as a clan duty. Eventually, it alleviates the burden of loss for the closest relatives, both psychologically and financially, since the cost of the funeral is shared among all the members of a single *phas ru*. For that reason, consanguineous marriages and marriages within a *phas rus* were prohibited and punished by local law, according to Joseph Gergan who visited Spiti in the early 1920s.⁴⁸

Until quite recently the judicial enforcement of this rule was the responsibility of the main Governor. According to interviews conducted in 2011, the previous Governor of Spiti still administrated justice in the valley; the exogamy rule was probably followed more strictly than nowadays.⁴⁹ Despite the information recorded by Francke, Gergan, and others, about the family names and paternal clans of Spiti, the distribution of those names for the territory of Dangkhar has not been established with certainty yet. The historical interest of these names lies in the fact that they are believed to indicate the geographical provenance of these groups (indigenous vs. exogenous) and may occasionally pop up in some historical documents, epigraphical inscriptions, or wall-paintings all over West Tibet.

46 See FRANCKE 1914.

47 See BRAUEN 1979.

48 See DE ROSSI FILIBECK 2002.

49 The origin of these governors, whether they belonged to a local aristocracy or were descended from the court of Ladakh, remains unclear. In the 19th century, two small governors (Tib. *cho ta* [sic] *no no*) and a main governor and judge (Tib. *khrims dpon*) administered the Spiti valley. The places of their jurisdiction were Gyuling (Tib. *rGyu gling*), Mani, and Dangkhar. The last of the three came to be viewed as the centre of legal authority and power for the whole valley, therefore assuming tardily the role of a capital (Tib. *rgyal sa*), especially since the governors (Tib. *no no*) were “entitled to be called *rgyal-po* or king”, as Luciano Petech has remarked; see PETECH 1977.

With regard to our research a few remarks can, however, be formulated.⁵⁰ The most important paternal family lineage in Dangkhār today is the minister family, which was reported by Francke and Gergan as the great minister family. The minister who resided in Dangkhār in the 18th century were not only functionaries of the Ladakhi administration but also castellans.⁵¹

As for the governors of Spiti, the origin of these ministers and castellans of Dangkhār cannot be established with certainty at present.⁵² For instance, the earliest reference to a minister living in Dangkhār is from the 15th century, hence predating any possible Ladakhi influence. Among the other high-status paternal family lineages of Dangkhār, a mention should be made of the Am chi (doctors) as well as the Jowa Drum Karpo's (Tib. *Jo ba 'brum dkar po*) clan; the latter was described to us as a family of tantric practitioners of the Nyingma (Tib. *rNying ma*) tradition.⁵³ Among the other family lineages reported by oral tradition, the Bēda (Tib. *Be da*) of Spiti and the Garwa (Tib. *mGar ba*) from Dangkhār were already acknowledged by Gergan in his *Bla dwags rgyal rabs 'chi med gter*. The unusual description of these two groups seems to have escaped the attention of Elena De Rossi Filibeck who left untranslated two lines of subchapter 3:⁵⁴

སྤྱི་ཉི་ཤ་རྩ་བཙོ་ མཐའ་གྱི་བེ་དེ་ཡིན་ནོ། ལུང་གི་སྣ་ལོ་ཅན་གྱི་བརྒྱུད་ལས་བྲང་མཐའ་
གྱི་མགར་བ་དེ་ཡིན་ཟེར་ནོ།

The Be da are the grooms of the people of Spiti. The family lineage wearing conch shell earrings are said to be the mGar ba of Brang mkhar (Dangkhār).

50 The chart below is an attempt to organize and compare the information collected on paternal family lineages. It must be noted that in addition to the five paternal clans given by Gergan, the author also extracts a list of thirty-six *rus pa* from the *Lha nyi ma'i gdung brgyud* text; see DE ROSSI FILIBECK 2002.

rus pa / pha rus / rigs rus in Brag-mkhar (or in Spiti)			
	Lyall - Francke	J. Gergan	Interviews 2011
1			No no
2	Blon chen pa	Blon chen pa	Blon po
3	rGya zhing pa	rGyan shing pa	Am chi
4	Khyung po	gNam ru pa	Jo ba 'brum dkar po
5	sNyegs pa	Tum bo pa	thun mong gi rigs rgyud
6	Henir	Nil 'gro ba	Be da
7	Nandu	Rum pa	mGar ba

51 See JAHODA 2009.

52 The title *slob dpon* appears a few times in the monastic documents computerized this year. See BmK01 below.

53 Though a follower of the Nyingma tradition, one of the youngest members of the Jo ba 'brum dkar po family recently became a dGe bshes lha rams pa (the highest grade of Buddhist "doctorate") in the Gelugpa school. We suspect this family lineage to be somewhat related to the *khyung po* or *gnam ru pa*; two clan names that may suggest pre-Buddhist origins.

54 See DE ROSSI FILIBECK 2002.

55 Sic; for *bcos*.



166 Detail of the consecration-banquet scene. Upper temple. LN 2011.



167 Detail of the consecration-banquet scene. Upper temple. LN 2011.

These two groups, which are found in Spiti, Kinnaur, Ladakh, and Lahaul, represent the lowest social strata in the Tibetanized Western Himalayas. It is, however, curious that Gergan describes the *Be da* as grooms since they usually constitute a caste of professional musicians who play an oboe-like instrument called *sur na*.⁵⁶ It is remarkable, and it is rather unclear why Gergan specifically associates the Garwa with the area of Dangkhār. The members of this group are traditionally blacksmiths or kettledrum players.⁵⁷

The establishment of a local court at Dangkhār may somehow explain this situation. For Christian Jahoda, the development and popularisation of traditional music and dance in Spiti could follow “a model established and practiced in the sphere of royal culture in the kingdom of Ladakh” where low caste groups, such as the *Be da* and *mGar ba*, found their primary function in courtly performances.⁵⁸

This model finds its artistic expression in a remarkable wall painting inside the upper temple (Tib. *lha khang gong ma*) of Dangkhār monastery. Situated on the lower frieze of the north wall, the scene depicts the court of Spiti at a lavish banquet. Two groups of women fully adorned with traditional jewels, headdresses, and garments are dancing to the sound of drums, oboes, and lutes, while horseriding envoys punctuate the lower part of the scene.

Finally, the common family lineages are agriculturalists who own fields and practice animal husbandry. They seem to be related to the large field owners observed by Lyall, Francke, and Gergan. This last includes both small householders and large householders, who can be members of the same *pha rus*, when the many sons of a large family do not inherit family wealth equally. As for the administration of Dangkhār, two village headmen oversee the village council. They are elected, one each, from the *khang chen* and the *khang chung* groups for a period of three years.⁵⁹

56 A musical instrument close to the Tibetan *rgyal gling*.

57 Garwa are viewed as belonging to the lowest of all the social strata in Spiti. Nowadays, however, the government policy of reservations (affirmative action) may have improved the social status of some individuals. Personal communication with rGan dPal ldan, July 2011.

58 See JAHODA 2009

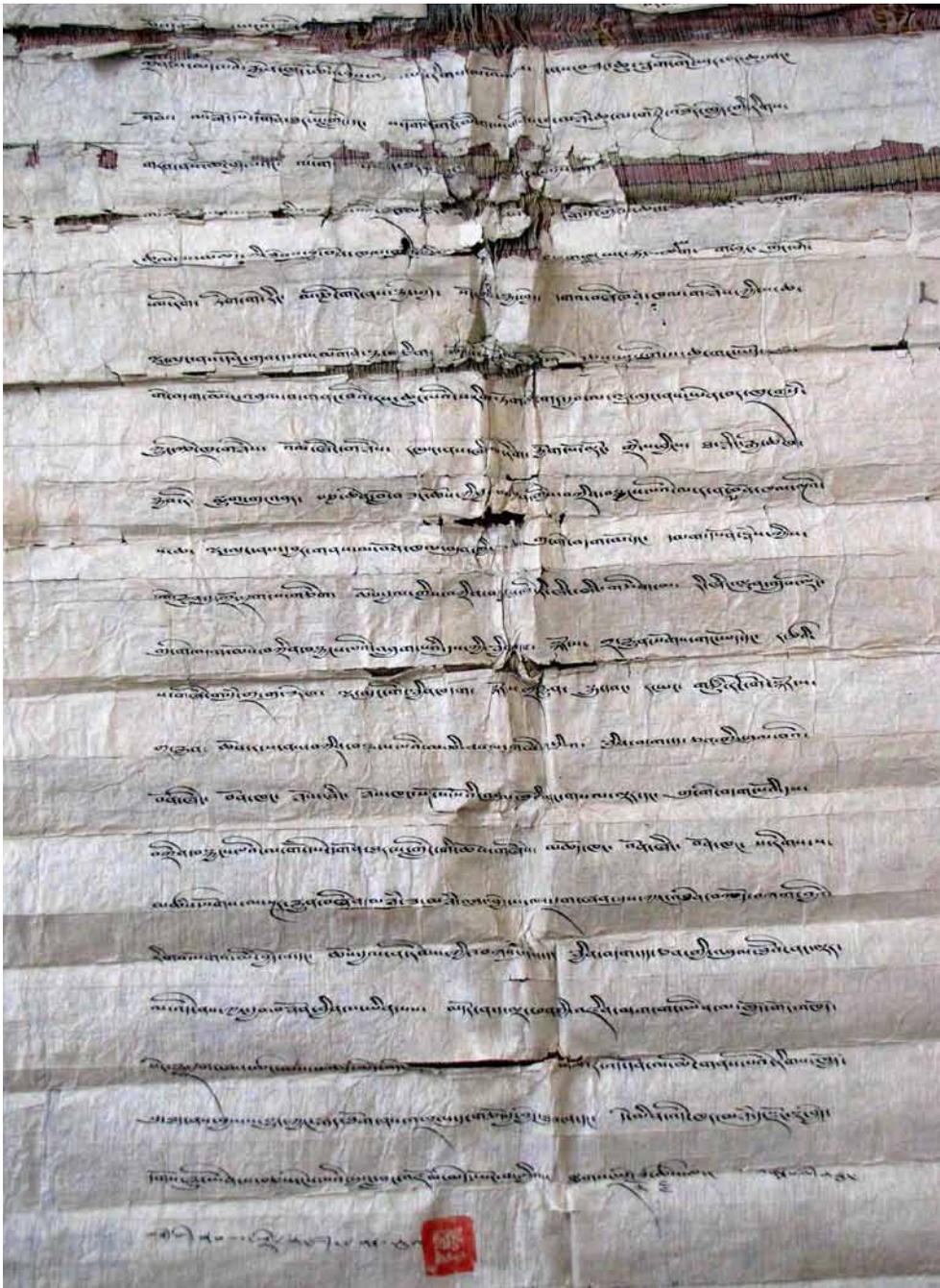
59 According to Gergan, the chieftain of a village is a minor headman (Tib. *rgad po chung*), while the authority of a district is a major headman (Tib. *rgad po chen*); see DE ROSSI FILIBECK 2002.



168 Su na player. Upper temple. LN 2011.



169 Drum players. Upper temple. LN 2011.



170 BmK01 is an official edict made of very thin paper which was lately glued on a piece of material in order to be preserved. The edict is composed of twenty-six lines in 'bru tsha style. The last line preceding the official red seal is written in 'khyug yig style and is, alas, partly illegible. The translation work could not have been realised without the generous help of rGan rDo rje bsod nam, rGan Byang chub, rGan bKra shis, and rGan dPal ldan from Dangkhar Monastery. LN 2011.

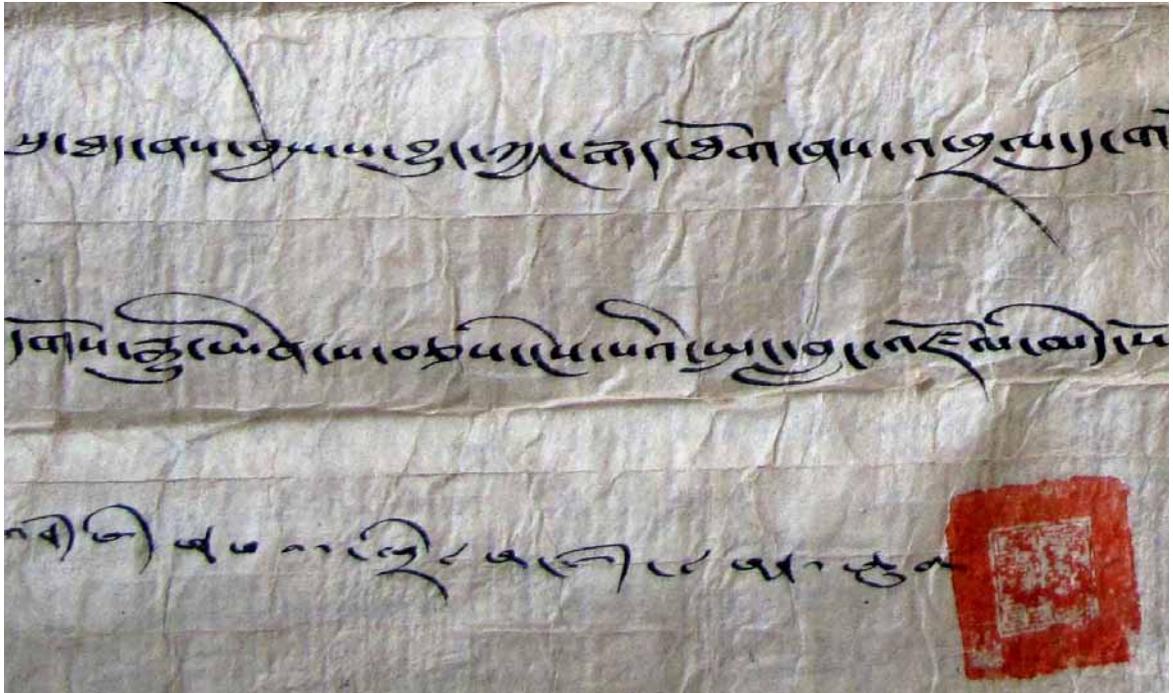
MONASTIC DOCUMENTS PERTAINING TO DANGKHAR MONASTERY

We were fortunate to be entrusted by the administration of Dangkhar Monastery with a bag full of documents pertaining to various monastic issues.⁶⁰ Most of these documents are edicts and official letters, often stamped with the seal of the authority that issued them. A first selection was made on the basis of the handwriting, the paper quality, and the content of the colophon. Ten of these documents were then photographed and digitalized with the help of the local community. One of these has been translated and succinctly annotated, and is presented below. Almost all of these documents are written in cursive styles, either in *'bru tsha* or in *'khyug yig*. As for the language, it is primarily monastic classical Tibetan with the strong influence of *spi ti skad*, the local Tibetan dialect. As is often the case with such material, grammar and spelling are arbitrary. For this reason, the computerization and study of these documents required the help of some senior monks from Dangkhar, the youngest generation of monks often having difficulties in understanding idiomatic expressions or issues no longer extant.

These documents were catalogued as BmK01, 02, 03 etc.⁶¹ Due to the peculiarity of the language and the specificity of the subject matter, the study of the remaining documents cannot be done without the collaboration of the monks from Dangkhar Monastery, as was the case with BmK01.

60 We wish to express our deepest gratitude to Phyang mdzod rGan Tshe ring for handing us over to computerize and to study these documents.

61 The abbreviation BmK stands for Brag mkhar (Dangkhar).



171 BmK 01 - Detail. LN 2011.

TIBETAN TEXT

- ༡ དབྱ་མཛད། ས་དགོན་གོག་མིག་པའི་ཁྱུ་ⁱ.....
- ༢ ཚོས་གཞིས་ར་སྤངས་ཀྱི་གྲམས་མོ་འོ་དེབ་.....གསར་འདོན་བྱས་པ་ལ་
- ༣ འདེན་ས་མེད་པའི་རྒྱན་ཚོད་ཚོས་བྱས་འདུག་པ་དེ་རིགས་མ་འོས་པས། ད་ནས་བཟུང་ཚུ་སྤྲུག་གི་ཡུར་བར་རྒྱ་གད་
- ༤ ལོ་མ། ལ་སློ་དཔེ་དགོན་ཐར་ས་སྐྱེད་དང་། ས་དགོན་གོང་མིག་ས་གཉིས་རྒྱ་མཉམ་རྒྱ་མ་གཏོགས་འཐེང་ཁྱེད་ཀྱི་རིགས་
- ༥ གཏན་ནས་མི་བྱེད་པ་དང་། ལ་གམོ་ⁱⁱ.....ད་ཐར་.....ⁱⁱⁱམྱོ་ན་ⁱⁱⁱསངས་རྒྱས་འོད་ཟེང་^{iv}བྱིས་གསར་རྒྱག་བྱས་པའི་
- ༦ ལྷ་གོ་ཚོས་རྒྱལ་ནས་འདིན་^vབརྒྱངས་པའི་བྲང་མཁར་.....གཞི་.....པ་གསུམ་གྱི་ས་ཆ་དང་.....རྒྱའི་གྲ་གྲ་
- ༧ རྒྱ་ལུང་ནས་མཚོད་ཀྱི་ཐེབས་སུ་བོན་ཁལ་གསུམ་གྱི་ས་ཆ་.....དག་ཞིང་ཁ་ཡང་སྤྲ་གཅིག་གོ་བྱུང་། ལྷ་གོ་གི།
- ༨ ལ་རིག་ཉིག་གོ་རིང་། མ་ཉེ་གོང་ནས་སྤྱུ་བྱེད། མོང་^{vi}བགྲིས་སྤྱུ་བྱེད། དགའ་བཞེ་བོན་ཁལ་གཉིས་ཀྱི་ས་ཆ་
- ༩ ལྷ་ལུང་ནས་དོན་གྲུབ་དཔལ་མགོན་སྤྲ་གཅིག་ཚོགས་པ་རང་གིས་ཉོས་པའི་བཅས་སྤྱང་གི་ས་ཆ་གང་ཡོད། ལྷ་
- ༡༠ གོ་བཤག་མོས་འབྲུལ་བ་གནང་བའི་རས་རྒྱང་པའི་ས་རིགས་ཉོག་ཅེ་^{vii}གར་རྒྱབ་ལ་ལྷ་ལུང་ནས་སྤེན་བར་ཁྲ་གསུམ་

ⁱ A X indicates an unknown or unreadable root letter (*ming gzhi*) and can be preceded by a prefix or followed a suffix, post-suffix, super-fix, sub-joined letter, or one of the four vowels if they appear to be readable.

ⁱⁱ ལ་སློ་དཔེ་དགོན་ཐར་ས་སྐྱེད་

ⁱⁱⁱ མྱོ་ན་

^{iv} ཟེང་

^v Sic; for བགྲིན་

^{vi} Sic; for མོང་ ?

TRANSLATION

1. The Abbot: The Sa skya monastery of Gog mig¹ [...]
2. the religious administration unit, the riversides of Ra spang [...] in order to implement the new [...]
3. the conditions are lacking due to your inappropriate ways. From today onwards, (regarding) the spring and water supply
4. set on the land belonging to either La sgod dpe Monastery of Thar sa gling² or Sa skya monastery of Gong mig, none of the commonly shared rivulets
5. shall be diverted for one's own benefit. The minister Sangs rgyas 'od zer of La sgod dpe monastery of Thar sa gling repaired it.
6. The Dharma King of Gu ge extended his kindness to Brang mkhar by [...] of three plots of land and [...] the riversides.
7. At the offering time³, three measures of crops from the plot [...] the full harvest of those fields: Go byang, Gung gi,
8. A rig, Tig go ring (shall be supplied). From Upper Mani⁴ half of the harvest (shall be supplied). From the Song bkra shis (family) half of the harvest. From the dGa' bzhi (family) two measures of crops from their plots.
9. From Lha lung, the full harvest of the Don grub dpal mgon (household). The monastic community purchased the full area of bCas spang⁵.
10. The Lady Sovereign from Guge donated the hoeing plots of the Ras chung pa. From Lha lung, the sPen bar's fields Khra⁶ gsum

1 The Sakya monastery of Gog mig (or Gong mig) was possibly founded or enlarged by Gu ge Chos dpal bzang po, a biographer and disciple of Ngor chen kun dga' bzang po (1382 - 1456), in the first half of the 15th century. It later received the name of sTeng rgyud Monastery and eventually became a dependency (*dgon pa'i yan lag*) of Mang spro Monastery (also Ma spro or Ma sro) in Ladakh. I wish to thank Jörg Heimbels for shedding light on this matter; see HEIMBEL 2011 and CHOS DUNG DKAR PO 2010. The remains of the old Gog mig Monastery are situated about 3.5 to 4 kilometers north-west of Kaza.

2 Another name for Dangkhar Monastery.

3 The offering of annual donations (*mchod thebs kyi ma rtsa*) to Dangkhar Monastery takes place on the 15th of the 1st Tibetan month. It usually includes both money and goods.

4 Mani gong ma is located about 6.5 kilometres south-west from Dangkhar. It overlooks the Spiti River which changes orientation and flows westwards.

5 This area is located roughly 1.5 kilometres directly uphill from the new monastery of Dangkhar, north-east of the lake, at an elevation of more than 4150m. It is still used as grazing land for the village flocks.

6 *khra* can also mean a precious stone ring in *spi ti skad* dialect.

- ११ ཡུང་ཅེ་ཁ་གཉིས། འོ་ལ་ཞིང་གཉིས། ར་སྤང་ནས་ཞིང་རྩ་རིག་རྒྱུ་ལོ་ལྟོང་། གམ་པ་བྱིངས། ཐ་སྤྱང་རྒྱ་ཆེ་བ་
- १२ ལྷུག་རྩེ། ལྷུག་གྲུ་འབྲུང་། བཀ་ཆེན་ལྷོ་བཟང་ཆོས་ཀྱི་རྒྱལ་མཚན་གྱིས་བཀྱིན་བསྐྱེད་ས་པའི་ལ་ར་ནས་བོན་ཁལ་གྱི་འེ་
- १३ ས་ཆ། ལྷ་ལུང་ནས་དབྱར་གནས་ལ་བོན་ཁལ་བདུན་གྱི་ས་ཆ། གྲུ་གོ་བདག་ལོ་དང་། དམག་དཔོན་རྣམས་ཀྱིས་
- १༤ དགོ་རྒྱུན་དུ་ལྷོ་དྲག་པ་གཅིག་ཆོས་རྒྱལ་གྱིས་བཀྱིན་བསྐྱེད་ས་པའི་རི་ཞིང་ཞིང་གཅིག་ལ། རི་ཞིང་ལྷན་གྲུབ་གྱིང་།
- १༥ གྲུ་གོ་བདག་ལོས་བཀྱིན་བསྐྱེད་ས་པའི་འབྲུག་པའི་དུས་ཀྱི་སྤྱིན་བདག་རྣོང་ས། གྲུ་རྒྱུན་^{viii}སོགས་གང་ཡོད་དང་། ར་ཅའི་
- १༦ ས་གཞི་གསུམ་གྲུ་ཟེང་བ། ལྷ་ལུང་གི་སྤྱིན་བདག་རྣོང་ས་གྲུ་རྒྱུན་^{ix}རྒྱ་དབང་། ར་སྤང་། གཞུང་རང་གི་རྣོང་ར་
- १༧ གྲུ་རྒྱུན། ཆོས་ར་ས་ནས་བཀྱིན་བསྐྱེད་ས་པའི་མ་ཉི་ནས་ས་བཞི་གཅིག་སྤྱིན་བདག་དང་ཅན་གྱི་ལུལ་པའི་
- १༨ བོན་ཞིང་། བོན་ཁང་། ཉོས་ཞིང་། ཉོས་ཁང་སོགས་སོ་སོའི་འབྲུལ་ཐོའི་ནང་གསལ་ལྟར་དང་། གྲུ་གོ་བདག་པོའི་དུས་
- १༩ བཀྱིན་བསྐྱེད་ས་པའི་ལ་གོ་དཔེ་དགོན་ཐར་ས་གྱིང་གི་ཆོས་གཞིས། མཚོད་ཁང་། བོན་ཞིང་། བོན་ཁང་། ས་རིགས་ས་
- २༠ མཚན་སོགས་ལ་སྤར་རྒྱུན་བཞིན་མཉམ་ཟ་མཉམ་འབྲུང་བྱེད་པ་ལས་དྲག་ཞན་སྤུས་ཀྱང་འཐེན་བཙོང་བགག་གྱི་
- २༡ རིགས་སོགས་མི་བྱེད་པ་དང་། ཆོས་རྒྱལ་ན་རིམས་ཀྱི་བཀའ་ལོག་དང་། སྤྱིན་བདག་དང་ཅན་གྱི་འབྲུལ་ཐོའི་ནང་ལྟར་
- २२ ལ་འདི་ནས་ཀྱང་རྒྱལ་བསྐྱོན་^{xi}བྱིན་པ་ཡིན་པས། མདོར་ན་ད་ལྟ་ལྟར་གྱི་འཛིན་བདག་གང་ཡིན་ལ་ཁྱོད་གོང་འཁོད་

^{vii} Sic; or ཉོག་ཅེ་

^{viii} Sic; for གྲུ་རྒྱུན་

^{ix} Sic; for གྲུ་རྒྱུན་

^x Sic; for ས་གཞི་

11. the Kyung rtse's fields Khra gnyis and a clover field (were donated). From Ra spang, the (following) fields: rTsa rig, rKyog po ldong, Gram pa byings, the large Tha snying,
12. sKyab ri and sMyug gu 'bur (were donated). Pan chen Blo bzang chos kyi rgyal mtshan⁷ extended his kindness by offering five measures of crops from
13. the plots of La ra.⁸ From Lha lung, seven measures of crops from the plots (shall be supplied) for the summer retreat.⁹ The Lady Sovereign of Gu ge and the General(s)
14. meritoriously and repeatedly offered feasts. The Dharma King extended his kindness (by granting) fields on hill slopes: Zhing gcig ma and lHun grub lding.
15. The Lady Sovereign of Gu ge extended her kindness by being the patron during the 'Brug pa(s).¹⁰ During sKor sa,¹¹ a great number of monks would gather together¹²
16. at a site known as Ra tsa'i sa gzhi gsum gra gu. (Under) the patron of Lha lung, during sKor sa, a great number of monks would gather at sKru dbang, at Ra spang, and so would they at gTsum rang.¹³
17. Chos ra sa na extended his kindness by offering a site from Mani. The patron Dad can offered
18. crop field(s), granary house(s) and purchased field(s), house(s) and so forth as it is clearly established in the donation register. In the time of the Sovereign of Gu ge,
19. (the former) extended his kindness towards the administrative unit of La go dpe Monastery of Thar sa gling, its chapels, crop field(s), granary house(s), the land,
20. the boundaries and so forth. As formally, in order to keep on eating and drinking together, whoever, good or bad, supports quarrels
21. shall be stopped. The edict of the Dharma King's lineage and the donation register of the patron Dad can
22. provide no contradiction to this (matter). In short, whoever obtains or holds (land), as mentioned above,

7 The 4th Pan chen bla ma (1570 – 1662) was formally enthroned at Tholing on 2nd October 1618 where he met the court of Gu ge.

8 La ra is located about 22 kilometres south-west of Kaza.

9 Skt. vārṣika.

10 The 'Brug pa bKa' brgyud school established itself in the 13th century and became prevalent in the area of West Tibet by the 14th century.

11 sKor sa takes place on 15th day of the 4th Tibetan month (*sa ga zla ba*).

12 It is not clear what the term *grwa rgyun* exactly means in this context. Elsewhere, it usually designates a young monk who has come from far away to spend time in one of the great learning centres of Central Tibet. The monastic gatherings or ceremonies referred to in this document could also involve the presence of nuns.

13 Ra spang (modern Rama) and gTsum rang (modern Chabrang) are both situated upstream of the Lingti river in the direction of Lalung.

३३ སེར་སྐྱ་དག་ཞན་ཚང་མས་བཙོད་མེད་བདེ་བར་གནས་འཇུག་པ་དང་། བདལ་རེ་འདི་དོན་ལ་མི་གནས་པའི་རིགས་ཁྱོད་

३༤ སྐྱ་ཐད་ནས་བྱས་པ་བྱུང་ཀྱང་སྐར་མོག་^{xii}ནས་འཕམ་ཏུ་གཙོད་བྱ་བྱེད་བྱུབ་ན་དང་། དེ་མིན་འདི་ཁར་^{xiii}མཉམ་ཏུ་རྫོང་ཉ་^{xiv}བྱེད་

३༥ དགོས་རྒྱ་ཡིན་པ་བཅས་རེས་པའི་སྤང་བྱང་འཛོམ་མེད་ཡོང་བ་གྱིས།། ལྷགས་སྤྲེ་བླ་ ༣ ཆེས་ ༤^{xv} ལ།། གཞན་མཚོད་གཞུང་

३༦ གཤོད་མེད་ཞི་བ་འབྲེལ་ཞང་ཤོད་ལ་གནས་ཚུབ།།

^{xi} Sic; for ལྱལ་བསྐྱོལ་

^{xii} Sic; for སྐར་ཉོག

^{xiii} Sic; for འདི་གར་

^{xiv} Sic; for རྫོང་བར་ or maybe རྫོང་བདག ?

^{xv} The original document contains the number 4 twice, written on top of each other.

23. either monks and laymen, good or bad, shall abide in living happily and without discord. In addition to this, those not living (in harmony),

24. whoever they may be, shall be prosecuted at sGar tog at once.¹⁴ Moreover, here among us, the bearer of this message

25. shall do what is necessary to ensure the definite rejection and absence of all undesirable things. Iron-Monkey year, 3rd day of the 4th month.¹⁵ The government of [...]

26. [...].

14 Following the Tibet-Ladakh-Mughal War (1679 – 1684), the Government of Lhasa (*dGa' ldan pho brang*) was represented in West Tibet by two district commissioners (*sgar dpon*) who would reside at sGar tog for a period of three to six years. sGar tog was essentially a trading center where taxes were levied and from where tributes were sent to Central Tibet. In the early twentieth century it was opened to British trade.

15 The reference to the 4th Pan chen bla ma (1570 – 1662) provides a solid *terminus post quem* for this edict which must have been written in, or most likely after, 1620. Since it is clearly specified that litigation should be pursued at sGar tog, this document was probably composed after the signing of the Ladakh-Tibet treaty of 1684; see note 42. The Iron-Monkey years for the whole period concerned would be 1680, 1740, 1800, 1860, 1920, and 1980. This last year can be excluded almost for sure as the senior monks of Dangkhar would certainly remember the reading of this edict. More research based on the content of this document needs to be conducted to determine its exact calendar year.





5

THE UPPER TEMPLE OF DANGKHAR MONASTERY

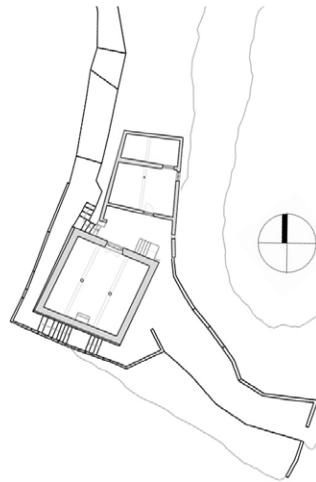


172 The upper temple above the main monastery building. View from south-west. LN 2010.

5 THE UPPER TEMPLE OF DANGKHAR MONASTERY

Lobsang Nyima Laurent

THE UPPER TEMPLE AND ITS ICONOGRAPHICAL PROGRAMME



THE UPPER TEMPLE: PHYSICAL DESCRIPTION

Overlooking the main building of Dangkhar monastery is a small chapel locally known as “*sna kha tshang*”, and which will hereafter be referred to as the upper temple (Tib. *lha khang gong ma*).¹

The edifice is a square in plan, measuring approximately 5.20 m x 5.20 m and 3.09 m in height. The interior of the upper temple is unfurnished except for a small altar-like table leaning against the south-western wall. A pair of wooden pillars (Tib. *ka ba*) and capitals (Tib. *ka mgo / ka gzu*) bear two central beams (Tib. *ka gzu gdung*) and support a ceiling made of lateral beams (Tib. *gdung ma*) and joists (Tib. *lcam shing*). A skylight (Tib. *gnam khung*) was adjusted in the middle of the roof and provides a dim source of light for the room. In order to prevent water infiltration, a corrugated iron roof was recently added on top of the traditional roofing. Facing the entrance to the north-east is a two room building which is in very poor condition. These rooms are no longer in use and their initial functions can only be inferred as having been some kind of maintenance or storage rooms.

1 On the 15th July 1933, when Tucci’s expedition arrived at Dangkhar, Ghersi registered the name of *nang ga tshang* for the upper temple. He also noted the presence of many bronzes and wooden statues crowded inside the room; see TUCCI 1935: 51-52.

During our fieldwork in 2010 and 2011, the exact Tibetan spelling could not be asserted by the monks from Dangkhar. Thus said, they were confident that the oral designation refers to the extreme variety of iconographical themes depicted inside the chapel. We have hence adopted the following spelling *sna kha tshang* as, the place (Tib. *tshang*) housing a great variety (Tib. *sna kha*) of images, although this term does not appear in classical Tibetan lexicography. This unusual toponym does not only underline the unclear relation of that edifice vis-à-vis the rest of the monastery but also suggests that people from Dangkhar, both lay and monastic, had long forgotten its primary function. These days, a single butter lamp is offered daily by a monk or a lay person at dusk.

THE MURALS OF THE UPPER TEMPLE: GENERAL DESCRIPTION

Inside the chapel, richly ornamented murals were executed on the surface of the walls with the exception of a 0.46m wide area above the floor. Decorative elements were also included in the process. Right below the ceiling, a wall-painted hanging frieze (Tib. *sham bu*) with lion faces (Skt. *simhamukha*) runs on the four sides of the room [No.1], and corners are decorated with painted hanging banners (Tib. *ka 'phan*) creating an overall impression of a ceremonial room. The lower register of the murals is delimited by a minutely depicted frieze on the south-eastern, south-western, and north-western walls. Later in time, the frieze was bordered with a tricoloured band underneath (i.e. white, yellow, and red) and a single red band above, which singles out the frieze noticeably from the rest of the composition. As for the upper register of these murals, it is dominated by thirteen figures of almost life-size dimensions. They are surrounded by a multitude of smaller iconographical figures and integrated into a background of luxuriant foliage.

The murals were executed *a secco* on a ground made of white gypsum using animal glue as a binder.² Large areas have flaked off over time resulting in important loss of paint. In addition, the structural deficiencies of the building and mechanical stress have facilitated the formation of cracks, voids, rising dampness at the floor level, and water infiltration from the roof; particularly under the load-bearing beams of the ceiling.

The extent of damage on the wall-paintings must have been significant as restoration work was conducted some time during the 20th century.³ Entire figures were then painted over with very rudimentary skills and crude materials (e.g. the representation of Buddha Śākyamuni on the south-western wall [No.10a]). These restoration attempts were likely carried out by local residents who must have had little training and almost no artistic understanding of the iconographical themes depicted in front of them. A careful observation of these restored areas shows that the people involved did not recognise minimal formal units (i.e. hand attributes, gestures, colour, etc.) within a specific scheme and consequently were not able to restore the missing elements of a particular theme.⁴

Despite the present state of preservation of these murals, more than 85% of the 232 iconographical types depicted on the walls of the upper temple were satisfactorily identified.⁵ They consist of Buddhas, Bodhisattvas, meditational, mundane and supra-mundane deities, historical figures, and symbolic representations. The profusion of iconographical themes and their seemingly chaotic organisation within the chapel raises the issue not only of its aesthetic programme but also the questions of its functionality and patronage.

2 For painting technology and analysis; see "PAINTING TECHNOLOGY" on page 253.

3 Chrome yellow (PbCrO₄) and barite (BaSO₄) were found among the pigments applied; see "TECHNICAL STUDY OF WALL PAINTING" on page 272.

4 On the north-western wall, three figures from a group of eight [No.4a-h] were repainted as Gelugpa scholars [No.4b, 4c] headed by Tsongkhapa [No.4d] while they should have been identified as the Indian paṇḍita Āryadeva, Asaṅga, and Vasubandhu, who belong to a well-known group called the six ornaments and the two excellent ones (Tib. *rgyan drug mchog gnyis*), as the presence of Nāgārjuna [No.4a], the expounding-debating postures and the traditional red hats of the remaining figures clearly establish.

Also, the right side of the north-eastern wall shows a devastating attempt to repaint a representation of Śrīmatī Pārvatī Rājīnī with her attendants [No.23]. While Śrī Devī is flanked to her left by two of the goddesses of the four seasons (Tib. *dus bzhi'i lha mo*) [No.24] and Siṃhamukhī [No.25b], a large area to her right was filled with an unrealistic landscape and a deep blue sky. It seems reasonable to suggest that the poorly restored area was once occupied by the two missing season goddesses (i.e. the spring and summer goddesses) and Makaramukhī holding the reins of the queen's mule, according to a well-known iconographical scheme.

5 The figures represented within the narrative scenes were not taken into account.

PICTORIAL ORGANISATION

The following presentation is therefore based on the premise that the iconographical programme of the upper temple represents a whole, which is coherent in its intention and organised around pre-established themes. The singularity of its composition must however comply with general characteristics specific to Tibetan temples (Tib. *lha khang*); namely the main recipients of worship are represented on the wall facing the entrance while the protectors and guardians are depicted on both sides of the door. It is worth noting that a figure, or iconographical type, is never repeated although various aspects of the same deity can occasionally be found. They always correspond to different manifestations (Tib. *sprul pa*) and therefore express different meanings or intentions.⁶

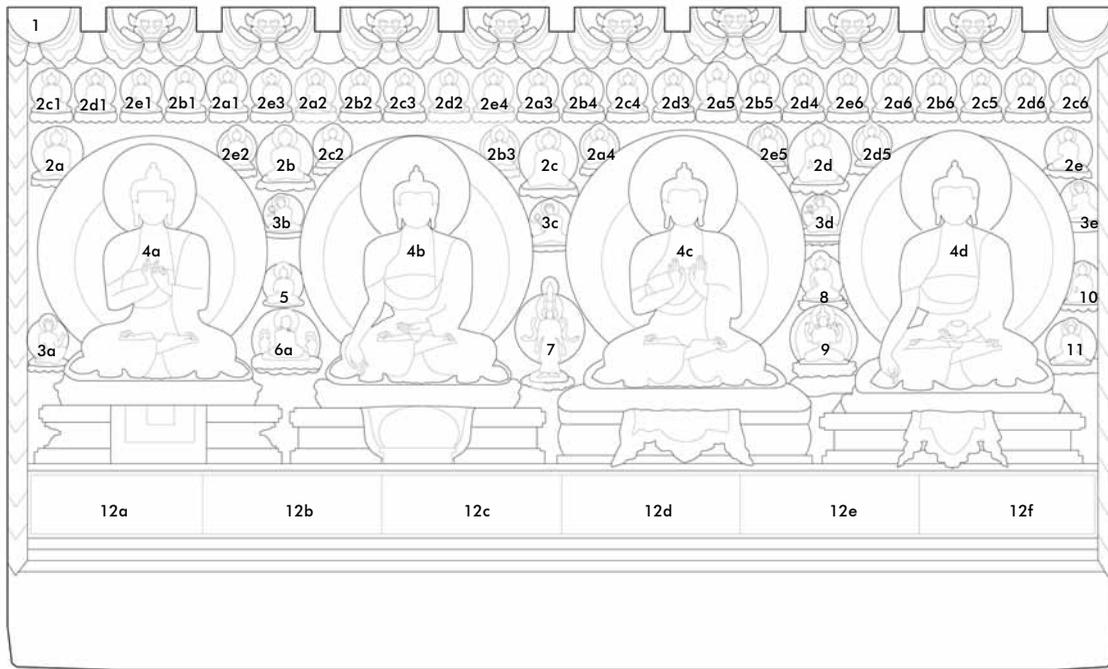
Furthermore, the pictorial organisation of a single wall tends to follow specific spatial patterns which often involve a certain degree of symmetry or mirroring; even though figures represented on the same wall may be grouped under different, yet sometimes overlapping, categories. We shall first review each wall separately and highlight its general organisation. A detailed inventory of all the figures and their Sanskrit and Tibetan equivalents is given as an appendix.⁷

6 For these reasons, the figure of Vajrapāṇi [No.21], which was recently repainted on the north-eastern wall, is an interpretation mistake from the side of the restorers as it already appears as part of the initial programme on the north-western wall [No.15]. Besides, it occupies the area where the spring and summer goddesses were most certainly portrayed.

7 See "DETAILED INVENTORY OF THE ICONOGRAPHICAL PROGRAMM" on page 309.



173 Inside of the upper temple, southern corner. HN 2010.



174 Numeric code of the south-eastern wall. TU Graz 2013.

ICONOGRAPHICAL INVENTORY OF THE SOUTH-EASTERN WALL

- | | |
|--|--|
| <p>1. Wall-painted hanging with lion faces (Tib. <i>sham bu</i>)</p> <p>2. The thirty-five confession Buddhas grouped around the five family conquerors</p> <p>2a Amogasiddhi (Tib. <i>Don yod grub pa</i>)</p> <p>2b Amitābha (Tib. <i>'Od dpag med</i>)</p> <p>2c Ratnasambhava (Tib. <i>Rin chen 'byung gnas</i>)</p> <p>2d Akṣobhya (Tib. <i>Mi bskyod pa</i>)</p> <p>2e Vairocana (Tib. <i>rNam par snang mdzad</i>)</p> <p>3. The five family conquerors' consorts</p> <p>3a Śamaya Tārā (Tib. <i>Dam tshig sgrol ma</i>)</p> <p>3b Pāṇḍaravāsīnī (Tib. <i>Gos dkar sgrol ma</i>)</p> <p>3c Māmaki (Tib. <i>Mā ma ki</i>)</p> <p>3d Buddha Locana (Tib. <i>Sangs rgyas spyan ma</i>)</p> <p>3e Vajradhātviśvarī (Tib. <i>rDo rje dbyings phyug ma</i>)</p> <p>4. Four of the eight Medicine Buddhas</p> <p>4a Sunāman (Tib. <i>mThsan legs</i>)</p> <p>4b Ratnacandra (Tib. <i>Rin chen zla ba</i>)</p> <p>4c Dharmakīrtisāgaraghoṣa (Tib. <i>Chos srag rgya mdzad pa'i Sangs rgyas</i>)</p> <p>4d Bhaiṣajyaguru (Tib. <i>Sangs rgyas sMan bla</i>)</p> | <p>5. Buddha making the hand gesture of fearlessness</p> <p>6. Guru Padmasambhava and consorts</p> <p>6a Padmasambhava (Tib. <i>Gu ru rin po che Pad m'byung gnas</i>)</p> <p>6b Mandāravā (Tib. <i>Man da ra ba me tog</i>)</p> <p>6c Yeshe Tsogyal (Tib. <i>Ye shes mtsho rgyal</i>)</p> <p>7. Ekādaśamukha Avalokiteśvara (Tib. <i>Thugs rje chen po bcu gcig zhal</i>)</p> <p>8. Buddha Amitābha (Tib. <i>Sangs rgyas 'Od dpag med</i>)</p> <p>9. Caturbhuja Avalokiteśvara (Tib. <i>sPyan ras gzigs phag bzhi pa</i>)</p> <p>10. Buddha making the hand gesture of generosity</p> <p>11. Amitāyus (Tib. <i>Tshe dpag med</i>)</p> <p>12. The first six deeds of Buddha Śākyamuni</p> <p>12a Remaining in and descent from Tuṣita heavenly realm</p> <p>12b Entering into Queen Māyādevī's womb</p> <p>12c Taking birth</p> <p>12d Becoming skilled in worldly arts and demonstrating physical prowess</p> <p>12e Enjoying a retinue of queens and a life of pleasures</p> <p>12f Renouncing the world</p> |
|--|--|



175 Picture montage of the south-eastern wall. TU Graz 2012.

THE SOUTH-EASTERN WALL

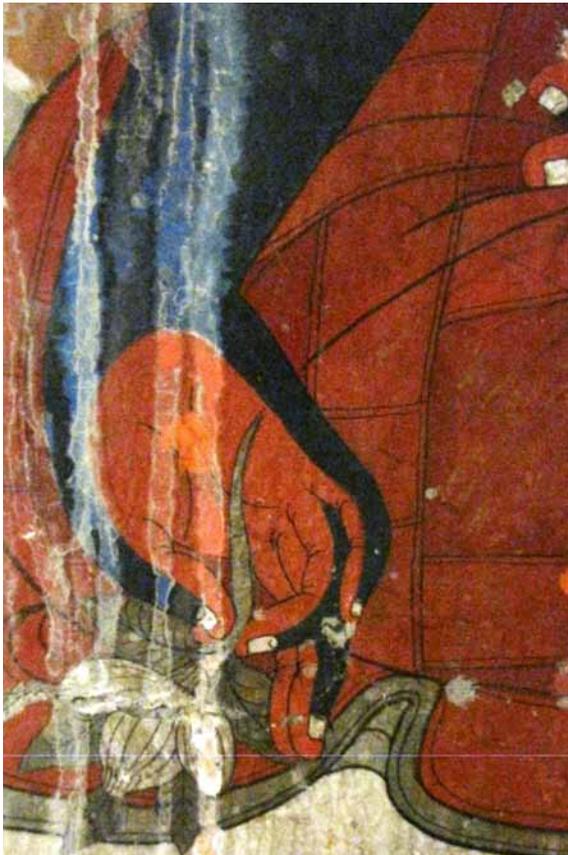
The south-eastern wall provides a good example of pictorial spatial organisation as well as problems encountered by the painters. It is located to the left of the entrance and it gives the normal reading orientation of the room. The lower part of the wall-painting is occupied by a narrative frieze, or more accurately perhaps, a graphic narration of the twelve deeds of Buddha Śākyamuni (Tib. *sangs rgyas mchog gi sprul pa'i skus 'jig rten du mdzad pa bcu gnyis*) which shows the first six episodes of his life [No.12a-f]; the remaining six deeds are depicted within the frieze of the north-western wall.

The organisation of the rest of the wall-paintings is centred around four of the eight life-sized Medicine Buddhas (Tib. *sman bla de gshegs brgyad*) [No.4a-d]; the last four being depicted, together with the remaining episodes of Śākyamuni's life, on the north-western wall. The spacing and the gap between them create lower and upper registers. The upper register is devoted entirely to the thirty-five confession Buddhas (Tib. *ltung bshags kyi sangs rgyas so lnga*) [No.2] who are lined up and syntagmatically grouped around the five family conquerors (Tib. *rgyal ba rigs lnga*) [No.2a-2d].⁸

⁸ The iconographical theme of the thirty-five confession Buddhas is the artistic representation of an early sūtra known as *Phung po gsum pa'i mdo* in Tibetan (Skt. *Triskhandadharmasūtra*). Different systems of depiction are reported in Tibetan and Himalayan art based on commentarial treaties composed by Tibetan scholars such as Sa skya Paṇḍita (1182 – 1251) or Tsongkhapa (1357 – 1419) to name only the two most influential commentators. The iconographical differences between these systems of depiction rest essentially on the opposition between hand gestures (Tib. *phyag rgya*) and hand attributes (Tib. *phyag mtshan*).

The figures of the latter group, slightly bigger in size, are located on either side of the Medicine Buddhas' mandorlas and their consorts are represented right below them, with the exception of Amogasiddhi's consort [No.3a] who was intentionally placed in the lower register due to lack of space between the mandorla and the left corner of the wall.

The iconographical scheme chosen for the upper temple seems to conform to Sa skya Paṇḍita's text in which he describes the thirty-five Buddhas being divided into five groups of seven each. Each group is associated with a Jina and displays the same colour and hand gesture. The presence of the five conquerors' consorts is however not attested in Kun dga' rgyal mtshan's short commentary and does constitute an artistic innovation; see *Sa skya bka' 'bum, Phung po gsum pa'i mdo 'don thabs bzhugs*, vol.12, fols. 450-452. Since the iconographical programme of the chapel is overtly Gelugpa in essence, it is therefore surprising that the scheme adopted does not follow Tsongkhapa's system of depiction (i.e. with hand attributes). It seems unlikely that this choice can be attributed to the patron, as we shall see, and must consequently reflect the painters' artistic affiliation. Finally, and from a technical point of view, we can observe a small discrepancy between the colours employed for the Jinās and those applied to the groups of six Buddhas related to them (e.g. Ratnasambhava and entourage [No.2c and 2c1-5]).



176 Bhaisajyaguru holding a stem of myrobalan (Lat. *Terminalia chebula*), No 4d. LN 2011.



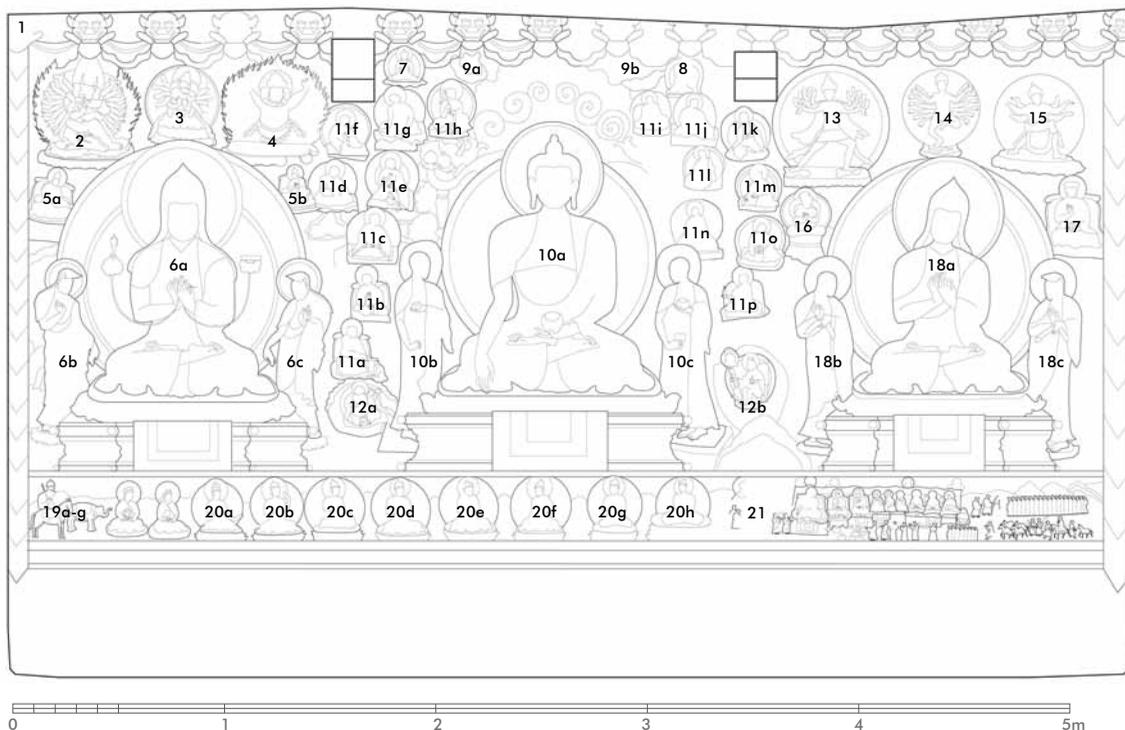
177 Four-armed Avalokiteśvara, No 9. LN 2011.

As for the lower register, it presents three pairs of figures inserted in the gaps between the Medicine Buddhas; namely Padmasambhava and consorts [No.6a-c], and a Buddha making the gesture of fearlessness above [No.5], four-armed Avalokiteśvara [No.9] and Amitābha [No.8], and finally Amitāyus [No.11] and a Buddha making the gesture of generosity [No.10].

This pattern composed of three pairs, which associates a figure with a Buddha above it, is however interrupted by a single Ekādaśamukha Avalokiteśvara situated between the second and third Medicine Buddha [No.7]. The eleven-faced Avalokiteśvara was subject to an unsuccessful restoration and it is now difficult to establish whether it was part of the initial composition based on the photographic documentation. The syntagmatic relationship between these figures is therefore compromised and no theme could be confidently established for this lower register.



178 Padmasambhava and consorts, No 6a-c. LN 2011.



179 Numeric code of the south-western wall. TU Graz 2013.

ICONOGRAPHICAL INVENTORY OF THE SOUTH-WESTERN WALL

1. Wall-painted hanging with lion faces (Tib. *sham bu*)
- Meditational deities**
2. Vajrabhairava and consort VajrāVetāli (Tib. *rDo rje 'jigs byed dang rDo rje Ro lang ma*)
3. Guhyasamāja and consort Śpārasavajrā (Tib. *gSang ba 'dus pa dang Reg bya rdo rje ma*)
4. Hayagrīva (Tib. *rTa mgrin*)
- A pair of Gelugpa teachers**
- 5a. unidentified
- 5b. unidentified
- 6. Father and spiritual heirs**
- 6a. Tsongkhapa (Tib. *rje Rin po che Tsong kha pa blo bzang grags pa*)
- 6b. Gyaltsap Je (Tib. *rGyal tshab rje Dar ma rin chen*)
- 6c. Khedrup Je (Tib. *mKhas grub rje dGe legs dpal bzang po*)
7. Primordial Buddha (Tib. *Kun tu bzang po*)
8. unidentified
- 9. Celestial nymphs**
- 9a. Apsaras (Tib. *mchod pa'i lha mo*)
- 9b. Apsaras (Tib. *mchod pa'i lha mo*)
- 10. The historical Buddha and his two main disciples**
- 10a. Buddha Śākyamuni (Tib. *Shākya thub pa*)
- 10b. Śāriputra (Tib. *Shā ri'i bu*)
- 10c. Maudgalyāyana (Tib. *Ma'u dgal gyi bu*)
- 11. The sixteen arhats**
- 11a. Gopaka (Tib. *sBed byed*)
- 11b. Bhadra (Tib. *bZang po*)
- 11c. Cūḍāpanthaka (Tib. *Lam phran btsan*)
- 11d. Bakula (Tib. *Ba ku la*)
- 11e. Kanakavtsa (Tib. *gSer be'u*)
- 11f. Vanavāsini (Tib. *Nags na gnas*)
- 11g. Vajriputra (Tib. *rDo rje mo'i bu*)
- 11h. Aṅgaja (Tib. *Yan lag 'byung*)
- 11i. Kanakabharadvāja (Tib. *Bha ra dhwa dza gser can*)
- 11j. Nāgasena (Tib. *Klu'i sde*)
- 11k. Panthaka (Tib. *Lam bstan*)
- 11l. Piṇḍolabharadvāja (Tib. *Bha ra dha dza bsod snyoms len*)
- 11m. Ajita (Tib. *Ma pham pa*)
- 11n. Kālīka (Tib. *Dus ldan*)
- 11o. Rāhula (Tib. *sGra gcan zin*)
- 11p. Abhedha (Tib. *Mi phyed*)



180 Picture montage of the south-western wall. TU Graz 2012.

12. The two attendants

- 12a Hwashang (Tib. *Hwa shang*)
- 12b Upāsaka Dharmatrāta (Tib. *dGe bsnyen Dharma*)

Meditational deities

- 13. Kālacakra and consort Viśvamāta
(Tib. *Dus kyi 'khor lo dang sNa tshogs yum*)
- 14. Hevajra and consort Vajranairātmyā
(Tib. *Kye rdo rje dang rDo rje bdag med mo*)
- 15. Cakrasaṃvara and consort Vajravāhārī
(Tib. *'Khor lo bde mchog dang rDo rje phag mo*)
- 16. Nāropā (Tib. *Nā ro pa*)
- 17. Tagtsangrepa (Tib. *sTag tshang ras pa O rgyan Ngag dbang rgya mtsho*)

18. Atiśa and his two main disciples

- 18a Atiśa Dīpaṅkara Śrījñāna (Tib. *Jo bo rje dPal ldan A ti sha*)
- 18b Dromtōnpa (Tib. *'Brom ston pa rgyal ba'i 'byung gnas*)
- 18c Ngok Lekpe Sherab (Tib. *rNgog lo tsā ba legs pa'i shes rabs*)

19. The seven precious possessions of a universal monarch

- 19a The precious general (Tib. *dmag dpon rin po che*)
- 19b The most precious horse (Tib. *rta mchog rin po che*)
- 19c The precious elephant (Tib. *glang po rin po che*)
- 19d The precious minister (Tib. *blon po rin po che*)
- 19e The precious jewel (Tib. *nor bur in poche*)
- 19f The precious queen (Tib. *bsun mo rin po che*)
- 19g The precious wheel (Tib. *'khor lo rin po che*)

20. The eight close sons or great bodhisattvas

- 20a Sarvanivaraṇaviṣkambhīn (Tib. *sGrip pa rnam sel*)
- 20b Avalokiteśvara (Tib. *sPyan ras gzigs*)
- 20c Vajrapāni (Tib. *Phyag na rdo rje*)
- 20d Mañjuśrī (Tib. *'Jam dpal byangs*)
- 20e Ākāśagarbha (Tib. *Nam mkha'i snying po*)
- 20f Samantabhadra (Tib. *Kun tu bzang po*)
- 20g Maitreya (Tib. *Byams pa mgon po*)
- 20h Kṣitigarbha (Tib. *Sa'i snying po*)

21. The consecration-banquet scene

THE SOUTH-WESTERN WALL

The south-western wall, facing the entrance, is the devotional focus of the room, and the understanding of its pictorial organisation does not pose any difficulty. A frieze delimits the lower part and is divided into three sections. The left section shows the seven precious possessions of a universal monarch (Tib. *rgyal srid rin chen san bdun*) [No.19a-g]. The middle section is devoted to the eight close sons, or great Bodhisattvas (Tib. *nye ba'i sras chen brgyad*) [No.20a-h], and the last section to the right depicts a narrative image which, as we shall discuss, is the iconographical corner stone of the upper temple [No.21].

The upper part of these murals takes the form of a triptych. The central panel is organised around the life-sized figure of Śākyamuni [No.10a] flanked by his two main disciples, with Śāriputra standing to his right [No.10b] and Maudgalyāyana to his left [No.10c]. The ensemble is enclosed by the sixteen arhats (Tib. *gnas brtan bcu drug*) [No.11a-p], and the two attendants Hwa shang and Dharmatrāta [No.12a and 12b].



181 Detail of the consecration-banquet scene, No 21. CA 2011.

The composition of the left panel is identical in all aspects to the spatial organisation of the right panel with a similar total of eight figures. Both side panels reflect to some extent the composition of the central panel with a life-sized historical figure – although slightly smaller than Buddha Śākyamuni – flanked by two disciples. Thus the left panel is centred around the well-known father and sons (Tib. *yab sras gsum*) group depicting Tsongkhapa (1357 – 1419) in the middle and his two spiritual heirs, rGyal tshab rje (1364 – 1432) and mKhas grub rje (1385 – 1438) on either sides [No.6a-c]. The group is crowned by three meditational deities (i.e. Vajrabhairava [No.2], Guhyasamāja [No.3], and Hayagrīva [No.4]) and a pair of unidentified Gelugpa scholars [No.5a-b].

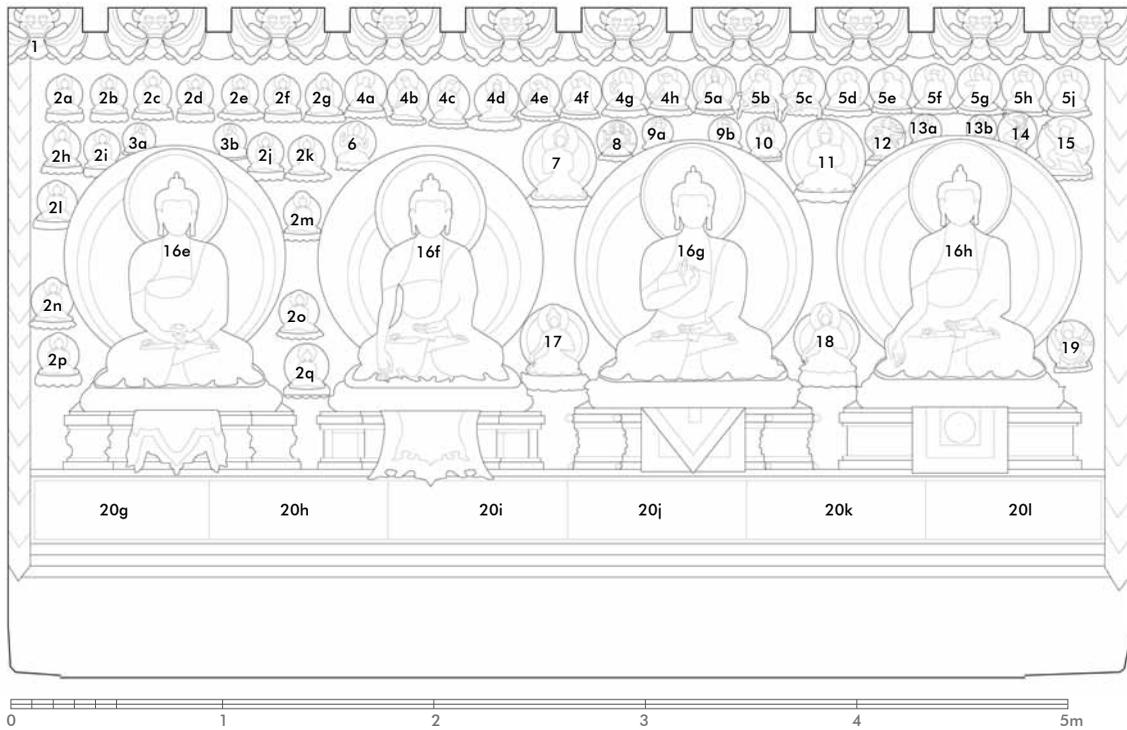
Following the exact same pattern, the right panel shows the Indian paṇḍita Atiśa Dīpaṅkara Śrījñāna (980 – 1054) flanked by his disciples 'Brom ston pa (1005 – 1064) to his right and rNgog legs pa'i shes rab (1059 – 1109) to his left [No.18a-c]. A triad of meditational deities with consorts form the top of the register (i.e. Kālacakra [No.13], Hevajra [No.14], and Cakrasaṃvara [No.15]) while an singular pair composed by mahāsiddha Nāropā [No.16] and sTag tshang ras pa (1574 – 1651) [No.17] closes the composition.



182 Detail of the consecration-banquet scene, No 21. LN 2011.



183 'Brom ston pa (1005 - 1064), No 18. LN 2011.



184 Numeric code of the north-western wall. TU Graz 2013.

ICONOGRAPHICAL INVENTORY OF THE NORTH-WESTERN WALL

1. Wall-painted hanging with lion faces (Tib. *sham bu*)
2. **Buddhas**
 - 2a-g The seven universal Buddhas
 - 2h-q The Buddhas of the ten direction and three times
3. **A pair of Gelugpa teachers**
 - 3a unidentified
 - 3b unidentified
4. **The six ornaments and the two excellent ones**
 - 4a Nāgārjuna (Tib. *Klu sgrub*)
 - 4b Āryadeva (Tib. *'Phags pa lha*)
 - 4c Asaṅga (Tib. *Thogs med*)
 - 4d Vasubandhu (Tib. *dByig gnyen*)
 - 4e Dignāga (Tib. *Phyogs kyi glang po*)
 - 4f Dharmakīrti (Tib. *Chos kyi grags pa*)
 - 4g Guṇaprabha (Tib. *Yon tan 'od*)
 - 4h Śākyaprabha (Tib. *Shākya 'od*)
5. **The Kagyupa lineage**
 - 5a Vajradhara (Tib. *rDo rje 'chang*)
 - 5b Tilopa (Tib. *Ti lo pa*)
 - 5c Nāropā (Tib. *Nā ro pa*)
 - 5d Marpa the translator (Tib. *Mar pa lo tsā ba chos kyi blo gros*)
 - 5e Milarepa (Tib. *rje btsun Mi la ras pa*)
 - 5f Gampopa (Tib. *sGam po pa bSod nams rin chenDwags po lha rje*)
 - 5g Rechungpa (Tib. *Ras chung pa rDo rje grags pa*)
 - 5h Phagmodrupa (Tib. *Phag mo gru pa rDo rje rgyal po*)
 - 5i Lingchenrepa (Tib. *gLing chen ras pa Pad ma rdo rje*)
6. Prajñāpāramitā (Tib. *Yum chen mo 'am Sher phyin ma*)
7. Maitreya (Tib. *rGyal ba Byams pa*)
8. Uṣṇīṣavijayā (Tib. *gTsub tor rnam par rgyal ma*)



185 Picture montage of the north-western wall. TU Graz 2012.

9. A pair of Drukpa Kagyu teachers

- 9a unidentified
- 9b unidentified
- 10. Sītātapatrā (Tib. *gDugs dkar*)
- 11. Mañjuśrī (Tib. *'jam pa'i dbyang*)
- 12. Jāṅguli (Tib. *Dug sel ma*)

13. A pair of Drukpa Kagyu teachers

- 13a unidentified
- 13b unidentified
- 14. Nīla Sīṃhavatrā (Tib. *Sen ge gdong ma sngon mo*)
- 15. Vajrapāṇi (Tib. *Phyag na rdo rje*)

16. Four of the eight Medicine Buddhas

- 16e Aśokottama (Tib. *Mya ngan med mchog*)
- 16f Śākyamuni (Tib. *Shākya thub pa*)
- 16g Suvarṇabhadravimala (Tib. *gSer bzang dri med*)
- 16h Abhijñarāja (Tib. *mNgon mkhyen rgyal po*)

- 17. SitaTārā (Tib. *sGrol dkar*)

- 18. ŚyāmaTārā (Tib. *sGrol ljang*)

- 19. Parnāśabari (Tib. *Rikhröd lo ma gyon ma*)

20. The last six deeds of BuddhaŚākyamuni

- 20g Practicing asceticism
- 20h Reaching the point of enlightenment
- 20i Defeating Māra's hosts
- 20j Attaining perfect enlightenment
- 20k Turning the wheel of doctrine
- 20l Departing for the ultimate peace of parinirvāṇa

THE NORTH-WESTERN WALL

Although it bears some similarities with the opposite wall, the pictorial organisation of the north-western murals is more intricate. The lower part of the wall-paintings is still delineated by a frieze which depicts the last six deeds of Buddha Śākyamuni [No.20g-l]; some of them being no longer visible.

The upper part is punctuated by the four remaining Medicine Buddhas [No.16e-h] but does not seem to create two areas as it was the case with the south-eastern wall. Thus said, the upper register is equally completed by a series of twenty-four figures perfectly aligned. This series can be divided into three groups. From the left, the first group of seven figures, which belongs to a larger ensemble of seventeen Buddhas, is tentatively identified as the seven universal Buddhas (Tib. *sangs rgyas rab bdun*) [No.2a-g], while the ten other Buddhas situated below them must then be interpreted as the Buddhas of the ten directions and three times (Tib. *phyog bcu dus gsum gyi sangs rgyas*) [No.2h-q].



186 Śākyamuni renouncing the world and practicing asceticism, No 20g. LN 2011.

These seven universal Buddhas are then followed by a group of eight figures commonly designated as the six ornaments and the two excellent ones (Tib. *rgyan drug mchog gnyis*) [No.4a-h]. The series is finally concluded by nine figures representing the main forefathers of the Kargyudpa lineage [No.5a-i].

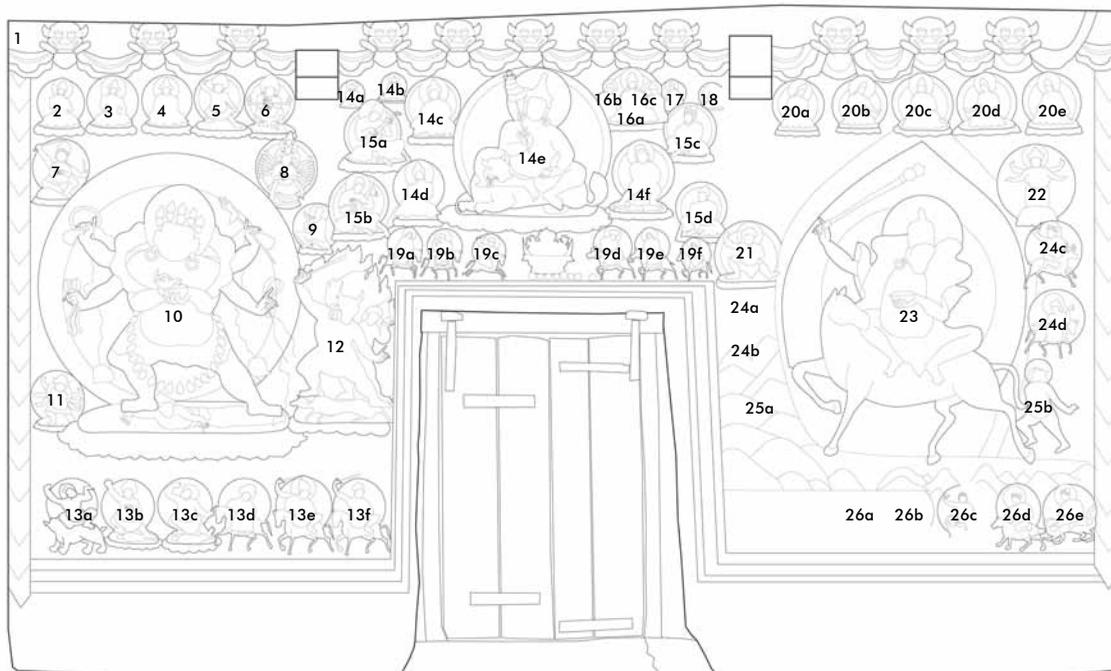
From the middle of the wall to the right end corner, the arrangement of the remaining figures tends to follow some kind of symmetry. These figures are of various sizes and are located above the halos of the last two Medicine Buddhas and within the gap created between them. Unlike the opposite wall, the overall spatial organisation of the north-western murals does not conform to the same degree of structural similarities and, as we shall see, reflect a greater variety of iconographical themes.



187 Kagyu lineage, No 5b-f. LN 2011.



188 Kagyu lineage, No 5f-i. LN 2011.



0 1 2 3 4 5m

189 Numeric code of the north-eastern wall. TU Graz 2013.

ICONOGRAPHICAL INVENTORY OF THE NORTH-EASTERN WALL

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Wall-painted hanging with lion faces (Tib. <i>sham bu</i>) 2. Vajrasattva (Tib. <i>rDo rje sems dpa'</i>) 3. Śyāmanila Vajravīdāraṇa (Tib. <i>rDo rje rnam 'joms ljang sngon</i>) 4. Akṣobhya (Tib. <i>Mi 'khrugs pa</i>) 5. Rakta Mahākāla (Tib. <i>mGon dmar</i>) 6. Pañjara Mahākāla (Tib. <i>Gur gyi mgon po</i>) 7. Caturbhujā Mahākāla (Tib. <i>mGon po phyag bzhi pa</i>) 8. Mañjuśrī Nāgarākṣa (Tib. <i>'Jam dpal nā ga rakṣa</i>) 9. Brahmanarūpa Mahākāla (Tib. <i>mGon po bram ze'i gzugs can</i>) 10. Śadbhujā Mahākāla (Tib. <i>mGon po phyag druk pa</i>) 11. Dhūmavarṇa Krodha Ucchuṣma (Tib. <i>Khro bo sme brtsegs dud kha</i>) 12. Yama Dharmarāja and consort Cāmuṇḍā (Tib. <i>gShin rje Chos rgyal dang Tsā mundi</i>) 13. Mahākāla's four lieutenants and retinue 13a Kṣetrapāla (Tib. <i>Kṣe tra pā la</i>) 13b Jinamitra (Tib. <i>Dzi na mi tra</i>) 13c Ṭakkirāja (Tib. <i>Ṭakki rā dza</i>) 13d Trakṣad (Tib. <i>Trakṣad</i>) 13e Mahākāli Remati (Tib. <i>bDud mo re ma ti</i>) 13f Śaṅkhapālī Devī (Tib. <i>Lha mo dung skyong ma</i>) | <ol style="list-style-type: none"> 14. Wealth deities 14a Śadbhujā Vasudhārā (Tib. <i>Sadbhujā Vasudhārā</i>) 14b Vasudhārā from the dhāraṇī (Tib. <i>gZungs las byung ba'i lha mo nor rgyun ma</i>) 14c Jambhala (Tib. <i>Dzambha la</i>) 14d Vasudhārā (Tib. <i>Nor rgyun ma</i>) 14e Mahāpita Vaiśravaṇa (Tib. <i>rNam sras ser chen</i>) 14f Kṛṣṇa Jambhala (Tib. <i>Dzambha la nag po</i>) 15. The guardian kings of the four directions 15a Dhṛtarāṣṭra (Tib. <i>Yul 'khor srung</i>) 15b Virūpākṣa (Tib. <i>sPyan mi bzang</i>) 15c Virūdhaka (Tib. <i>'Phag skyes po</i>) 15d Vaiśravaṇa (Tib. <i>rNam thos sras</i>) 16. The three forefather Dharma kings of Tibet 16a King Songtsen Gampo (Tib. <i>chos rgyal Srong btsan sgam po</i>) 16b King Thrisong Detsen (Tib. <i>Khri srong lde btsan</i>) 16c King Ralpacen (Tib. <i>Khri ral pa can</i>) 17. Śāntarakṣita (Tib. <i>slob dpon Zhi ba 'tsho</i>) 18. unidentified |
|---|---|



190 Picture montage of the north-eastern wall. TU Graz 2012.

19. The equestrian scene

- 19a Human female rider
- 19b Autochthonous warrior deity of West Tibet
(Tib. *Mes ba'u zhes pa'i gu ge yul lha*)
- 19c Autochthonous warrior deity of West Tibet
(Tib. *Mes ba'u zhes pa'i gu ge yul lha*)
- 19d Autochthonous warrior deity of West Tibet
(Tib. *Mes ba'u zhes pa'i gu ge yul lha*)
- 19e Human female rider with child
- 19f Human female rider
- 20. Five Gelugpa teachers**
- 20a Puntsok Gyatso (Tib. *Brag sgo rab 'byams pa Phun tshogs rgya mtsho*)
- 20b Kharo Zopa Gyatso (Tib. *mKhar rdo bzod pa rgyal mtsho*)
- 20c Drupkhang Geleg Gyatso (Tib. *sGrub khang pa dge legs rgya mtsho*)
- 20d The fifth dalai lama Ngawang Lobsang Gyatso
(Tib. *Ngag dbang blo bzang rgya mtsho*)
- 20e The fifth panchen lama Lobsang Yeshe (Tib. *Pañ chen Blo bzang ye shes*)
- 21. Vajrapāṇi (Tib. *Phyag na rdo rje*)
- 22. Cintāmaṇi Sita Mahākāla (Tib. *mGon dkar yid bzhin nor bu*)
- 23. Śrīmatī Pārvati Rājñī (Tib. *dPalldandmagzorrngyalmo*)

24. The goddesses of the four seasons

- 24a The spring goddess (Tib. *dPyid gyi rgyal mo am lha mo*)
- 24b The summer goddess (Tib. *dYar gyi rgyal mo am lha mo*)
- 24c The autumn goddess (Tib. *sTon gyi rgyal mo am lha mo*)
- 24d The winter goddess (Tib. *dGun gyi rgyal mo am lha mo*)

25. ŚrīDevī's other attendants

- 25a Makaramukhī (Tib. *Chu srin mo*)
- 25b Siṃhamukhī (Tib. *Seng ge dong ma*)

26. The five sisters of longevity

- 26a Thingi Shelsangma (Tib. *mThing gi zhal bzang ma*)
- 26b Tchöpan Drinsangma (Tib. *Cod pañ mgrin bzang ma*)
- 26c Tashi Tseringma (Tib. *bKra shis tshe ring ma*)
- 26d Miyo Lobsangma (Tib. *Mi g.yo blo bzang ma*)
- 26e Tekar Drosangma (Tib. *gTad dkar 'gro bzang ma*)

THE NORTH-EASTERN WALL

The pictorial organisation of the wall-paintings on the north-eastern wall can be divided into three panels. Each panel displays a number of dharma protectors (Tib. *chos skyong*) and guardians (Tib. *srung ma*). The first panel, to the left of the entrance door, is devoted to the life-sized figure of six-armed Mahākāla [No.10] along with his retinue and lieutenants in the lower register [No.13a-f]. Other aspects of Mahākāla are grouped around, such as Pañjara Mahākāla [No.6], Caturbhujā Mahākāla [No.7], and Brahmanarupa Mahākāla [No.9]. An equally important figure is the representation of Yama Dharmarāja with his consort Cāmuṇḍā depicted to the left of the main deity. A series of five figures closes the upper register [No2, 3, 4 and 5].

Above the door, the central panel is dominated by a large representation of Mahāpita Vaiśravaṇa [No.14]. He is surrounded by other wealth deities [No. 14a-d and 14f] and guarded by the great kings of the four directions (Tib. *phyogs skyong rgyal po bzhi or rGyal chen sde bzhi*) [No.15a-d]. To this group was also added the three forefather Dharma kings of Tibet (Tib. *chos rgyal mes dbon rnam gsum*) [No.16a-c] and the eighth century Buddhist master Śāntarakṣita [No.17]. Right above the door lintel, an equestrian scene depicting three male and three female riders on various animal mounts raises interpretational difficulties and shall be addressed later [No.19a-f].

Finally, the general organisation of the right panel mirrors the pictorial arrangement of the left panel. An almost life-sized Śrī Devī [No.23] is surrounded by an entourage which includes the four season goddesses (Tib. *dus bzhi'i lha mo*) [No.24a-d], Siṃhamukhī [No.25b], and the five sisters of longevity (Tib. *tshe ring mched lnga*) in the lower register [No.26a-e]; two of them are no longer visible. A Cintāmaṇi Sita Mahākāla [No.22] is also visible to the left of the main figures' blazing halo. In the upper register, a series of five Gelugpa teachers concludes the whole composition and their identification shall be instrumental in dating these murals [No.20a-e].

The pictorial organisation of these murals shows indisputable artistic skills in their spatial planning. The iconographical composition of a wall generally corresponds to the composition of the opposite wall. Taken individually, each wall also follows its own logic involving symmetries, groups of figures of different sizes, and series. Occasionally, the arrangement of certain iconographical types gives form to a particular theme, and a number of themes can eventually be grouped under a special category.



191 Mahāpita Vaiśravaṇa and other wealth deities, No14a-f, and the equestrian scene, No 19a-f. LN 2011.



192 The three forefather Dharma kings of Tibet, No 16a-c. LN 2011.

ICONOGRAPHICAL ANALYSIS

The following analysis tries to reorganise the themes of these murals thematically, using a reading grid that highlights the broad guidelines of its programme and eventually brings to light its religious and socio-political implications for the history of Dangkhār.

As briefly shown in the previous section, the pictorial organisation of these murals is first and foremost centred on thirteen figures of almost life-size dimensions, to which the representation of Mahāpita Vaiśravaṇa located above the door can be added. In more than one respect, these figures summarise the driving forces of the iconographical programme which we detail hereafter.

THE HEALTH AND LONGEVITY PROGRAMME

Many iconographical figures or themes can be grouped under the rubric of health and longevity. This category is headed by the eight Medicine Buddhas which dominate the side walls of the room. If Bhaiṣajyaguru can be confidently identified on the south-eastern wall [No.4d], the seven other Buddhas who constitute his retinue do not conform to well-established iconographical norms. Their individual naming remains tentative but does not contradict the identity of the theme.⁹

From the point of view of medical praxis, Tibetan medicine does not only include the treatment of diseases and pharmacology but also incorporates religious views and rituals, and was transmitted almost exclusively in monasteries as part of the worldly sciences until the 17th century. Tibetan medical literature was eventually led by a treasure text known as the *Four Medical Tantras* (Tib. *rGyud bzhi*) which, as a traditional pathological classification, includes a wide range of rituals and practices involving numerous deities. It is not surprising therefore that long-life deities are associated with the Medicine Buddhas represented on the side walls of the chapel. They include Buddha Amitāyus on the south-eastern wall [No.11], White Tārā [No.17] and Uṣṇīṣavijayā [No.8], which often form a triad of longevity (Tib. *tshelha rnam gsum*), and the representation of the goddess Prajñāpāramitā still on the north-western wall [No.6].¹⁰

The four hundred and four diseases (Tib. *nad bzhi brgya rtsa bzhi*), which are expounded by Bhaiṣajyaguru in the *Four Medical Tantras*, do not solely deal with physiological disorders, the treatment of diseases, and the maintenance of health, but rightly includes the purification of negative karma. It hence explains the thematic representation of the thirty-five confession Buddhas of the south-eastern wall.

9 Based on murals dating from the 15th century onwards, Vitali concludes that Bhaiṣajyaguru (Tib. *sMan bla*) was a deity popular in West Tibet as the result of the Gelugpa diffusion; see VITALI 1996: 140. It is worth remarking that the iconographical theme of the eight Medicine Buddhas (Tib. *sMan bla de gshes brgyad*) is already found on the wall-paintings of the Wa chen cave (Tib. *Wa chen phug pa*) in Ngari Prefecture. The cave is believed to have belonged to the Kargyudpa lineage and was probably built during the 14th century according to Prof. Gu ge Tshes ring rgyal po who documented the site; see GU GE 2011: 17-19. The popularity and development of the Medicine Buddhas and the thirty-five confessions Buddhas on murals of West Tibet has recently been discussed by Neumann and Heller; see NEUMANN 2012 and HELLER 2013.

10 The iconographical representation of the goddess Prajñāpāramitā (Tib. *Yum chen mo / Sher phyin ma*) often occupies the centre of Bhaiṣajyaguru's maṇḍala but can also be associated with the depiction of the eight Medicine Buddhas as it is the case here; for an earlier example see the south wall of the Wa chen cave in GU GE 2011: 89. It is interesting to note that on the wall-paintings of the upper temple she is also located right below Nāgārjuna who is credited with the development of Prajñāpāramitā literature. This would imply that a figure may be part of more than one iconographical scheme and therefore convey multiple ideas.

In the *Sūtra of Three Heaps* (Tib. *Phung po gsum pa'i mdo*), the invocation of each Buddha corresponds to the purification of a particular negative action, and their litany addresses more specifically the downfall of the Bodhisattva ethic.¹¹ Based on close-knit Buddhist narratives and doctrinal tenets, it may seem possible to justify *a posteriori* the iconographical relationship of almost all incongruous figures put together. In this regard, the depiction of Guru Padmasambhava, with his consorts Mandāravā and Ye shes mtsho rgyal, on the same wall as the thirty-five confession Buddhas, the Medicine Buddhas, and Amitāyus, demands to be addressed even if very briefly. As noted, the syntagmatic relation of figures No.6, 7, 9 and 11 on the south-eastern wall could not be established. Nevertheless, we would like to suggest that the presence of Padmasambhava could possibly be understood in relation to the production of the *Four Medical Tantras*. Tibetan historical tradition attributes the translation of the *rGyud bzhi* into Tibetan to the translator Be ro tsa na of the sPa gor clan who was a disciple of Padmasambhava.¹²

Upon his return from Kashmir, where he had learned the *Four Medical Tantras*, Be ro tsa na offered his translation work to King Khri strong lde btsan. Yet, Padmasambhava decided to postpone its diffusion and dissimulated the text inside the temple of Samye (Tib. *bsam yas*) where it was eventually discovered by Grwa pa mNgon shes in 1038. As a treasure text, the *rGyud bzhi* obtained *de facto* a new status and its popularity within all the Tibetan schools may well justify the presence of Padmasambhava as part of the health and longevity programme of the upper temple.

Finally, and from the vajrayāna point of view, the purification for moral and ethical faults is operated by Vajrasattva and Vajravidāraṇa who are represented on the north-eastern wall [No.2 and 3]. These two deities belong to the vajra family and are pictorially connected to Akṣobhya whose principal field of activity is the pacification of mental perturbations, sufferings, illness, and frustrations [No.4].

APOTROPAIC AND PROTECTIVE DEITIES

In Tibetan Buddhism, the state of well-being also depends on the removal of internal and external obstacles. Among the eight Medicine Buddhas, Suvarṇabhadravimala is said to prevent incurable diseases and fatalities while Aśokottama protects human beings against demons and rebirths in hell, to cite only a few examples. Other deities are often invoked to ward off evil spirits and dispel dangers. They constitute a group of apotropaic figures mainly depicted on the wall-paintings of the north-western wall.

While White Tārā clearly belongs to a group of long-life deities, Green Tārā is most commonly viewed as the saviouress who protects sentient beings from the eight kinds of fear or dangers (Tib. *'phags ma sgrol ma 'jigs pa brgyad las skyob pa*), which have both inner and outer characteristics (i.e. water/attachment, lion/pride, fire/anger etc.) [No.18]. Another aspect of Tārā assuming a protective function is the goddess Sitāpatrā who is here depicted with one face and curiously holds the parasol in her right hand [No.10]. In Mahāyāna literature, the undefeatable goddess (Skt. *aparajita*) is known to turn aside enemies, malignant forces, and dangers.

11 See BERESFORD 2002.

12 The existence of an eighth century Sanskrit medical text which would have served for the Tibetan translation has nevertheless been questioned ; see FENNER 1996.

Two other female deities empowered with apotropaic abilities are the tribal and forest goddesses Jāṅguli and Parnāśabari [No.12 and 19]. Their assimilation into the Buddhist pantheon was made possible through the appropriation of magical and soteriological praxis by Indian siddhas.¹³ Davidson recalls that associated with Buddhist tantras are rituals invoking these two female deities in order to cure poison from snake bites and to magically cross over water.¹⁴

The jungle goddess Jāṅguli, whose name was rendered as the remover of poison (Tib. *dug sel ma*) by Tibetan translators, is here depicted with a snake in her lower left hand. As for the leaf clad Parnāśabari, whose natural garment betrays her tribal and forest origin, she is also famous for healing contagious diseases. Finally, a wrathful Vajrapāṇi completes this group [No.15]. He is represented blue in colour with one face and two hands and appears in the form of a rakṣa—literally “one who guards and keeps watch” – stampeding a nest of snakes. He symbolises the power of all the Buddhas and further articulates the apotropaic programme to the protective deities represented on the adjacent wall.

The principal protectors (Tib. *chos skyong*) and guardians (Tib. *srung ma*) painted on the north-eastern wall are six-armed Mahākāla, Yama Dharmarāja and consort, and Śrī Devī. They are considered to be wisdom deities (Tib. *ye shes kyi lha*) and thus belong to a category of protective beings known as supra-mundane guardians (Tib. *’jigs rten las ’das pa’i srung ma*). As emanations of Buddhas and Bodhisattvas they embody the activity of enlightenment which is twofold; to avert obstacles (i.e. inner, outer, and secret) and to create favourable circumstances for the practitioner. Their presence on each side of the entrance door confirms them in their role of wisdom deities although they may also be venerated as meditational deities (Tib. *yi dam*). With the additional figure of Mahāpita Vaiśravaṇa [No.14], which is depicted above the door, these figures represent the principal dharmapālas propitiated by the dGe lug pa tradition and the special protectors of its founder Tsongkhapa (i.e. Śadbhūja Mahākāla, Yama Dharmarāja, and Vaiśravaṇa riding a lion). Other guardians represented inside the chapel include mundane deities (Tib. *’jig rten gyi lha*) such as the four great kings (Tib. *rgyal chen sde bzhi*) [15a-d]. These fierce warriors devoted to the protection of the four cardinal points are traditionally represented on the exterior walls of temples. As part of the iconographical programme, they are depicted above the entrance door of the upper temple and border the wealth and prosperity deities, which explains why the figure of Vaiśravaṇa appears in multiple forms; as a dharmapāla on the one hand, and as wealth deity on the other.

Furthermore, the most remarkable group of figures painted on the north-eastern wall is undoubtedly the six riders represented on either side of an overflowing dish containing seven kinds of jewels (Tib. *nor bu cha bdun*). The male riders, with their distinctive white complexion, turbans, and weapons (i.e. quivers of arrows, bows, swords, and whips), can be identified as the autochthonous deities (Tib. *yul lha*) of West Tibet [No.19b-d]. They traditionally ride ashen horses (Tib. *rta ngang dkar*) and, as Gu ge Tshe ring rgyal po notes, are not to be found anywhere else in Tibet.¹⁵

13 It is therefore not fortuitous that these two goddesses are also pictorially connected to the forefathers of the Kargyudpa lineage and ’Brug pa masters depicted in the upper register. The Indian siddha derivation of their tradition has been highlighted in artistic representations from the 12th century onwards. Furthermore, btsun ma Ngag dbang sbying pa, a ’Brug pa nun and researcher of French nationality, was kind enough to inform us that Dug sol ma is commonly venerated as an emanation of dPal ldan lha mo and is always represented next to Mahākāla inside ’Brug pa temples. This may also explain the presence of the fierce Nīla Siṃhavatrā [No.14], who, with Jāṅguli, are located on either side of a pair of ’Brug pa teachers [No.13]. Although traditionally of rNying ma origin, Nīla Siṃhavatrā is often found represented inside ’Brug pa monasteries in Ladakh. We are again indebted to btsun ma Ngag dbang sbyin pa for these clarifications.

14 See DAVIDSON 2002: 231.

15 About the representation of the autochthonous warrior deities of Guge depicted inside the monastery of sNub bkra shis shos gling in Ngari and their diffusion in West Tibet; see GU GE 2006: 250.

These local warrior deities are called Mes ba'u in Guge, a Tibetan designation that would seem to suggest a strong patrilineal origin (Tib. *mes po*, “ancestor”). The first male deity rides a horse and holds a whip while performing the gesture of protection and fearlessness with his left hand (Skt. *abhaya mudrā*, Tib. *mi'jigs pa'i phyag rgya*) [No.19b]. The next warrior to the right rides his horse at gallop, cracking a whip from the right hand and granting protection and refuge with his left hand (Skt. *saranagamana mudrā*, Tib. *skyabs sbyin gyi phyag rgya*) [No.19c]. The last male figure rides a ram and departs slightly from the two other local deities both in size and depiction [No.19d]. He wears a white turban-like hat, holds a whip in his right hand and performs the gesture of threatening and subjugation (Skt. *kāraṇa mudrā*, Tib. *sdig mdzub kyi phyag rgya*).

The presence of three female human riders dressed in typical garments of West Tibet and richly adorned with jewelry and headdresses complete this intriguing equestrian scene. Two of them ride a horse and carry a bowl-like vessel containing offering substances while performing a hand gesture with their other hand [No.19a and 19f]. The last woman rides a goat and stands to the right of what appears to be the main local warrior deity. Quite significantly she carries a male child in her arms, who is dressed in white and wears a white turban [No.19e]. As far as the iconographical composition is concerned, the representation of the three autochthonous warrior deities of West Tibet may well be justified as part of the protective deities painted on the north-eastern wall. Thus said, there is more to this narrative scene than meets the eye and we shall soon return to its interpretation when we discuss the political implications and patronage of these murals.

Finally, the absence of the female protective deity rDo rje chen mo from the wall-paintings of the upper temple must be reported. Although she might have disappeared from the right panel of the north-eastern wall due to the heavy restoration work, the relationship between rDo rje chen mo and the polity of Dangkhār should be investigated further as her long time association with the royal families of both West Tibet and Ladakh makes her a pivotal religious figure for the understanding of the history of the Spiti valley.¹⁶

THE WEALTH AND PROSPERITY PROGRAMME

The wealth and prosperity programme is organised around the figure of Mahāpita Vaiśravaṇa also known as the master of wealth (Tib. *nor gyi bdaq po*) [No.14]. He is surrounded by deities of abundance including his own consort Vasudhārā [No.14d], who is celebrated as Śiskar Apa in Spiti and Lahaul, and who is easily recognisable for she holds a sheaf of corn symbolising a fruitful harvest. The goddess manifests herself under the forms of six-armed Vasudhārā and Vasudhārā from the dhāraṇi [No.14a and 14b]. The group also includes Jambhala and Kṛṣṇa Jambhala, two different manifestations of Vaiśravaṇa [No.14c and 14f]. These deities do not only provide wealth and prosperity for the householder who propitiates them but also preside over harvests and the abundant supply of goods for the community. Their worship therefore brings wealth, good fortune, and stability, and is viewed as essential for the sustainability and longevity of the realm.

¹⁶ Jahoda remarks that the “relationships between rDo rje chen mo, the royal family and Lochen Rinchen Zangpo are of ancient origin [...] the case of the royal dispute between the king of Ladakh and the king of Purig, amongst other things concerning Spiti, and its mediation by Rig 'dzin Tshe dbang nor bu presents an example for the importance of this deity also in later historical periods. For instance in the text of the Wamle Treaty, rDo rje chenmo appears among the deities witnessing the treaty and punishing those not adhering to the agreement”; JAHODA 2009: 54.

The wealth and prosperity programme is eventually completed by the imperial triumvirate depicting the three forefather Dharma kings of Tibet (i.e. Sron btsan sgam po, Khri srong lde btsan, and Khri ral pa can).

Their presence among these deities demonstrates the perennial relationship between wealth, power, and Buddhism, and underlines the dynastic legitimacy narrative at work inside the upper temple.

RELIGIOUS AFFILIATION AND LINEAGES

The religious programme of the upper temple is overtly of bKa' gdams pa and Gelugpa origin as attested by the iconographical composition of the south-western wall with its religious figures and meditational deities. It betrays strong historical and regional trends and is of little surprise since the Spiti valley and its people were directly concerned with the later diffusion of Buddhism (Tib. *bstan pa phyi dar*).

The prominent position of Atiśa amidst the main recipients of worship on the south-western wall clearly emphasises the Indian tradition with regard to the revitalisation of Buddhism in Western Tibet during the late 10th and 11th century. The depiction of the Indian paṇḍita, flanked by his two most famous Tibetan disciples, acts as guarantor of the religious continuity and orthodoxy of Tibetan Buddhism; particularly with respect to the bKa'gdams pa lineage characterized by the representation of its founder 'Brom ston pa. The spiritual legitimacy narrative is evidently supported by the central position assumed by the historical Buddha, Śākyamuni, but also by the representation of his twelve deeds on the side walls of the room. The Indian derivation of the teaching is somehow complemented by the presence of the six ornaments and the two excellent ones of the north-western wall. The Indian scholars and philosophers led by Nāgārjuna convey an indisputable degree of doctrinal orthodoxy and scholasticism which eventually became the religious brand of the Gelugpa school.

The latter is manifest with the presence of its founder and most articulate exponent represented next to Śākyamuni and Atiśa on the south-western wall. The life-size depiction of Tsongkhapa accompanied by his two spiritual heirs attests to the Gelugpa penetration into Western Tibet during the 15th century. The quick assimilation of the reformed school was rendered possible due to the old bKa' gdams pa foundations in the area and the support of the Guge dynasty. Natives of Ngari, who had pursued their scholastic training in Central Tibet, were instrumental in the establishment of Tsongkhapa's tradition. Disciples such as gSang phu ba lHa dbang blo gros, who is credited with the foundation of various temples, and Ngag dbang grags pa, who was appointed abbot of Tholing (Tib. *mTho gling*), were particularly active in the areas of Ngari and Spiti. One must therefore consider the possibility of their pictorial representations among the unidentified Gelugpa figures painted on the murals of the upper temple, such as the two seated masters on either side of Tsongkhapa.

Another group of Gelugpa teachers is situated on the right panel of the north-eastern wall and is of significant importance for the study of the upper temple and its wall-paintings [No.20a-e]. Three of them were subject to unfortunate restoration but their general appearance seems to conform to the last two figures painted on the right.

They occupy the upper register of the wall and are part of a composition including the glorious queen, Śrī Devī, and her entourage. Their identification is highly conjectural and rests on stylistic comparisons with a scroll painting belonging to the Shelly and Donald Rubin's collection.¹⁷

Although of a completely different facture, the painting bears similarities with the right panel of the north-eastern wall in its overall composition. As the main deity, it represents the glorious goddess Śrī Devī on her mule (Tib. *dPal ldan dmag zor rgyal mo*). The lower register of the painting is occupied by the five sisters of longevity (Tib. *tshering mched lnga*), while the upper register shows five seated Gelugpa teachers who are nominally identified thanks to an inscription; beginning on the left hand side, Phun tshogs rgya mtsho, mKhar rdo bzod pa rgyal mtsho (1672 – 1749), sGrub khang pa dGe legs rgya mtsho (1641 – 1713), the Fifth Dalai lama Ngag dbang blo bzang rgyal mtsho (1617 – 1682), and the Fifth Pañchen lama Blo bzang ye shes (1663 – 1737). The painting is approximately dated 1700 – 1799 by Watt in spite of the names of four donors recorded on the backside which allow a better dating.¹⁸

The representation of the Gelugpa masters on the north-eastern wall lacks some of the attributes and distinctive features which characterise the fine degree of execution of the scroll painting, such as the moustache and the dharma wheel insignia of the Fifth Dalai lama. However, the central figure tends to conform to the depiction of sGrub khang pa dGe legs rgya mtsho¹⁹ as far as the restoration work allows us to judge. He also holds a text in his left hand and seems to perform the hand gesture of protection while the figure of the scroll painting clearly displays the mudrā of argumentation. In the absence of better evidence, the comparison between these two compositions suggests at least that the murals of the upper temple and the scroll painting preserved in the Rubin collection could have been executed more or less at the same time, probably during the first half of the 18th century. As we shall see, other aspects of the iconographical programme support this hypothesis.

It is reasonable to assume that the monastery of Dangkhar became a Gelugpa institution since the end of the 15th century. It is certain that after the mid 17th century, the religious and economic control of the central valley of Spiti was under the Gelugpa-led central Tibetan government (Tib. *dga' ldan pho brang*).²⁰ The predominance of Tsongkhapa's school in the area is hence well attested for this period and the supervision of Gelugpa monasteries within the Spiti valley and nearby areas was the prerogatives of the incarnate lineage of Lochen Rinchen Zangpo. The main religious affiliation of Dangkhar monastery, the presence of Gelugpa masters, meditational deities, and protectors on the walls of the upper temple is therefore of very little surprise.²¹

More remarkable, however, is the intrusion of Kargyudpa religious figures as part of the iconographical programme of the upper temple. It starts with the almost canonical depiction of the forefathers of the white lineage (Tib. *dkar brgyud*) which is painted on the north-western wall of the chapel [No.5a-i].

17 For a general presentation and photographs of this painting; see the Himalayan Art website, item no.105; <http://www.himalayanart.org/image.cfm/105.html>.

18 Phur bu lcog ngag dbang byams pa (1682 – 1762), Byams pa ye shes, Blo bzang 'phrin las (1697 – 1761), and the 49th dGa' ldan khri pa Blo bzang dar rgyas (1662 – 1723). Assuming the painting was commissioned during the life time of these patrons, the year 1723 would then constitute the *terminus ante quem* for its realisation, unless of course Byams pa ye shes had passed away at an earlier date.

19 sGrub khang pa dGe legs rgya mtsho was a native of Zanskar (Tib. *Zangs dkar*), a region adjacent to Spiti. He travelled to Central Tibet to further his monastic training. He received teachings at Tashi Lhunpo (Tib. *bKra shis lhun po*) and resided mainly at Sera (Tib. *Se ra*) where he was granted with the establishment of meditation centres (Tib. *sgrub khang*) and hermitages (Tib. *ri khrod*) on the mountain situated behind the monastery.

20 For the organisation of the Spiti Valley and the socio-economic role assumed by its monasteries; see JAHODA 2007 and 2008.

21 In 1654, dPal ldan rgya mtsho (c.1601 – 1674), a native of Dangkhar, became the 40th holder of the Ganden throne (Tib. *dga' ldan thri pa*), the highest position and head of the Gelugpa school; see DUNG DKAR 2002: 364.

The lineage stems from Vajradhara followed by the Indian siddhas Tilopa and Nāropā. It continues with the representations of Mar pa lotsawa (1012 – 1097) and his renowned disciple Mi la ras pa (1040 – 1123). The following figures depart slightly from traditional iconographical conventions but can be asserted as Mi la ras pa's foremost disciples and followers with, to his left, sGam po pa (1079 – 1153), followed by Ras chung pa (1085 – 1161), Phag mo gru pa (1100 – 1170), and finally Gling chen ras pa (1128 – 1188).

As one of the main founders of the 'Brug pa bka' brgyud lineage, Gling chen ras pa announces the presence of the sub-sect on the walls of the upper temple. His depiction recalls biographical elements reflecting the tension between ideals of peripatetic ascetic lifestyle and the institutionalised religious community, which eventually came to characterise the development of the 'Brug pa school.²²

While his teacher Phag mo gru pa was a strong advocate of monasticism, Gling chen ras pa's loss of monastic vows and his subsequent commitment to yogic practices seems to be expressed by a loosely worn monastic shawl uncovering a bare right arm, and a meditation band (Tib. *sgom thag*) similar to those of the cotton clad yogis Mi la ras pa and Ras chung pa. As his hagiographies recall, Gling chen ras pa's early exposure to bKa' gdams pa teachings would never turn him into a fine dialectician. Thus said, he proved himself to be a talented author of mystic songs (Tib. *mnyam mgur*) and tantric treatises which certainly explains why he is represented with a bundle of scriptures on his lap. As previously established, some of the apotropaic deities of the north-western walls were distinctively worshipped by the 'Brug pa followers. In this regard, the representation of Vajrapāṇi right below Gling chen ras pa may well be intentional as a tantric exegesis entitled *A Ritual of the Maṇḍala of the Glorious Bhagavān Vajrapāṇi* was composed by the founder of the 'Brug pa school.²³

Still on the same wall, two pairs of distinctively bearded teachers wearing red hats can be asserted as 'Brug pa clerics although their individual identification is not yet clear [No.9 and 13]. The presence of the 'Brug pa lineage is even more evidently attested with the unique depiction of sTag tshang ras pa (1574 – 1651) on the south-western wall. Easily recognisable from his white garments and turban, his white pearl necklace and black disc-like earrings, his representation on the walls of the upper temple conforms to an established iconographical scheme adopted at the Shey (Tib. *Shel*) and Hemis (Tib. *Hemis*) monasteries in Ladakh.²⁴ His presence on the main devotional wall of the chapel is particularly remarkable as it conveys a well-chosen religious and political message. Represented among the bKa' gdams pa figures of the left panel and spatially paired with the Indian siddha Nāropā, it recalls that sTag tshang ras pa was inheritor of both Atiśa's tradition and Nāropā's yogic instructions which he pursued while sojourning at Namgyal Lhunpo (Tib. *rNam gyäl lhun po*) in Central Tibet.²⁵ Moreover, a passage of his hagiography tells how he received, in a dream, the empowerment of the meditational deity Cakrasaṃvara who is depicted right above him [No.15].²⁶

Even more significant is his involvement in the cultural sphere of West Tibet which is based, as Schwieger explains, on “a vague prophecy of his teacher lHa-rtse-ba that he would possess a karmic relationship for the benefit of living beings in the area of mNga'-ris”.²⁷

22 See BLYTHE MILLER 2005.

23 *bCom ldan 'das dpal phyag na rdo rje'i dkyil 'khor cho ga* ; for his other works see BLYTHE MILLER 2005: 388.

24 According to btsun ma Ngag bdang sbyin pa, a 'Brug pa nun and French researcher, early depictions of sTag tshang ras pa from the 17th century, as can be observed in Ladakhi shrines, tend to show him in the same attitude as Mi la ras pa, while the more conventional depictions of Hemis, Shey, and Dang-khar, are clearly attributed to the next century. Personal communication, March 2013.

25 See SCHWIEGER 1996: 89.

26 See SCHWIEGER 1996: 100.

27 See SCHWIEGER 1996: 104.

As a consequence, the intrepid (Tib. *pho rgod*) 'Brug pa pilgrim went on five different journeys to the western Himalayas and beyond to visit Buddhist places. He travelled through Kinnaur (Tib. *Khu nu*) and stayed in Zanskar and Lahaul (Tib. *Gar zha*) for short periods of time. It would therefore seem reasonable to assume that he also visited Spiti during one of his pilgrimages. It is, however, in his role as the chaplain of King Seng ge rnam rgyal that would eventually contribute to seal the bond between the 'Brug pa order and the royal family of Ladakh.

The special relationship of priest and patron, which is exemplified by the lives of sTag tshang ras pa and King Seng ge rnam rgyal, will prove to be instrumental in highlighting the political and cultural context in which the upper temple was possibly consecrated. As we shall discuss, the narrative scene depicted below the left panel should be read in light of the intricate political and cultural ties that prevailed between the Kingdom of Ladakh and the valley of Spiti after the conquest of the latter by King Seng ge rnam rgyal in 1630.

Ultimately, the representation within the iconographical programme of O rgyan Ngag dbang rgya mtsho, better known as sTag tshang ras pa, along with Atiśa, 'Brom ston pa, and Nāropā, serves to legitimate a double religious filiation. It emphasises the common bKa' gdams pa origin of both the pictorially dominant Gelugpa order and the intruding figures of the Kargyudpa lineages.

DYNASTIC LEGITIMACY

Within the Buddhist realm, the legitimacy of the tradition does not only rest on a shared conception of orthodox doctrines and praxis, but would also need to be sanctified by a ruling power at the end of the day. From the Tibetan and Himalayan perspective, the various religious narratives are more often than not rooted in the secular and regional context of their production, as Buddhist communities would hardly thrive perhaps not even survive without the protection and financial support of a royal family.

Bearing this in mind, the iconographical programme of the upper temple is no exception. It articulates local and global elements in order to retrace the multiplex conditions that concurred to the formation of the polity of Spiti, and eventually legitimates its state at the time of the consecration of the upper temple. In this regard, the central panel of the north-eastern wall is of particular interest.

As previously observed, the wealth and prosperity programme depicted above the entrance door of the chapel is intriguingly completed by the presence of the three Tibetan Dharma kings, Srong btsan sgam po, Khri srong lde btsan, and Khri ral pa can, to which Śāntarakṣita, the Indian abbot who initiated the first Tibetan monastic community, was added. Their association with the wealth deities and the four Lokapāla helps to convey a sense of a golden age when economic prosperity and political stability prevailed throughout the Tibetan Empire. Prompted by 11th-12th century literary works such as the *sBa bzhed, Ma Ni bka' 'bum* and *bKa' chems ka khol ma*, the conversion of the Land of Snows to Buddhism in the course of the 7th-8th centuries was rewritten through a cosmological narrative in which Tibet was predestined by Buddha Śākyamuni himself to become a Buddhist realm centred round the figure of Avalokiteśvara and his multiple emanations (e.g. Srong btsan sgam po). The persistence of the theme and its aesthetic expressions hence concur to establish the universal character of Buddhism, the legitimacy of the state, and the indivisibility between the two.

Additionally, the lower register of the wealth and prosperity programme is occupied by the autochthonous warrior deities of West Tibet and their female counterparts. Besides their role as protectors and guardians, we would like to suggest that they assume the anthropological function of *patres genitores* of the people of Guge. The likely derivation of the name Mes ba'u from *mes/mes po* would bear witness to their role of ancestors, forefathers, and progenitors. This symbolic kinship between the autochthonous deities (Tib. *yul lha*) and the ladies of West Tibet would thus explain the representation of a young boy in the arms of the woman riding a goat [No.19e]. The male heir, whose skin tone is distinctively of the women and not of the deities, wears a white garment and turban similar to the local warriors. The iconographical scheme composed of a noble woman wearing a sumptuous attire characteristic of West Tibet who holds in her arms a male child clad in white reappears within the narrative scene of the south-western wall and therefore deserves further consideration.

If our interpretation of the equestrian scene proves to be correct, the narrative depicts the formation of the Kingdom of Guge-Purang (Tib. *Pu hrang*) by King sKyid lde Nyi ma mgon in the 10th century. In the light of Tibetan historiography, the annexation of the western territories by Nyi ma mgon was rendered possible due to his bloodline and, observes Petech, to the support of “two families of the highest nobility [...] who had played a role during the last two reigns of the monarchy”.²⁸ In addition to the aura attached to the person of Nyi ma mgon, the rather peaceful establishment of the West Tibetan kingdom was facilitated by the formation of matrimonial alliances with locals and the exploitation and promotion of economic resources.

From his first wife,²⁹ King Nyi ma mgon had three sons collectively known as the three protectors of Töd (Tib. *stod kyi mgon gsum*).³⁰ After the demise of Nyi ma mgon in the second quarter of the 10th century, the kingdom of the three western dominions (Tib. *stod mNga' ris skor gsum*) was subsequently divided by his three sons. dPal gyi lde Rig pa mgon inherited Maryül (i.e. Ladakh), bKra shis mgon received Guge and Purang, and lDe gtsug mgon took Spiti, Kinnaur, Lahaul, and Zanskar.³¹

The meaning of the iconographical depiction of the territorial deities and the ladies of West Tibet would hence hinge upon the possible conflation over time between the local warrior deities and the *mGon* dynasty, founders and protectors (Tib. *mgon*) of the realm. The equestrian scene would hence serve a threefold purpose. It would first reinforce the post-10th century narrative of an imperial golden age illustrated by the three forefather Dharma kings of Tibet, then legitimate the establishment of the kingdom of West Tibet by one of their successors, and finally emphasise the common kinship shared by the people of the three dominions (Tib. *skor gsum*).

28 See PETECH 1997: 231.

29 Tibetan sources record the names of two different women for Nyi ma mgon's first wife. According to the *Ladakh Chronicles* (Tib. *La dwags rgyal rabs*), Nyi ma mgon married 'Bro za 'Khor skyong from the 'Bro nobility of Purang, an aristocratic clan which played a major role during the Tibetan Empire as the mothers of Khri ral pa can and gLang dar ma belonged to that family. Following Snellgrove's suggestion, Petech notes that “there is a possibility that the creation of the West Tibetan kingdom was due to the initiative of this clan, which invited sKyid-lde Nyi-ma-mgon to their country in order to give a cover of legitimacy to their local power”. The possible matrimonial alliance between Nyi ma mgon and a lady from the 'Bro family of Purang upon the request of the latter would undoubtedly bring grist to the mill of our interpretation; see PETECH 1997: 231-232.

30 We have purposefully translated the term *mgon* as protector, although it could simply refer to the dynastic characteristic of the royal family of Guge.

31 For a chronological account of this period; see VITALI 2003.

Among the sub-principalities of Western Tibet, the small kingdom of Zangla (Tib. *bZang la*) in Zanskar has articulated the same historical continuity, exploiting very similar cultural elements to position its own dynasty as a direct heir to the central Tibetan imperial period. This was first observed in the late 70s when Dargyay recorded donor chronicles (Tib. *chab brjod*), a type of historical document added to embellished manuscripts, which appears to be specific to the dynasty of Zangla.³²

These documents tend to follow the same literary pattern. After praising the triple object of refuge (Tib. *kun mchog gsum*) and offering a eulogy to the Buddhas, Bodhisattvas, and Lamas, the donor chronicles reaffirm and celebrate the role performed by the early Tibetan kings, ministers, and patrons of the Yarlung dynasty as “they brought the light of the teaching to the darkness which hovered at this time over the Tibetan country”. A cosmological narrative explaining how Zanskar eventually became part of that sacred geography is then expounded upon. Occasionally, Nyi ma mgon is recalled to our attention as the founder of the Kingdom of Ngari and the forefather of the royal house of Zanskar.

Furthermore, these texts consistently commemorate the works of masters of the later diffusion, in particular those of Atiśa, 'Brom ston pa, and the translator rNgog legs pa'i shes rab – along with Mar pa and Mi la ras pa of the Kargyudpa school – who paved the road for the establishment of the Gelugpa order in the area, which is praised in the next paragraph. Finally, the chronicles conclude by paying tribute to the meritorious acts of the donors.

As a literary or iconographical contrivance, the religious and secular figures depicted inside the upper temple and those same individuals who are praised in the donor chronicles of Zanskar establish and promote an indisputable sense of spiritual continuity and dynastic legitimacy for polities situated at the spatial and temporal margins of the Tibetan Buddhist realm. Not so surprisingly, the inhabitants of Zangla still welcome their local rulers as the direct descendants of King gLang dar ma.³³

THE CONSECRATION-BANQUET SCENE: A NARRATIVE CORNERSTONE

The narrative scene depicted in the lower right hand side of the south-western wall is undeniably the key to the understanding of the iconographical programme of the upper temple [No.21]. The scene is part of the lower frieze and comes after the representations of the seven possessions of a universal monarch and the eight great Bodhisattvas [No.19 and 20]. The image has unfortunately endured severe flaking and loss of paint. Furthermore, it appears that the main figures were systematically and tragically defaced.

The action of the scene takes place outside and focuses on a group of celebrants seated in front of a screen-like curtain with a flower pattern with hanging at the top. Two Buddhas situated above the curtain are witnessing the scene. The Buddha on the right is no longer visible except for his mandorla. The one on the left is clearly Amitāyus. The nine banqueters, whose heads are encircled by halos, are of different sizes attesting to their importance and rank. The tallest figure on the left hand side presides over the congregation. He holds a rosary in his hands and wears a red Tibetan dress with a white shirt appearing out of his right sleeve. The rest of the figure is irremediably damaged. The following character, slightly smaller in size, wears a monastic robe and a red hat with a folded rim bordered in white.

³² See DARGYAY 1987.

³³ See DARGYAY 1987.

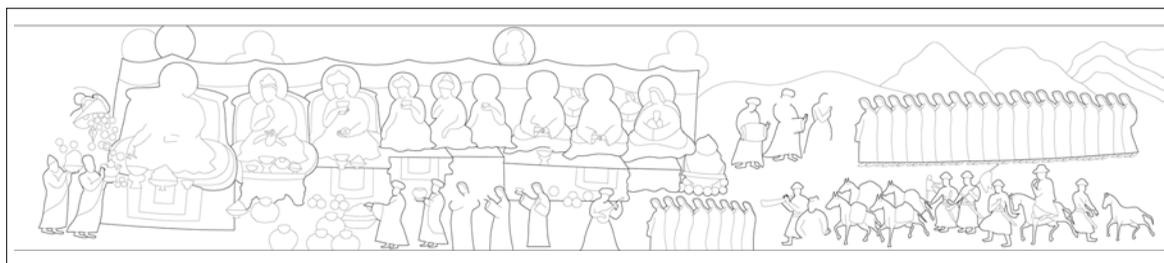
He performs a hand gesture with his right hand and holds a scripture on his lap with the left. The next figure wears a Tibetan red dress with a brown trim, a white shirt underneath, and a white turban topped with a red cone on his head. He holds a cup in front of his chest with the right hand. His left hand is resting on his lap, a white jewel in the palm. The next six banqueters are of smaller but equal sizes. The first three figures are men. They hold a vessel in front of their chests and show only minor changes in their attire. The remaining figures are ladies of nobility who are being assisted by two standing women of even smaller size. They wear the traditional costume of West Tibet composed of a black and red Tibetan dress with striped sleeves, and a red cape. They have headdresses made of pearls and wear multiple necklaces around their necks. The first two women hold their hands in what appears to be the meditation gesture. Seated at the extreme right of the congregation, the last lady has a child in her arms. The boy is clad in white and wears a red necklace. The details of his face are no longer visible.

In front of the celebrants are tables on which dishes of different shape and size are arranged with a multitude of colourful gems. Round jewels of a much bigger dimension overflow from gigantic containers (Tib. *zangs khog*) and are scattered everywhere on the floor. The source of this profusion is a man standing to the right of the main banqueter. With his black hair knotted on top of his head, he holds on his left shoulder a cornucopian basket out of which emerges a shower of gems, conches, and other kinds of jewels. In the midst of this scene of exuberant wealth, female and male attendants carry large beverage containers (Tib. *khrung rkyan*) and dishes towards the leading figure.

The rest of the scene is dominated by two groups of women wearing traditional Western Tibetan garments, jewels, and headdresses. They are dancing (Tib. *sgor gzhas*) to the sounds of drums, oboes (Tib. *sur sna*), and a stringed instrument (Tib. *sgra snyan*). This performance announces the coming of a convoy. The delegation is led by a horse riding herald surrounded by armed soldiers with spears and banners. In front of them, four mules (Tib. *khal drel*) are carrying a tribute made of bags and bundles of material. Finally, a reined and saddled horse is led by a walking man at the rear of the convoy.

The iconographical scheme represented here is reminiscent of other murals in West Tibet. Musicians, women dancers, loaded mules, offerings, vessels, bags, and celebrants constitute some of the formal minimal units of this scheme. Yet, it is difficult to establish whether similar scenes depicted at Tsaparang (Tib. *rTsa rang*), for example, and the image of the upper temple represent the same iconographical theme as many elements in the latter are missing.³⁴ One of these elements is the presence of beasts of burden and labourers carrying wooden planks and construction materials.

34 For instance inside the red temple (Tib. *lha khang dmar po*); see 'PHRIN LAS MTHAR PHYIN 2001: 146-157.



193 Schematic drawing of the consecration-banquet scene on the lower frieze of the south-western wall, No. 21. TU Graz 2013.

In any case, these narrative scenes involving strong regional and cultural elements along with historical figures, such as sovereigns, religious hierarchs, and donors, must be understood in relation to the religious edifice within which they came to be depicted. Although the iconographical composition of this type of scene would demand further investigations, their artistic association and semantic assimilation to the religious programme of these buildings is rather unlikely. As a result, it seems reasonable to argue that these scenes celebrate, sometimes together, the foundation and consecration of these edifices. Following the premise that what is being depicted is a temple consecration, or the celebrations accompanying the edification of the upper temple at the very least, what does that image tell us about the identity of the main figures?³⁵

In the absence of any kneeling or seated lay people who could be identified as additional donors, it seems reasonable to conclude that the main celebrant seated to the far left of the banqueters is not only the actual benefactor and patron of the upper temple but also a man of considerable importance and prestige. His association with a member of the clergy standing to his left would then suggest the presence of a sovereign and his court spiritual adviser (Tib. *dbu bla*). The preceding iconographical themes depicted within the frieze, showing the seven precious possessions and the eight close sons, already position him as being a universal ruler of great altruistic activity. The historical identification of the monarch will be discussed shortly.

For this reason, the religious affiliation of the royal minister is of concern to us. Based on iconographical elements alone, it seems reasonable to argue that the priest belongs to the 'Brug pa bka' brgyud lineage as his hat is similar to those of at least two of the 'Brug pa masters depicted on the north-western wall [No.9a and 13a]. As for the text in his left hand, it must be viewed as either a consecration manual or an iconographical attribute that should facilitate his identification. The representation of the Kargyudpa lineage and the presence of 'Brug pa historical figures (e.g. sTag tshang ras pa) on the walls of a small religious edifice located within the saturated Gelugpa environment of the Spiti valley, and the absence of institutions belonging to the former in the area establish as a consequence the foreign origin of both the monarch and his chaplain.

Although smaller in size, the third man from the left could also be a foreign dignitary as he stands in line with the monarch and the royal priest. As for the remaining figures, they certainly represent people of the Spitian nobility. The identification of their rank, title, and individual identity remains beyond expectation.³⁶

If the depicted monarch can be accounted for the edification of the temple, it is however not clear who the main wealth supplying figure is. It is our contention however that the cornucopia of gems should be interpreted as a metaphorical expression of the prosperity granted by the foreign ruler celebrated in the scene. Conversely, the delegation with its loaded mules and soldiers may well be the expression of a tribute paid to the monarch in return for his kindness and protection towards the inhabitants of Dangkhar. This interpretation, as we shall see now, is well supported by historical evidence. This concludes the analysis of the iconographical programme elaborated on the walls of the upper temple at Dangkhar. The following section attempts to address the political and cultural conditions that prevailed at the time of its edification, and last but not least to suggest a name for its patron.

35 In 1933, Tucci and Ghersi already suspected that the narrative image of the south-western wall represented «scenes of events taking place at the foundation of the temple»; see TUCCI 1935: 51.

36 For preliminary observations regarding the social organisation at Dangkhar; see "THE EXPANSION and THE TOPOGRAPHICAL REORGANISATION" on page 120.

POLITICAL AND CULTURAL CONTEXTUALISATION

The annexation of the old Kingdom of Guge by King Seng ge rnam rgyal in 1630 represents not only the culmination of Ladakhi political power in the Western Himalayas but also marks the incorporation of Spiti into the Kingdom of Ladakh. Along with a number of other feudatory kingdoms and sub-principalities, Spiti was from then onward loosely administered by governors appointed by the kings of Ladakh. The nature of Ladakhi control over the Spiti valley, until its annexation by Rāja Gulab Singh round 1840, is still ambiguous, and the administration of the main Gelugpa monasteries of the valley seems to have remained under the jurisdiction of the central Tibetan government.

Following the conquest of the area, the rNam rgyal dynasty seems to have established a palace (Tib. *Pho brang*) in Kaza (Tib. *mKhar tse*) at a well-located distance between the capital Dangkhar and the monastery of Kyi (Tib. *dKyil*) from where the incarnations of Lochen Rinchen Zangpo acted as the main Gelugpa religious authority in the valley.³⁷ It is probable that a castle meant as a garrison post was also built on top of the ridge during that time, dominating both the village and the monastic complex of Dangkhar.³⁸ It eventually became the seat of governors (Tib. *no no*) of unclear origin, who according to Petech, were entitled to be called “king” along with seven other feudatory chiefs of the Kingdom of Ladakh.³⁹ Other functionaries and representatives of the Ladakhi administration residing at Dangkhar were castellans (Tib. *mkar dpon*) and ministers (Tib. *blon po*).⁴⁰ The origin of these dignitaries cannot be ascertained at present and their occurrences in historical sources and inscriptions are few and far between.⁴¹

Nevertheless, the political relationship between Spiti and Ladakh was frequently disrupted for short periods of time during which Spiti would either return under the political control of the central Tibetan government (i.e. between 1683 and 1687) or under the authority of neighbouring principalities, such as Kulu in the late 17th and early 18th centuries, and Purig between 1734 and 1758. The control of commercial routes, trade activities, and the levying of taxes were, however, sensitive aspects of the political control exerted by the Kingdom of Ladakh over Spiti. The socio-economic conditions in Spiti during the 17th- 19th century, which have been documented by Jahoda, tends to indicate that the political interference with the local power structures were unobtrusive, and were essentially confined to the collection of taxes levied in kind (i.e. barely). While the administrative system (Tib. *chos gzhis*) in Spiti contributed to the economic sustainability of its monasteries on the one hand, an annual tribute composed of funds, grain, cloth, and paper was also due to the kings of Ladakh.⁴²

As a place of conjoined political and religious significance, the monastery of Dangkhar bears witness to these customs. In 2010, three partially dissimulated granaries adjusted within the walls of the main building were documented by the Graz University of Technology. They constitute archaeological evidence attesting customary practices which lasted until the first half of the 20th century.⁴³ Furthermore, a detail of the consecration-banquet scene, represented on the south-western wall of the upper temple, seems to illustrate, as we have seen, the payment of a tribute.

37 See TUCCI 1935: 41, n1.

38 See “THE SPITI VALLEY: A PAWN ON THE SOCIAL-POLITICAL LAND OF WEST TIBET” on page 107.

39 See PETECH 1977: 155.

40 See “PATERNAL CLANS” on page 126.

41 See “THE CASTELLAN and THE CHAMBERLAIN” on page 116.

42 JAHODA 2007, 2008 and 2009.

43 See “SOCIAL PRACTICE and ARCHAEOLOGICAL EVIDENCE” on page 118.

The sacks of grains and bundles of cloth loaded on the back of the mules would have been part of the annual revenues paid to the kings of Ladakh. The presence of soldiers escorting the convoy clearly reinforces this interpretation as the tribute would also have included large amounts of money.

The political authority and legitimacy of the kings of Ladakh was not only based on their ability to appoint functionaries, levy taxes, and dispatch armed contingents to the edges of the realm. As Buddhist monarchs they were entailed to protect the doctrine, support monastic institutions, and patronise the construction of religious edifices both in Ladakh and in West Tibet. Despite the political hegemony of the central Tibetan government and the religious prevalence of the Gelugpa school throughout the Himalayan belt, other polities may have favoured different religious orders in the course of their history. From the 17th century onwards, the rNam rgyal dynasty established a personal relationship with the 'Brug pa bka' brgyud tradition. The nomination of sTag tshang ras pa as court chaplain during the reign of King Seng ge rnam rgyal is after all emblematic of that period and for that very same reason came to be praised on the walls of the upper temple.

However, political tensions between the Kingdom of Ladakh and Tibet often proved to be detrimental to ecumenical inclinations and religious freedom. In the 17th century, the Ladakhi spiritual allegiance to the 'Brug pa bka' brgyud order under the reign of King bDe ldan rnam rgyal (r. 1642 – 1694) led in part to the Ladakh-Tibet-Mughal war of 1679–1684. The interference of Ladakh in a dispute opposing Lhasa and the Kingdom of Bhutan, another 'Brug pa supporting state, and the apparent hostility of bDe ldan rnam rgyal towards Gelugpa institutions in the Western Himalayas, severely antagonised Tibet.⁴⁴

In this context, the patronage and construction of the upper temple during the Ladakhi hegemony in West Tibet must unquestionably be attributed to a member of the rNam rgyal dynasty who was eager to promote religious values and historical bonds shared by both the people of Spiti and Ladakh. The narrative emphasising religious discourse and dynastic legitimacy which is suggested on the walls of the chapel does not only serve to highlight a common cultural heritage but also contributes to position its benefactor as an undisputed universal monarch whose spiritual credence and political authority would have gone back to the time when the Land of Snows was predestined by Śākyamuni to become a new Buddhist realm.

44 From the point of view of central Tibetan historiography, the Lhasa regent Sang rgyas rgya mtsho (1653 – 1705) notes “[The king of] Ladakh, Seng ge rnam rgyal, out of religious tolerance, was relatively fond of the Gelugpa tradition. But later on, in accordance with the saying that a wicked child comes from an extinct lineage and malevolent thoughts come from the decrease of merits, being absorbed face down, his devotion towards the 'Brug pa order increased and all the Gelugpa monasteries of Ngari became impoverished. Lately, the descendant of the Dharma king of Tibet, Lha bla ma Zhi ba 'od, reincarnation of the stainless prince Mu tig btsan po, established the monastic complex of Tholing where under the patron-priest relationship of the king of Ngari, rNam rgyal lde dpal bzang po, and the master Ngag dbang grags pa, the Gelugpa order took its true colour. But as the scriptures recall “a butter lamp does not shine forth from a land infested with venomous snakes”. And although the local laity and clergy were largely and clearly faithful to the Gelugpa sect, the monastic community [of Tholing] was reduced to thirty monks due to the pernicious blindness of bDe ldan rnam rgyal who had cast the shadow of destitution upon the kingdom and the church alike”.

La dwags seng ge rnam rgyal phan grub mtha' ris med nas dge lugs la nye ba tsam yod 'dra yang | rigs brgyud zad kar bu ngan dang bsod nams zad kar bsam ngan skye ba'i dpe bzhin physis skor zhal thur gzigs la thug pas 'brug phyogs su dad 'dun ches pa'i mnga' ris phyogs kyi dge dgon tshang ma nyag phra zhing | nye lam bod chos rgyal gyi gdung dri ma med pa lha sras mu tig btsan po'i skye srid lha bla ma zhi ba 'od kyi btab pa'i mtho lding gi chos sde 'di nyid mnga' bdag rnam rgyal lde dpal bzang pod dang chos rje ngag dbang grags pa mchod yon nas dge lugs rnam dag pa'i tshos mdog yin rung | bstan bcos las | sbrul gdug gnas pa'i sa phyogs su || sgron me gsal kyang 'od mi 'byin || zhes yul mi skya ser byings dge lugs la dad pa'i snang ba dkar kyang bde ldan rnam rgyal gyi gdug pa'i mun pas bsgrigs te grwa pa sum cu skor tsam las chos srid gnyis ka shin tu nyag phra ba zhiig 'dug pa |; see *Vaidūrya ser po* 1998: 460.

Based on the popularity of the figure of sTag tshang ras pa and its iconographical development on the murals of Ladakh, along with the identification of the five Gelugpa masters of the north-western wall and the establishment of the iconographical theme to which they belong, it is likely that the upper temple was constructed sometime during the first half of the 18th century, in all probability during the reign of King Nyi ma rnam rgyal (r. 1694 – 1729). Succeeding the disastrous reign of bDe ldan rnam rgyal, King Nyi ma rnam rgyal successfully managed to bring back harmonious relationships with Lhasa and the Gelugpa order. He first married bSod nams rgya mtsho, a lady belonging to the nobility of Central Tibet, who was escorted to Ladakh by two representatives of the government in 1694.⁴⁵ Ngag dbang blo bzang bstan 'dzin, who was his younger brother and a monk, visited Tashi Lhunpo and Lhasa where he had an audience with the young 6th Dalai Lama between 1697 and 1699. The main Gelugpa monasteries of Ladakh along with those of other schools were eventually placed under the authority of Drepung monastery (Tib. 'Bras spungs). Emulating his great-grandfather King Seng ge rnam rgyal, and regardless of his support to Tsongkhapa's followers, Nyi ma rnam rgyal remained devoted to the 'Brug pa bka' brgyud sect and appointed Ngag dbang rgyal mtshan (1647 – 1732), an eminent master from Bhutan, as the spiritual advisor of the Ladakhi court.⁴⁶

Additionally, Nyi ma rnam rgyal was praised as a Bodhisattva dharma king (Tib. *chos kyi rgyal po sems dpa' chen po*) whose devotional yearning was meant to establish all sentient beings in vast fields of merits.⁴⁷ His activity as a patron and protector of the doctrine was therefore irrespective of political or sectarian allegiance. As we are informed, “The Dharma king presented gold water and votive lamps to Lhasa and Samye in particular, and to every temple of Tibet. He made offerings to all lamas without preference and served tea and victuals to monastic congregations. He honoured all the monasteries placed under him, large and small, without discrimination. He unreservedly commissioned statues made of gold and silver, scriptures, and erected walls made of carved maṇi slates. He ordered the printing of consecration formulae, small, medium, and large, for the construction of sacred images. [...] He printed the praise to Mañjuśrī Gang blo smon lam, the Shes bya mkha' dbyings, the gSer'od g.yang skyabs, the complete Buddhist canon, and the Le bdun, and bestowed dharma gifts to all laypeople and monastics. Prayer wheels made of gold, silver, and copper, as well as a great variety of dhāraṇī images were realised”.⁴⁸ Nyi ma rnam rgyal abdicated in 1729, leaving the throne to his son bDe skyong rnam rgyal, and eventually passed away in 1739.

Likewise, his activity as a patron in Spiti is well attested by material evidence and so corroborates aspects of the literary tradition. While visiting the area in 1933, Tucci recorded inscriptions which recall that the Nyi ma rnam rgyal financed the renovation of the Sa skya pa monastery of Kaza. On their way up to the monastery, passing by a long maṇi wall, Tucci and Gherzi examined and photographed countless votive inscriptions bearing the name of King Nyi ma rnam rgyal, and occasionally those of local dignitaries as well.⁴⁹

45 For the main events related to the life of Nyi ma rnam rgyal; see PETECH 1977: 81-100.

46 Ngag dbang rgyal mtshan arrived in Ladakh in 1706 where he acted as priest court until 1712; see YONTEN DARGYAY and SORENSON 2008: 133-176.

47 Nyi ma rnam rgyal was bestowed the kingship and through his deep aspiration of Bodhisattva dharma king commissioned a great variety of sacred representations [to establish] all migratory beings in vast fields of merits. Nyi ma rnam rgyal g.yis rgyal srid la mnga' gsol ba'i chos kyi rgyal po sems dpa' chen po'i thugs smon lam chen pos sku gsung thugs rten la sogs 'gro ba yongs kyi bsod nams bzhin du mang du bzheng |; see *Ladakh Chronicles* 1987: 63.

48 lHa sa bsam yas kyi btsos pa'i bod kyi gtsug lag khang thams cad | gser chab | dkar me | bla ma ris med skyabs rten | dge bdun sogs la mang skol | rang zhab kyi chos lde che chung thams cad la | nsnyen bkur ris med | gser dngul gyi rgyu las | rang mos kyi lha sku | gsung rab | rdza nang gi m Ni ring mo | sku gsung thugs rten bzheng rgyu'i gzung bar rgyas bsodus | 'jam sdud bzang gsum | 'jam dbyangs bstod pa gang blo smon lam | shes bya kha dbyings | gser 'od g.yang skyabs | bka' sgyur ro cog | le bdun | par byas legs par bsgrub nas | skya ser thams cad chos sbyin | gser dngul zangs gsum g.yis ma Ni the skor | chos kyi zung bar sna mang bsgrub |; see *Ladakh Chronicles* 1987: 64-65.

49 Unfortunately, the recording of these inscriptions and the photographs taken by Tucci were not at our disposal for further study; see TUCCI 1935: 41 n1, 43-44.

Based on the above, it seems reasonable to say that the king of Ladakh would not have limited his devotional activity to the Sa skya pa monastery of Kaza alone but would have contributed to the realisation of images and the construction of religious edifices in other parts of the Spiti valley. Tabo monastery must certainly be accounted for one and it would not be surprising to find further evidence of King Nyi ma rnam rgyal's patronage in situ. As for the capital Dangkhar, with its established Gelugpa monastery and newly built castle, it would have unquestionably deserved a tangible testimony of the Ladakhi political and religious power over the area.

CONCLUSION

Located half way between the ancient monastery, the old village, and the castle of the governor, the upper temple probably never belonged *sensu stricto* to the monastic complex of Dangkhar. This would explain why even today its maintenance and the daily offering of a butter lamp behove to the villagers and the monks to do so. Based on its dimensions and the nature of the iconographical programme, it can be surmised that the chapel did not assume any specific religious purpose. It was neither a place for communal services, ritualistic practices, or initiations.

The skilful composition of its murals, organised around fourteen figures of almost life-size dimension, contributes to highlight iconographical themes which would have been appreciated differently by the religious expert, the lay devotee, the local farmer, or a member of the Spitian nobility. The variety of its themes, as we have demonstrated, covers most of the essential aspects of the Buddhist tradition in its Indo-Tibetan form. The health and longevity programme addresses the treatment of diseases, the purification of negative karma, and the restoration of the Bodhisattva vows. The propitiation of apotropaic and protective deities facilitates the removal of internal and external obstacles. The representation of worldly protectors and wealth deities answers both religious and regional needs. They secure and ensure the prosperity and means of the household, the monastery, and the community at large. The syntagmatic association to this group of somewhat exogenous elements, such as the three Dharma kings of Central Tibet and the autochthonous deities of Ngari, raises interpretational difficulties. Their presence on the entrance wall of an 18th century temple in Spiti instigates an interesting shift of narrative which we have tried to address. As the three main recipients of worship and principal religious figures, the depictions of Śākyamuni, Atiśa, and Tsongkhapa constitute a cultural trend well attested on murals of West Tibet after the 15th century. As a result, the wall-paintings necessarily include the principal dharma protectors and meditational deities worshipped by the Gelugpa tradition which largely pervades the iconographical programme. However, the appearance of Kargyudpa and 'Brug pa figures suggests external influences in the composition of the iconographical programme as the 'Brug pa bka' brgyud order is mostly absent from the Spitian religious landscape. Headed by the 17th century sTag tshang ras pa, who is represented among the secondary figures of the main devotional wall, the 'Brug pa presence evidently points towards the neighbouring Kingdom of Ladakh.

In this context, cultural, religious and historical elements, both local and global, converge together in order to celebrate the patron of the temple, who is portrayed as a religious monarch and a son of the Buddhas.

Although the iconographical programme is of Gelugpa tenor, the royal benefactor assesses his spiritual credence by emphasising the common foundation between Tsongkhapa's tradition and the 'Brug pa bka' brgyud order to which he adheres. The depiction of the founders of the bKa' gdams pa tradition, along with the figure of Nāropā, not only reaffirms the Indian derivation of the two lineages represented on the walls, but situates the religious discourse within the broader geographical and historical context of Western Tibet. The revitalisation of Buddhism embodied by the figure of Atiśa offers the means to restate the role performed by King sKyi lde Nyi ma dgon's dynasty in the 10th-11th century. Subsequently, the political legitimacy of our royal donor rests on the reorganisation of narratives asserting the intermediate position assumed by the rulers of West Tibet in their role of direct heirs of the central Tibetan kings and forefathers of the western dominions. The iconographical programme of the upper temple celebrates the longevity and prosperity granted to the Kingdom of Ladakh (i.e. therefore Spiti as well) by its royal patron, rightful inheritor of the Tibetan Empire and the Kingdom of Guge, a Dharma king and a Bodhisattva.

Based on the narratives at work and the development of iconographical themes, in addition to literary and material evidence related to the first half of the 18th century, we have put forward the name of King Nyi ma rnam rgyal as the likely royal patron of the upper temple. In line with the religious policy of his great-grandfather King Seng ge rnam rgyal, Nyi ma rnam rgyal was particularly active in promoting religious concord both inside and outside his dominions. Emulating the patron-priest relationship characterised by the figure of sTag shang ras pa, he had a prominent 'Brug pa scholar from Bhutan join him as spiritual advisor. Whether or not it is true, we would like to believe that Byams mgon Ngag dbang rgyal mtshan, the court chaplain of King Nyi ma rnam rgyal, is somewhere represented on the walls of the upper temple; perhaps next to the royal benefactor of the consecration-banquet scene. In any case, the person responsible for the iconographical composition of the murals must have been of remarkable intellectual stature. The adhesion of Nyi ma rnam rgyal to the 'Brug pa bka' brgyud tradition did not prevent him from lavishly supporting other sects. Following the reign of his predecessor, he restored direct contact with the Lhasa government and liberally honoured the Gelugpa establishments.

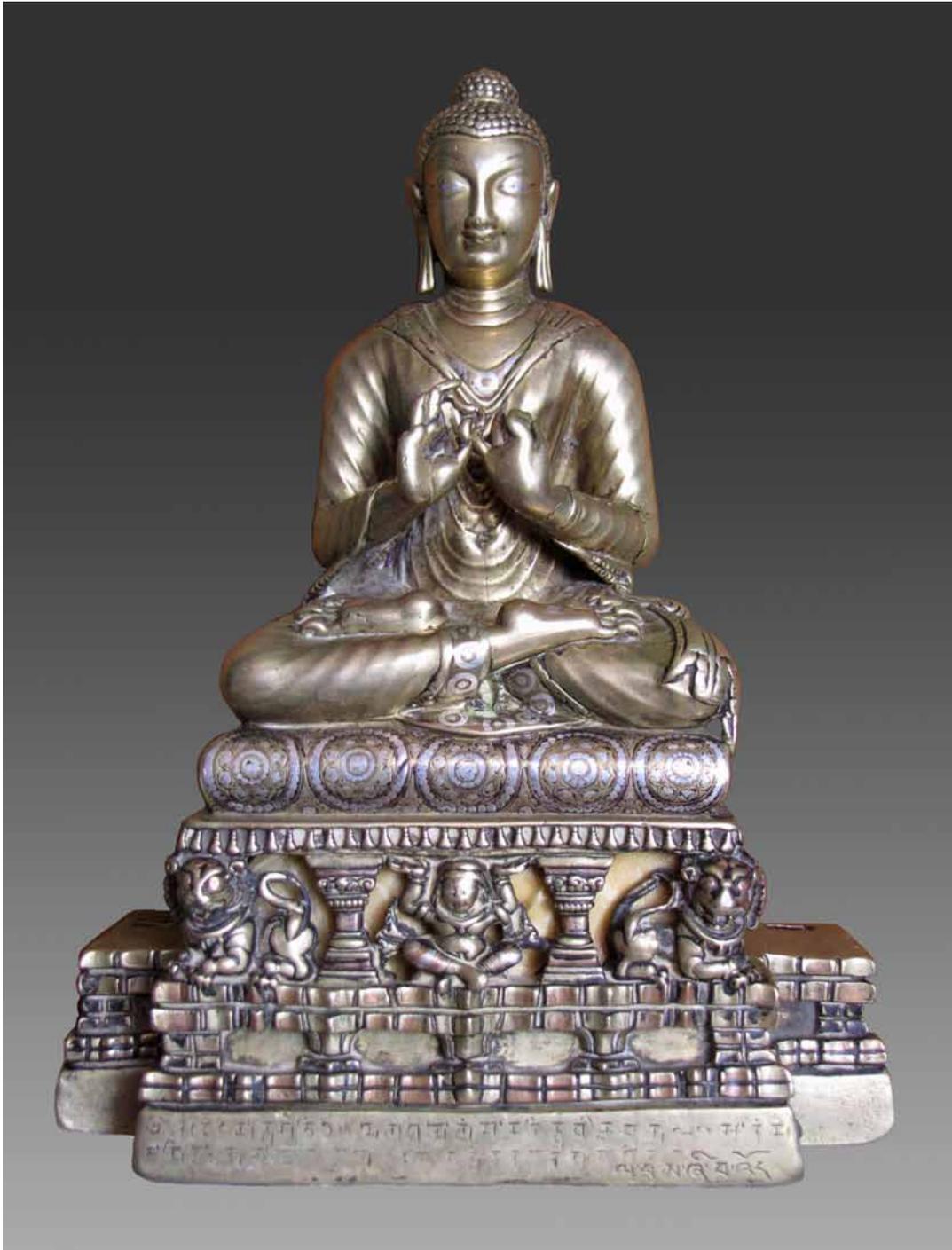
As we have seen, the Ladakhi authority in Spiti was entrusted to functionaries whose main prerogatives were the levying of taxes and the collection of revenues for the annual tribute. According to Petech, "control over Spiti was always a vague affair". After the reign of King Nyi ma rnam rgyal, however, the political status of Spiti was soon to be disputed again. The position of the Spiti Valley as a buffer zone between contiguous areas of diverse socio-cultural significance and political regimes reaffirms its importance for the understanding of the Western Himalayas. Among the last monarchs of the rNam rgyal dynasty, Nyi ma rnam rgyal is the most likely candidate for the sponsorship of the construction of the upper temple.

Dominating the Spiti River downhill, the upper temple of Dangkhar and its festival of images is a vivid testimony to the flamboyant history of Western Tibet. The immediate preservation of its wall-paintings is therefore *un devoir de mémoire*.



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BRONZE OF DANGKHAR



194 Buddha from Dangkhar. 8th century, Gilgit. Bronze with silver and copper inlay, 26 cm high. Front view; Retouching Matt Linden. LN 2010.

6 BRONZE OF DANGKHAR

Lobsang Nyima Laurent

LHA BLA MA ZHI BA 'OD'S EIGHTH CENTURY BRONZE FROM GILGIT ¹

*This paper is dedicated to the monks of Dangkhar,
Heirs of the great translator and royal monk,
lHa bla ma Zhi ba 'od (1016 - 1111).*

In 1973, an officer of the Indian Government registered an exceptional bronze belonging to the monastery of Dangkhar (Tib. *Brag mkhar*) under the Antiquities and Art Treasures Act. The bronze was simply labelled “Buddha” and was dated to the tenth-eleventh century. It is in all likelihood the last time that anyone took any historical interest in this statue, and with good reason as the Buddha had been then locked away by the monks as the most precious and potent living image in their possession, displayed only on rare occasions for the sake of the local community.

In 2010, the members of the restoration team led by the Graz University of Technology were granted the opportunity to view the statue. It was evident at first glance that the Buddha was not just any kind of bronze, but was indeed a unique work of art. Moreover, it was also apparent that the juxtaposition of two inscriptions on the pedestal, the first one in Sanskrit and the second in Tibetan, would provide a rather different dating. The restoration team was eventually allowed to take photographs of the statue as part of the documentation work. Later that summer, the author was personally entrusted with the study of that bronze.

During the fieldwork which followed in summer 2011, we had hoped to further study the statue in order to compare the recording of the inscriptions based on the photographs taken the previous year. Our request was, however, apologetically denied. In the interim, the monks had performed a divination (Tib. *gzan rtags 'phen pa*) vis-à-vis the future of the image, the outcome of which was final. The statue would no longer be shown in public. Yet, the monks renewed their request and insisted that we proceed with the study of the bronze and its inscriptions.

This paper thus presents some preliminary observations and remarks on this unique artwork. The first section is devoted to the bronze *per se*. The inscriptions are treated in the following section, while a general discussion attempts to situate the production and journey of this remarkable statue. By doing so, we hope that the wishes of the monastic community of Dangkhar shall be fulfilled.

¹ “lHa bla ma Zhi ba 'od's Eighth Century Bronze from Gilgit” in *Revue d'Études Tibétaines*, on-line journal hosted by Yale and Cambridge Universities, N°26, April, 2013, pp.195-214.



195 Buddha from Dangkhar. 8th century, Gilgit. Bronze with silver and copper inlay, 26 cm high. Side view; Retouching Matt Linden. LN 2010.

I. PHYSICAL DESCRIPTION AND STYLISTIC ANALYSIS

The bronze from Dangkhār shows a Buddha seated in *vajraparyāṅkāśana* (Tib. *rdo rje'i skyil krung*) on an impressive dais, with the hands held in *dharmacakra mudrā* (Tib. *chos kyi 'khor lo'i phyag rgya*). A sumptuous cushion is placed on a sophisticated pedestal which bears two inscriptions on the front side. A separately cast mandorla (Skt. *prabhāmaṇḍala*, Tib. *'od kyi dkyil 'khor*) can be inferred due to the presence of two slots at the back of the pedestal and a protruding lug-slot behind the cushion.² The bronze measures twenty-six centimetres in height and is made of brass.³ Extensive silver and copper inlays were used to embellish the cushion, the undergarment, the eyes, and the lower lip of the Buddha. The modelling of the body delineates a sturdy silhouette. Some visible features such as the hands and cheeks are fleshy. The face is rather oval and the head slightly oversized. The nose is broad and flat. The eyes are slanted and made of silver inlays. The mouth seems faintly pursed with the upper lip summarily delineated and the lower lip inlaid in reddish-brown copper. Altogether, these physical traits generally conform to the Kashmiri style of Buddhist cast bronzes.⁴

The clothing of the Buddha deserves particular attention. A symmetrically draped garment falls in concentric folds towards the navel which appears underneath. In the back, the folding of the garment follows a similar wavy pattern. The hem of the garment is draped over the left shoulder while its lower part covers the left knee. A peculiar V-shaped neckline reveals an undergarment made of copper and silver roundels, with similar fabric also visible at the ankles. The addition of a V-shaped neckline to the traditional monastic robe (Skt. *kāṣāya*) is a distinctive feature of many Kashmiri bronzes produced in the eighth and ninth centuries. This iconographic innovation, as we shall discuss, seems to have originated in Central Asia before being specifically promoted among the Buddhist communities of Śāhi descent. The cushion on which the Buddha is seated is not only an aesthetic marvel but also a technical feat of casting. The front edge of the cushion is ornamented with pearl and flower roundels extensively inlaid in silver and copper, while on the sides of the cushion different floral roundels with boldly outlined petals are presented.

The top of the cushion is also finely decorated with roundels and arabesque-like motifs. Small copper inlays were also used on both side edges and on top of the cushion. The rear section of the cushion bears no motifs. Finally, a fringe of tassels runs around the upper part of the pedestal below the cushion. Other Buddhist bronzes from Kashmir-Gilgit display the same consummate skill in the rendering of textile motifs. The roundel and floral design is believed to reflect strong Sasanian and Sogdian influences; a cultural trend that developed throughout Asia between the seventh and the ninth centuries.⁵

2 Christian Luczanits has appropriately remarked that the two slot on the pedestal must have welcomed additional figures, possibly two standing Bodhisattvas, personal communication, March 2013.

3 As recorded by the Indian Government Officer in 1973.

4 For a detailed list of these characteristics; see PAL 1973: 729-30 and 1975: 30.

5 See HELLER 2006: 178-83.



196 Buddha from Dangkhar. 8th century, Gilgit. Bronze with silver and copper inlay, 26 cm high. Back view; Retouching Matt Linden. LN 2010.

As for the pedestal, it is a large rectangular throne made of stylised stones and architectural features. The composition is dominated by a central *yakṣa* (Tib. *gnod sbyin*) placed between two columns and a pair of lions. The spirit is seated cross-legged and wears a *dhoti* inlaid in copper and silver stripes. His eyes are inlaid in silver while his mouth is made of copper. The symmetrical composition of the pedestal is completed with two roaring lions depicted in profile while their heads face forward. The combination of decorative elements, such as stylised stones, columns, *yakṣa*, and lions, is commonly found on the pedestals of bronzes attributed to the regions of both Kashmir and Gilgit.⁶ Among the many bronzes cast from these two areas, two statues offer more than just fortuitous similarities with the Buddha from Dangkhar.

First and foremost is the well-known Buddha of the Norton Simon Foundation,⁷ and secondly a bronze now preserved at the Potala Palace in Lhasa.⁸ These three bronzes share not only close stylistic resemblance, but more remarkably a number of technical aspects. Their cushions, for instance, display the very same skill in the use of silver and copper inlays to create roundel motifs. In addition to the rich Central Asian textile pattern, structural similarities also include the stylised stone base with its architectural elements, and figures. The face of the Buddha from Lhasa, along with the uncovered parts of the neck, right arm, hands, and feet, were later painted with cold gold hence dissimulating their original appearance. Compared to the bronze from Dangkhar, the head of the Norton Simon Foundation sculpture seems rounder and less chubby. However, both faces are arguably alike in the stylistic treatment of the eyes, the mouth, the elongated earlobes, and the curly hair.⁹ As for the garb of those three Buddhas, the hem of their upper garment (Skt. *uttarāsaṅga-saṃghāti*) fall behind the left shoulder in careful folds and cover the left knee in the very same way.¹⁰

A detailed comparison of these images, based on stylistic and technical criteria, incontrovertibly shows that these bronzes were manufactured around the same time by artisans belonging to the same atelier or guild.

In an attempt to identify the figures of the donors represented on the pedestal, Pal has discussed the possibility that the bronze in the Norton Simon Foundation might have been commissioned by the king Jayāpīḍā Vinayāditya (c.779 – 813) of Kashmir.¹¹ As we shall see, the dedicatory inscription engraved on the bronze from Dangkhar provides an approximate dating but suggests a different origin.

6 Additional figures such as the portraits of donors, bodhisattvas, griffins, birds, and deer may also be represented. For stylistic similarities with the rock base the bronze from Dangkhar; see SCHROEDER 1981: fig. 15F, 16A, and 16B.

7 For a complete description of the Simon bronze; see PAL 1973: 731-35 fig.5 and 1975: 92 fig.22a, b and also SCHROEDER 1981: 118 fig.16A.

8 For the bronze conserved in the Li ma lha khang inside the Potala Palace; see SCHROEDER 2001: 106-9 fig. 19 A-C or again 2008: 46-47 fig. 6.

9 The head of the Buddha from Dangkhar has lost some of its relief due to considerable rubbing off as the original curly hair behind the left ear still attests. The extremity of the nose was possibly polished or damaged too.

10 The folds of the hem draped over the left shoulder of the Buddha from Dangkhar appear sketchier and may have been rubbed off a little. The adjustment of a mandorla at the back of the bronze may also explain why some elements were not executed with the same attention to detail. Compare for example the hair pattern at the back of each head.

11 Pal's argument is thin but deserves to be reported here when he suggests that "of the four figures, the two located centrally are no doubt more important than the others. The male, wearing a diadem of pearls, holds what appears to be a musical instrument of some sort [...] If the male was meant to represent a king, rather than a mere musician, then one might identify him as Jayāpīḍā, who is known to have been accomplished in all the performing arts." It follows that "the female of course would represent his queen, and the bearded figure carrying a garland may portray his minister".

As for the monk knelt behind the queen "he is very likely the royal preceptor, or an important monk such as Sarvajñamitra" who was a contemporary of king Jayāpīḍā. Pal sensibly concludes that whether or not his identification is accurate "such a spectacular bronze could hardly be anything less than a royal benefaction"; see Pal 1975: 25-6. In a later publication, however, Pal has suggested a second reading based on a stylistic comparison with a stone stele where a similar female figure holding a pot is the goddess earth, and the whole scene is interpreted as Māra's defeat; see PAL 2003: 28-29.

THE V-SHAPED NECKLINE CONUNDRUM

A lengthy discussion of this corpus of texts would however exceed the scope of the present paper.¹² As suggested earlier, the apparition of a V-shaped neckline on the *saṃghāti* may possibly be more than just an iconographical innovation induced by a cultural trend. This element, which is often referred to as a cloud collar or cape in recent publications, is believed to have been popular during the Sasanian period (c. 224–651) before being promoted by Central Asian tribes such as the Śāhis and the Tocharians, according to von Schroeder.¹³ It does not only appear on later Kashmiri images of Buddhas but also decorates the figures of the donors that are often represented on the pedestals of those bronzes. It had been assumed that the collar-cape innovation reflected the ethnic origin of the donors, or the artists, and could possibly denote the social status of the former. In addition to the imitation of garment designs, the high quality execution of these bronzes and the dedicatory inscriptions often recorded on their bases prove that these images were commonly commissioned by wealthy patrons such as local sovereigns and royal family members.¹⁴ As an iconographical novelty, the V-shaped neckline and other regal adornments were eventually associated with representations of Buddha Vairocana (Tib. *rNam par snang mdzad*).¹⁵ Tantric literature produced in the sixth and seventh century was influential in establishing Vairocana as the teacher of tantra *par excellence*.¹⁶

The socio-political environment of their production, as demonstrated by Davidson, contributed to the maturation of tantric literature through the internalization of medieval models revolving around the embodiment of kingship and the exercise of dominion.¹⁷ In this new paradigm, “the Buddha was depicted as a king with his crown, clothed in all the ornaments of royalty” and would now extend his benevolent and mighty power over his specific dominion or maṇḍala.¹⁸ In this process, Kashmir did not only become a major repository of learning and practice for esoteric Buddhism (Skt. *Mantrayāna*, Tib. *sngags kyi theg pa*), but assumed the function of a laboratory for new iconographical forms. The V-shaped neckline may well have been an aesthetic response of regional *élite* to the pervading epiphanies of Lord Vairocana in tantric literature.

12 Among the early so called esoteric canon, works such as the *Sarvadurgatipariśodhana* (Tib. *De bzhin gshegs pa dgra bcom pa yang dag par rdzogs pa'i sangs rgyas ngan song thams cad yongs su sbyong ba gzi brjid kyi rgyal po'i brtag pa phyogs gcig pa zhes bya ba*), the *Sarvatathāgatattvasaṃgraha* (Tib. *De bzhin gshegs pa thams cad kyi de kho na nyid bsdu pa zhes bya ba theg pa chen po'i mdo*), and the *Mahāvairocanaābhisambodhi* (Tib. *rNam par snang mdzad chen po mngon par rdzogs par byang chub pa rnam par sprul pa byin gyis rlob pa shin tu rgyas pa mdo sde'i dbang po'i rgyal po zhes bya ba'i chos kyi rnam grangs*) were instrumental in establishing Vairocana as the teacher of tantra and initiated the shift from Buddha Śākyamuni to the figure of Vairocana. For the significance of yoga tantra and the *Sarvatathāgatattvasaṃgraha* within esoteric Buddhism in India and Tibet; see WEINBERGER 2003. For the *Mahāvairocana Tantra*; see Hodge 2003.

13 See PAL 1973: 735–36 and 1975 : 25, 41 and SCHROEDER 1981: 108.

14 For instance the crowned Buddha in the Rockefeller Collection which was donated by Śaṅkarasena, the great lord of the elephant brigade, and her wife, Princess Devaśriyā; see SCHROEDER 1981: 118 fig.16B. Also, the remaining pedestal of a lost bronze preserved in the Rubin Museum of Art where two of the four donors are the Queen Śrī Paramadevi Maṅgalaḥṣikā and the King Śrī Paṭola Deva Śāhis Vajrādityanandi from Gilgit. HINÜBER 2007: 41–2 pl.6.

15 The role of the V-shaped collar-cape in the iconographical development of Vairocana remains problematic and, as suggested by Heller, “cannot yet be fully assessed nor used exclusively to determine the identification of Vairocana”; see HELLER 1994 : 75–76.

16 In Mahāyāna literature, the *Avataṃsaka Sūtra* (Tib. *mDo phal po che*) already contains some “proto-tantric” elements. This sūtra was seminal in disseminating Vairocana's role as the cosmic Buddha and promoting his cult throughout Asia. The last chapter of the *Avataṃsaka Sūtra*, which is independently known as the *Gaṇḍavyūha Sūtra* (Tib. *sDong po bkod pa'i mdo*), details the spiritual journey of Prince Sudhana (Tib. *Nor bzang*) and opens with an apologetic account of the historical Buddha as the emanational embodiment (Skt. *nirmāṇakāya*, Tib. *sprul sku*) of Vairocana. This narrative eventually found its artistic expression inside the main temple (Tib. *gtsug lag khang*) of Tabo Monastery founded in 996. Sudhana's pilgrimage is here depicted on the southern wall of the temple, as part of a complex iconographical programme which serves a three dimensional architectural and artistic representation of Sarvavid Vairocana's maṇḍala (Tib. *kun rig rnam par snang mdzad kyi dkyil 'khor*)

For a review of “proto-tantric” elements in the *Gaṇḍavyūha Sūtra*; see Osto 2009. For the art and history of the monastic complex of Tabo; see Klimburg-Salter 1997 and 2005. For the depiction and narrative of Prince Sudhana in the main temple at Tabo; see STEINKELLNER 1995 and 1996.

17 In particular chapter 4 “The Victory of Esoterism and the Imperial Metaphor”; DAVIDSON 2002: 113–68.

18 See DAVIDSON 2002: 168.

In this regard, some bronzes manufactured in northwest India during the eighth and ninth centuries ambiguously represent a fusion of Buddha Śākyamuni (Tib. *Shākya thub pa*) and the transcendent Vairocana. For example, the striking altarpiece preserved in the Rockefeller Collection is paradigmatic of the aesthetic conflation between these two figures that are often shown making the gesture of the turning of the wheel.

While the crowned Buddha seated on a lotus between a pair of stūpas displays all the attributes of a body of enjoyment (Skt. *sambhogakāya*, Tib. *longs sku*), the two deer and the dharma wheel on the pedestal suggest that the sculpture represent Śākyamuni's first sermon.¹⁹ The study of the dedicatory inscription indicates that the donors were members of nobility from Gilgit and dates the sculpture to the first half of the eighth century.²⁰

Furthermore, the recast of Śākyamuni's enlightenment in tantric terms and his subsequent conflation with Vairocana is clearly indicated in a short *sādhanā* composed by Jayaprabha (Tib. *rGyal ba'i 'od*) around the end of the eighth century and the beginning of the ninth century. The passage is worth citing:

On a lion throne, upon a lotus, is seated the Bhagavān, Vairocana, with a golden complexion, crowned uṣṇīṣa, and satin garments. It is said that Śākyamuni's clothing, colour, and form can also be venerated thusly.²¹

19 See SCHROEDER 1981: 118 fig.16B.

20 For the names of the donors and the translation of the inscription see footnote 11 and SCHROEDER 1981: 118 fig.16B.

21 I am grateful to Dr Amy Heller for drawing our attention to this passage and its implications to the subject at hand.

pad ma seng ge dān de la sangs rgyas bcom ldan 'das rnam par snang mdzad gser gyi kha dog thor tshugs dang dbu rgyan dang cod pan can dar la'i stod g.yogs dang smad g.yogs can nam/shak ya thub pa'i cha byed dang kha dog dang dbyibs ji skad du grags pa'ang rung stel; see P 3489: 361b.



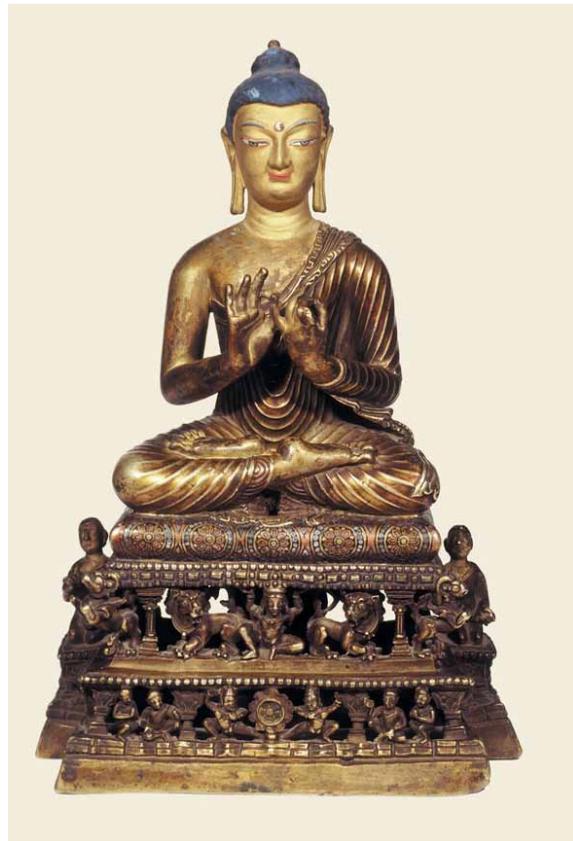
197 Buddha from Dangkhār. 8th century, Gilgit. Bronze. Top view; Retouching Matt Linden. LN 2010.

The Tibetan idiom *ji skad du*, which usually marks a reported fact or quotation, highlights that by the ninth century the idea of interchangeability between the two figures is rather common in tantric literature. Moreover, this passage also implies that early representations of Vairocana must not have departed greatly from those of the historical Buddha, and therefore did not necessarily follow strict textual antecedents. This situation probably corresponded to a formative phase during which artists were not necessarily familiar with the emerging tantric literature but had to answer the specific demands of instructed patrons, hence contributing to the progressive establishment of new iconographical forms.

Consequently, the statues preserved at the Norton Simon Foundation and at the Potala in Lhasa are instrumental in understanding the bronze from Dangkhar and its genesis. As stated earlier, these three bronzes were without a doubt cast by the same artisan-craftsmen. Despite the great stylistic and technical similarities, the Buddha from the Norton Simon Foundation possesses a somewhat classical facture, if not archetypal, that the two other avoid. The historical Buddha, Śākyamuni, is shown with his right hand in *bhūmisparśamudra* (Tib. *sa gnon*) symbolising the moment of his enlightenment.



198 Buddha and Adorants on the Cosmic Mountain. c. 700 India: Kashmir. F.1972.48.2.S. Photograph © The Norton Simon Foundation, Pasadena.



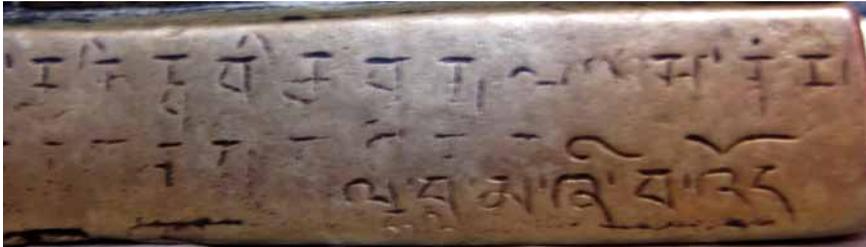
199 Buddha Śākyamuni. Patola-Shahi of the Gilgit Valley; 7th Century Potala Collection. Photo: Ulrich von Schroeder, 1993.

As for the upper garment, the elegance of the drapery is the aesthetic pinnacle of earlier Buddhist statuary. Except for the V-shaped neckline, the upper garment worn by the Buddha from Lhasa, which falls in large and graceful arcs, perfectly matches the one found on the Buddha from Dangkhar. These three images thus offer a significant iconographical sequence, which may not necessarily reflect a chronological order, where the artisan-craftsmen progressively incorporated “dress novelties” while conforming to the main canonical requirements.

Compared to the classical depiction of Śākyamuni, it is now quite evident that the artists responsible for the bronze from Dangkhar attempted to integrate or accommodate new concepts. The V-shaped neckline worn in an impossible fashion is after all emblematic of a period of iconographical adjustment. Whether the statue from Dangkhar can be formally identified as a representation of Lord Vairocana is ultimately of little significance as other bronzes produced in Kashmir-Gilgit during the eighth and ninth century demonstrate that an iconographical conflation based on emerging tantric literature and socio-cultural norms existed between the historical Buddha and his transcendent form.



200 Buddha from Dangkhar. 8th century, Gilgit. Bronze.
Front view; Retouching Matt Linden. LN 2010.



201 Detail of the inscription. LN 2010.

II. THE INSCRIPTIONS

There are two inscriptions engraved on the lower part of the pedestal. The first one is recorded in proto-*śāradā* script while the second inscription is written in Tibetan *dbu chen*. The first inscription, which runs on two lines, helps to identify the name of the donors, their origin, and the date of donation. The second inscription, which was added later on in the lower right hand corner of the base, provides the name of a single individual.

I. The main inscription on the base reads as follows:²²

/1/ # *saṃ* 88 *mārga śu di 15 deyadharmo yaṃ śākyabhikṣuvīkavarmanā sārthaṃ mā*
/2/ *tāpitroḥ ācāryopadhyāyebhyaḥ | (rādāhu)puru(ṣa) kena (paphaṭonena)*

“In the Year 88, on the 15th day of the bright half of Mārga[śirṣa]. This is the pious gift by the Śākyabhikṣu Vīkavarman together with his parents, the teachers and instructors. Together with the (Rādāhu)-Burusho Paphaṭona (Papharṭana)”

II. The second inscription reads:

lHa bla ma zhi ba 'od

The style of the dedicatory inscription is consistent with other inscribed bronzes from Kashmir-Gilgit. The reading of the first line and the first half of the second line is almost certain.

The beginning of the inscription is preceded by the *siddham* symbol and opens with the date of donation.

The bronze was offered in the year 88, on the fifteenth day of the month *Mārgaśirṣa* which corresponds to the months of November-December.²³ In conformity with the hundred-year revolution based *laukika* era, the exact century is not mentioned as a result of which the calendar year for that figure can be either 712 or 812. The main donor is the Buddhist monk (Skt. *śākyabhikṣu*) Vīkavarman. The second syllable is not absolutely certain and an alternative reading such as *vīra-*^o cannot be excluded. The other donors mentioned are the mother and father (Skt. *mātāpitarau*) of Vīkavarman as well as his teachers (Skt. *ācārya*) and preceptors (Skt. *upādhyāya*). The sentence ends with a concluding punctuation character (Skt. *daṇḍa*).

The reading of the second half of line two is highly conjectural and the possible designation of an additional donor as *puruṣakena* is of utmost importance. As noted elsewhere by von Hinüber, compounds in *°puruṣa* or *°vuruṣa* may reflect an early form of the word Burusho.²⁴ In this context, the additional contributor named Paphaṭona, or alternatively Papharṭana, must have been from the Upper Indus. The occurrence of a Burusho name would hence connect this bronze to Gilgit as it was expected from the stylistic point of view. The composition of the inscription and the consistent use of case endings suggest that the name of the last benefactor must have been added slightly later. The reason for the commissioning and meritorious donation is not stated.

²² We are entirely indebted to Oskar von Hinüber without whom this inscription would have remained silent. The following translation and analysis are the fruits of his generosity and erudition; personal communication, February 2012.

²³ Oskar von Hinüber remarks that a reading 87 of the two figures cannot be excluded but seems less likely; personal communication, February 2012.

²⁴ "Auf eine ethnische Zugehörigkeit scheinen die auf *°puruṣa* oder *°vuruṣa* endenden Komposita zu deuten, wenn man darin eine frühe Form des Wortes « Burusho » sehen darf." ; see HINÜBER 2004: 146.

The reading of the Tibetan inscription does not pose any problem. The name of Zhi ba 'od, and the title (Tib. *lHa bla ma*) associated with it, refers to a member of the royal family of the Guge-Purang Kingdom (Tib. *Gu ge Pu hrang*) in West Tibet.²⁵ Although most of the biographical details of his life remain unknown, the main information regarding this charismatic figure of the later dissemination of Buddhism (Tib. *bstan pa phyi dar*) can be summed up as follows.

Born Yongs srong lde in the dragon year 1016, the third son of King lHa lde (r. 996 – 1023/4), and younger brother of Byang chub 'od (984 – 1078), he came to be known as Pho brang Zhi ba 'od when he received his full ordination at the age of forty, in 1056. lHa bla ma Zhi ba 'od was a disciple of the notorious *lo tsā ba* Rinchen Zangpo (958 – 1055) and eventually became the first translator of royal descent. He translated six major works, commissioned the translation of at least three other texts,²⁶ and most certainly took part in the religious council held in Tholing (Tib. *mTho lding*) where he must have spent most of his life.²⁷ As the religious centre of the kingdom, Tholing was the recipient of a variety of pious benefactions and constructions. Zhi ba 'od and his nephew King rTse lde, for instance, were responsible for the edification of the three-storey gSer khang which involved the commitment of more than two hundred master-artists and artisans. The temple was completed within five years in 1071.²⁸

Zhi ba 'od also bestowed the main temple of Tholing (Tib. *dBu rtse*) with clay statues representing the complete cycle of Sarvavid Vairocana (Tib. *Kun rigs*).²⁹ Finally, lHa bla ma Zhi ba 'od is remembered for his religious ordinance (Tib. *bka' shog*) issued in 1092 in which he severely condemned apocryphal works, perverted tantras (Tib. *sngags log*), and called for the upholding of the *bka' gdams pa* tradition.³⁰ The demise of the royal monk and translator in the iron hare year 1111 marks the end of the later diffusion of Buddhism in West Tibet.

It is unfortunately unclear how the royal priest and translator found himself in the possession of an eighth century bronze from Gilgit. This does not represent, however, an isolated case as religious objects and implements of great value would easily be bestowed as tokens of political allegiance or religious fervour. Besides, many such objects, Kashmiri bronzes in particular, found their way into the belongings of the royal family of West Tibet.³¹ The concluding section of this paper attempts to retrace the journey of the bronze from Dangkhar and must henceforth be taken with all due caution.

25 For his complete royal title *bod kyi dpal lha btsan po*; see KARMAY 1980: 3.

26 For a detailed list of his translation works and subsequent analysis of their colophons; see KARMAY 1980: 4-10.

27 The religious council (Tib. *chos 'khor*) of Tholing started in the fire dragon year 1076 and is believed to have lasted for a year and a half; see VITALI 2003: 65.

28 See VITALI 1996: 311-316 and VITALI 1999.

29 By doing so, Zhi ba 'od seems to have followed in Byang chub 'od's footsteps and conformed to a religious and artistic trend as his older brother adopted a similar iconographical programme when he had the monastery of Tabo renovated in 1041/2; see footnote 15 for the bibliographical references

30 See KARMAY 1980: 11-17.

31 For example, three bronzes conserved at Tashigang (Tib. *bKra shis sgang*) in Upper Kinnaur (Tib. *Khu nu*), H.P., bear the Tibetan inscription of Lha Na ga ra dza (988 – 1026), Ye shes 'od's younger son; see Thakur 1997: 971. In addition to these three images, at least fifteen other inscribed bronzes belonging to the former have been documented; see Von Schroeder 2001: 84. Also, a Buddha from Kashmir-Gilgit with a two line Sanskrit inscription engraved on the base on which the name of king rTse lde (Tib. *mNga' bdag chen po rTse lde*) was later added; see HELLER 2001.

III. FROM GILGIT TO SPITI: A NARRATIVE

Based on stylistic criteria, it has long been assumed that the Buddha Śākyamuni in the Potala collection and the one from the Norton Simon Foundation were connected to the Palola Śāhis of the Gilgit Valley although no tangible evidence has ever been available to provide definite ground. In this regard, the Buddha from Dangkhar with its dedicatory inscription confirms that these three images were undeniably executed by specialist artisans belonging to the same region, if not the same atelier, and approximately at the same time.

According to the date given in the inscription (712/812), the period of production of these bronzes can thus be inferred as being the first half of the eighth century.³² This period does not only correspond to a culmination of Buddhist artistic patronage under the reign of King Nandivikramādityanandi,³³ who ruled the kingdom of Belur (Tib. *Bru zha*) in the Gilgit Valley between c. 696 – 715,³⁴ but also precedes the conquest of the area by the expanding Tibetan Empire sometime between 720 and 745. A dating of a century later seems therefore less likely.

Despite the paucity of historical data regarding the Palola Śāhis of Gilgit, the small kingdom of the Upper Indus once hosted a thriving Buddhist culture as indicated by the recovery of Buddhist manuscripts, the presence of petroglyphs, rock inscriptions, and the high quality Buddhist bronzes produced in the area.³⁵ Wealthy groups of donors, which often involved *donatrices* of royal decent, played an active role in commissioning or donating images of great value. Their names and titles came down to us in the form of dedicatory inscriptions. Occasionally, they were represented on pedestals and book covers, clothed in their most flamboyant attire.

As suggested earlier, the feudalisation of early medieval India and the promotion of esoteric Buddhism (Skt. *Mantrayāna*, Tib. *sngags kyi theg pa*) through the agency of royal or aristocratic patronage hence prompted aesthetic innovations. In this regard, the artists of north-western India, those of Kashmir and Gilgit in particular, gradually incorporated novelties based to a greater or lesser degree on written sources. This formative phase of iconography played an essential role in the depiction of Buddhas, notably as universal rulers (Skt. *cakravartin*, Tib. *'khor los sgyur ba*), rendering their identification sometimes difficult.³⁶

As art historians often struggle to find textual antecedents to iconographical models, the apparition of a V-shaped neckline on Buddhist bronzes reaffirms the role performed by socio-political norms in the production of new doctrinal forms and their material illustrations. The formal identification of the Buddha from Dangkhar remains thus problematic. It can be seen as Buddha Śākyamuni at best, as an artistic attempt to illustrate the transcendental nature within the plane of immanence or, from the art historical point of view, as a possible early representation of Vairocana.

32 Von Schroeder surprisingly dates the production of the Buddha Śākyamuni from the Potala 7th century while the bronze from the Norton Simon Foundation is dated 750 – 850; see SCHROEDER 1981: 118 fig. 16A and 2001: 106-9 pl. 19A-C.

33 Among the most spectacular bronzes donated by King Nandivikramādityanandi is the Crown Buddha Śākyamuni preserved in the Pritzker Collection. The statue was commissioned in 715/16 and bears many structural similarities with the three Buddhas discussed in this article; see HELLER 2006: 181-83. Also, a bronze of a Buddha holding a scripture in his left hand from the Pan-Asian Collection, which was donated in 714/715 by the king of the Belur Kingdom and which is dubiously identified as Tathāgata Akṣobhya by von Schroeder; see SCHROEDER 1981: 118-119 fig. 16C. Both bronzes display the figure of King Nandivikramādityanandi on their base. As shown by von Hinüber, the Bhagadatta family of Gilgit was a “truly devoted Buddhist royal family”; see HINÜBER 2003.

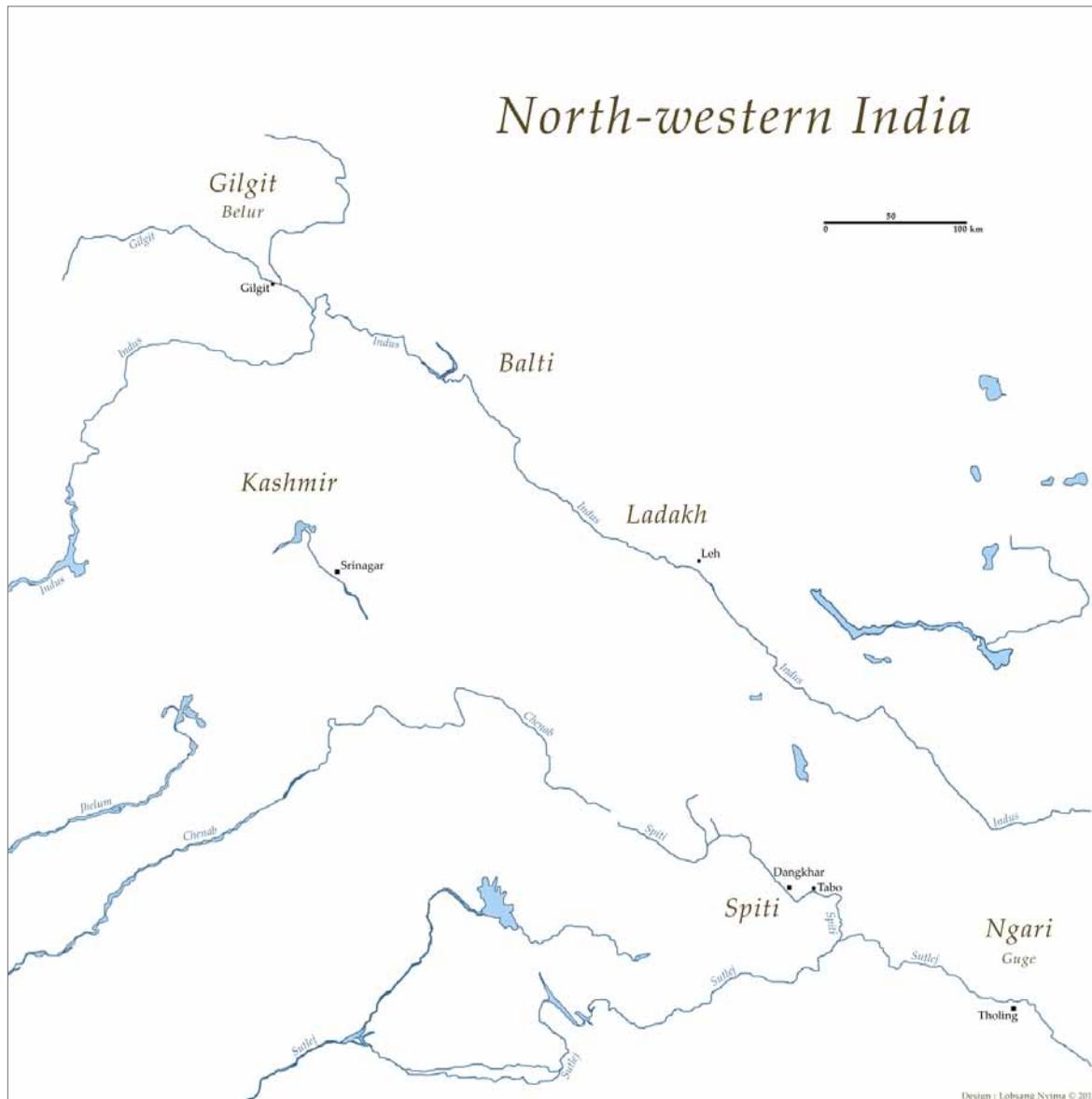
34 The geographical delimitation of the Belur Kingdom has been subject to much discussion; see DENWOOD 2008: 13-15.

35 For a comprehensive monograph on the Palola Śāhis of Gilgit; see HINÜBER 2004.

36 Quite surprisingly, a bronze from Gilgit depicting a Buddha holding his hands in *dharmacakra mudrā* is nominally identified as Lord Viśvabhū thanks to a dedicatory inscription dated 723/24; see HINÜBER 2007: 40-1.

Whatever the initial intention, the Buddha commissioned by the Śākya monk Vīkavarman in the year 712 must have appeared perfectly canonical when it was offered about three hundred and fifty years later to the rather conservative lHa bla ma Zhi ba who never missed the opportunity to describe himself as a Śākya'i dge slong.³⁷

37 See KARMAY 1980: 3.



202 Map of the north-western Indian area. LN 2012.

While cultural ties between West Tibet and north-western India during the late tenth and eleventh centuries involved the comings and goings of Tibetan translators, Indian paṇḍitas, master craftsmen, artisans, and merchants, it is yet our contention that the Buddha of Vīkavarman might have found its way to West Tibet through the matrimonial alliance formed between the royal family of Guge and the Kingdom of Gilgit. It is 'Od lde (993 – 1037), Zhi ba 'od's older brother, who sealed this alliance. Following his accession to the throne of Guge-Purang in 1024, the new king incorporated Maryül (Tib. *Mar yul*) to the kingdom and settled in Shel from where he administered his dominion.³⁸ It is probable that he married rGyan ne of Gilgit in the fire ox year 1037 in order to secure the north-western border of the kingdom.

Unfortunately, the situation deteriorated quite rapidly and 'Od lde had to undertake a military campaign against the Muslim Qarakhanid Turks (Tib. *Gar log*) of Gilgit that same year. The King of Guge was defeated and made prisoner. He eventually escaped and died of poisoning when he reached the capital of Balti (Tib. *sBal ti*). His demise was quickly followed by the sack of Tholing still in the year 1037.³⁹

This episode certainly highlights the political ties and friendly relationship that existed between the two Buddhist kingdoms. Whether the sumptuous bronze of Vīkavarman was offered to 'Od lde following his wedding with rGyan ne is a matter of pure speculation. It seems certain, however, that the statue from Gilgit came into 'Od lde's younger brother's possession only after 1056 when Yongs srong lde had his name changed into lHa bla ma Zhi ba 'od as it came to be inscribed on the base thereafter. The fine depiction and the high degree of execution of that bronze undoubtedly must have appealed to the royal monk. Moreover, as a translator and a monk himself, the dedicatory inscription written in the holy language of Sanskrit and the pious gift of a *sākyabhikṣu* from the past surely stirred his sense of filiation and orthodoxy. How long the bronze remained in the possession of the royal monk and translator, and how it ended up in the Spiti Valley is an altogether different matter. Again, it seems plausible that an object of such prestige must have been passed down from one generation to the next, or in this case from uncle to nephew as it is not clear whether Zhi ba 'od ever had any offspring.⁴⁰

It is therefore through his nephew king rTse lde that Zhi ba 'od's personal belonging might have reached Spiti. This hypothesis is supported by a short passage in the *mNga' ris rgyal rabs* which recalls that when king rTse lde was brutally murdered by a dissident branch of the royal family, three of his sons found refuge at Sang grag Brang mkhar, a toponym which suggests that a fortified palace could have overlooked the Spiti river as early as the last quarter of the eleventh century.⁴¹ This short detour through the land of speculative history should not obliterate the remarkable contribution of this bronze to the study of epigraphy, art, and history of Buddhism. From the eighth century up to today, the Buddha now preserved at Dangkhar Monastery in the Spiti Valley has been protected and worshipped as a unique image of devotion, acquiring over the centuries the longevity and sanctity of its guardians.

38 The kingdom of West Tibet was referred to as mNga' ris skor gsum and included the regions of Guge, Purang, Piti, Upper Kinnaur, Zaskar (Tib. *Zangs dkar*), and Ladakh (Tib. *La dwags*) also known as Maryül.

39 These events were reported in various Tibetan sources and commented at length by Vitali; see VITALI 1996: 281-93.

40 See HELLER 2010: 65-7.

41 See VITALI 1996: 125. This passage is of utmost importance for the history of Dangkhar. In the present state of preservation, the fortress-monastery bears no architectural, epigraphic or iconographical evidence of dating back to this time. Furthermore, a rounded fortified tower known as Takkar (Dangkhar) has also been documented in Zaskar; see HOWARD 1995: 81-2.

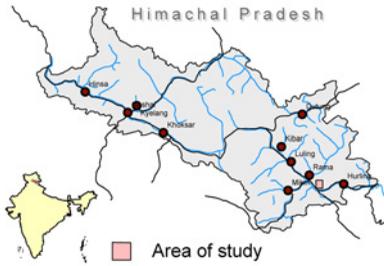




7

GEOTECHNICAL REMEDIATION STRATEGIES





203 Location of the Dangkhar monastery in Himachal Pradesh, India. TU Graz 2011.



204 Overview of Dangkhar village, showing locations of the ancient and new monastery. TU Graz 2011.

7

GEOTECHNICAL REMEDIATION STRATEGIES

D.S. Kieffer and C. Steinbauer

INTRODUCTION

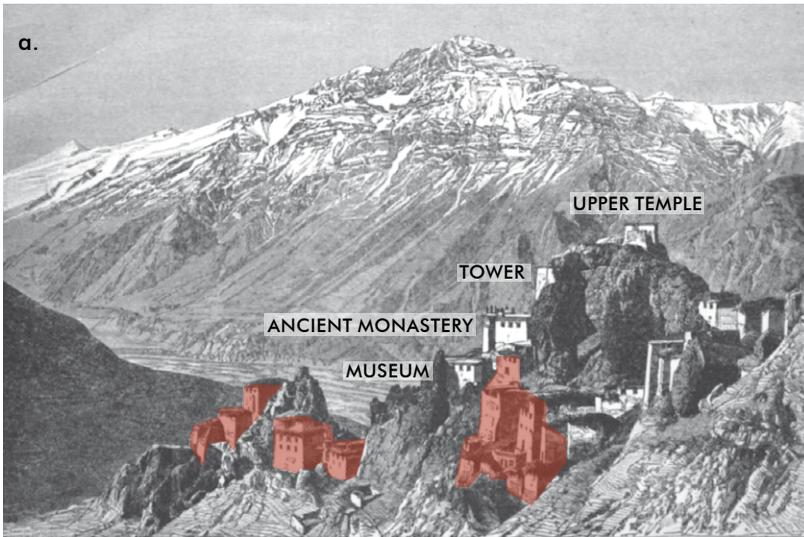
Dangkhar village, located within the Spiti valley of Himachal Pradesh in northern India, is the site of the historically significant Buddhist monastery of Dangkhar, that is considered as one of the five major monastic centers of the Spiti valley. As a result of local architectural and structural deficiencies, usage of the ancient monastery has been restricted, and a new monastery has recently been built at a site located about 350 m to the east. Figure 204 provides an overview of Dangkhar village, together with the castle of the No no and ancient and new monastery building locations. The building deficiencies are related to original design and construction methods, longevity of aging construction materials, and irregular maintenance and repairs. Geotechnical processes have also resulted in localized cliff encroachment and undermining of foundation elements.

PURPOSE AND SCOPE OF REPORT

The main purpose of this report is to summarize geotechnical processes that are relevant to the long-term stability of the ancient monastery and the castle of the No no, together with conceptual remediation strategies for mitigating adverse geotechnical conditions and processes.

In developing mitigation strategies, preference was given to solutions involving local construction materials and contractor capabilities, rather than sophisticated modern technologies that would have to be imported to the site at great expense. The information summarized herein is based on the following scope of work:

- Review of available literature pertinent to regional geologic and seismic conditions;
- Geologic mapping, field documentation, and completion of a comprehensive 3D LiDAR (Light Detection And Ranging) site survey, from June 25 to July 3, 2011; and,
- Geotechnical evaluation.



a.



b.



205 Historical portrayals of the ancient monastery and the surrounding buildings: (a) artist's rendition (Reclus, 1891), and (b) photograph published from Khosla, 1979. Red shaded structures no longer exist.

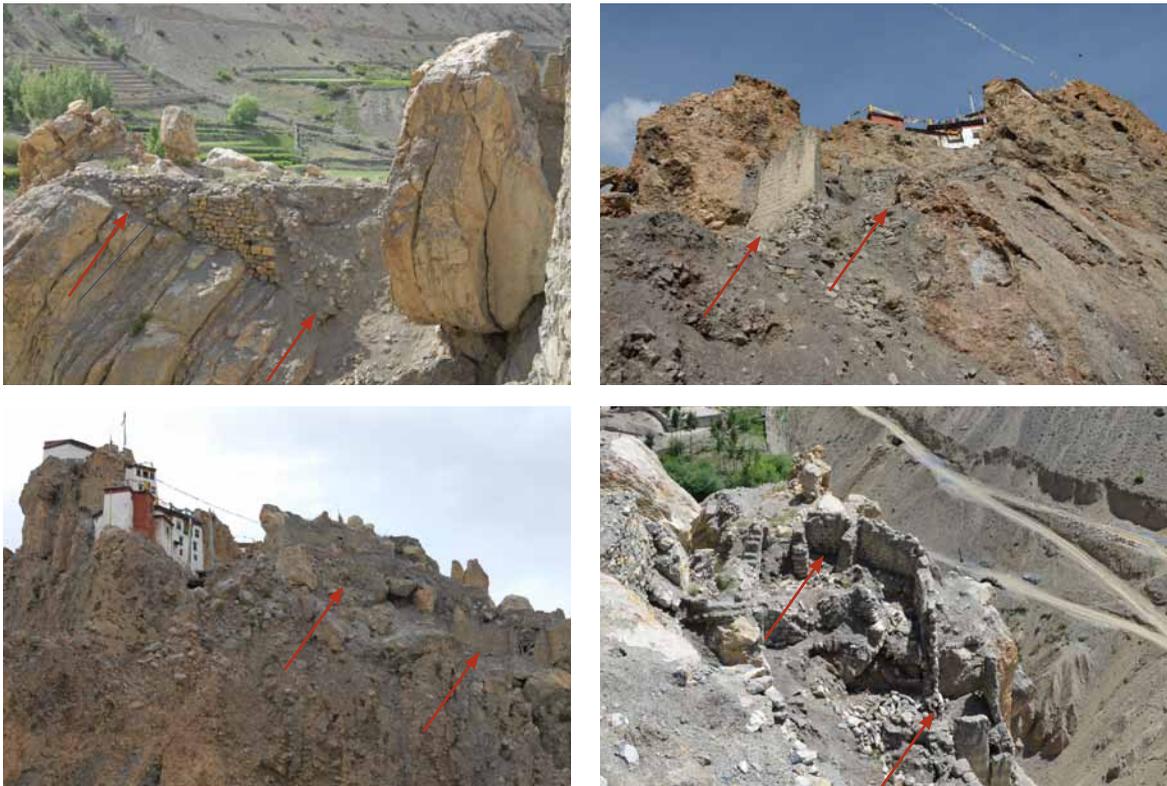
206 Condition of the existing ancient monastery, showing approximate areas of prior significant structures as indicated by historical portrayals. K&S 2011.

Cliff erosion is a long-term and ongoing process, and as depicted in figure 205 through 207, has likely contributed to the abandonment and/or destruction of several buildings that formerly occupied the cliffs of Dangkhar.

Figure 205 shows two historical portrayals of the ancient monastery and surrounding buildings. As indicated therein, several significant structures surrounding the ancient monastery are no longer in existence. The date of the historical photograph¹ is unknown, but considering that the author collected such photographs during his expeditions to the Western Himalayas, its vintage is judged to lie within the 1960's to 1970's.

Figure 206 depicts the existing condition of the ancient monastery from a similar viewpoint, and indicates the areas of prior significant structures. Figure 207 shows the remnants of several building foundations within these areas.

1 See KHOSLA, 1979: fig.145.

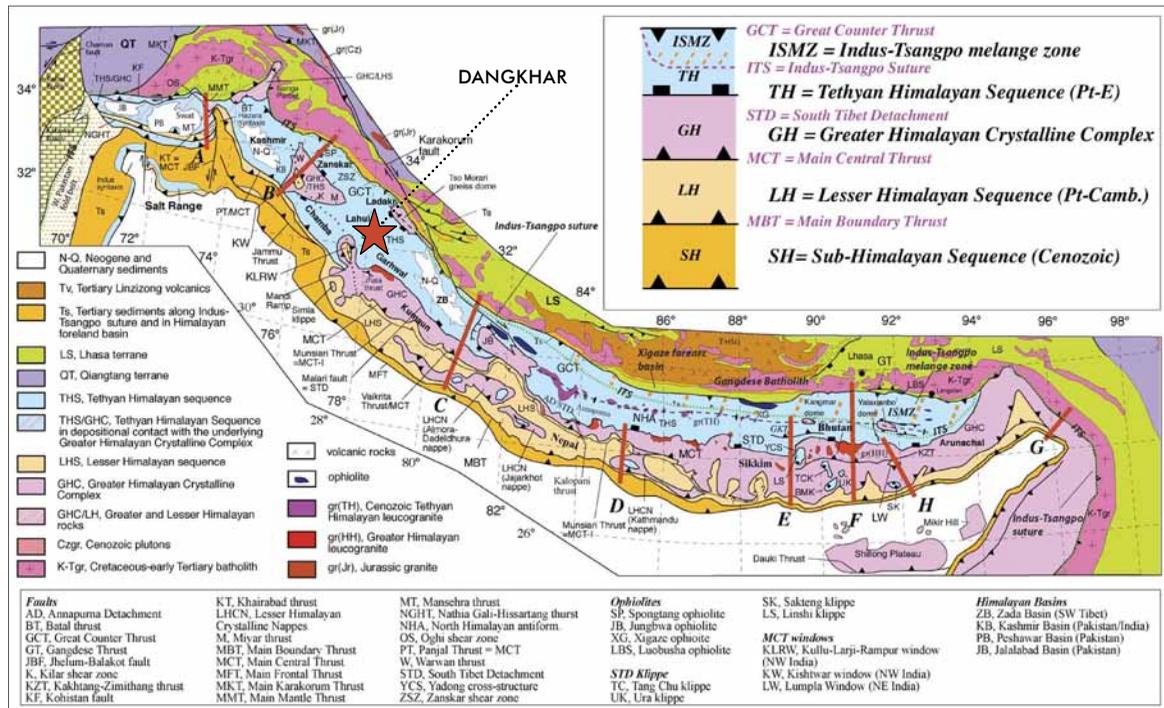


207 Foundation remnants within areas 1 and 2 of figure 206 (arrows point to the foundation - earth interface). K&S 2011.

GEOLOGIC AND SEISMIC SETTING

The geology of the Himalaya records the process of major continental tectonic collision. The India land mass has drifted northward for more than 70 million years (My). As the Indian and Eurasian continental masses neared, subduction of oceanic crust occurred, and continued until final closure of the ancient Tethys ocean. With closure of the ocean, collision of the continental plates commenced, with the Himalayas and Tibetan plateau being the main manifestation of approximately 55 My of continent-to-continent tectonic collision.

As shown in figure 208, four major lithologic/tectonic zones comprise the Himalayan orogen, with Dangkhari monastery being situated within the Tethyan Himalaya unit. The Tethyan Himalaya represents a composite synclinal structure having a width of approximately 100 km and a length of over 2000 km. The unit includes weakly metamorphosed sedimentary rocks that were originally deposited in the Tethys Ocean basin, then uplifted, faulted, and strongly deformed during the mountain building process. The Tethyan Himalaya is bordered to the south and north by the Zaskar Shear Zone and Indus Suture Zone, respectively.



208 Regional geology of the Himalayas, showing major lithologic/tectonic units. See YIN 2006:13-14.

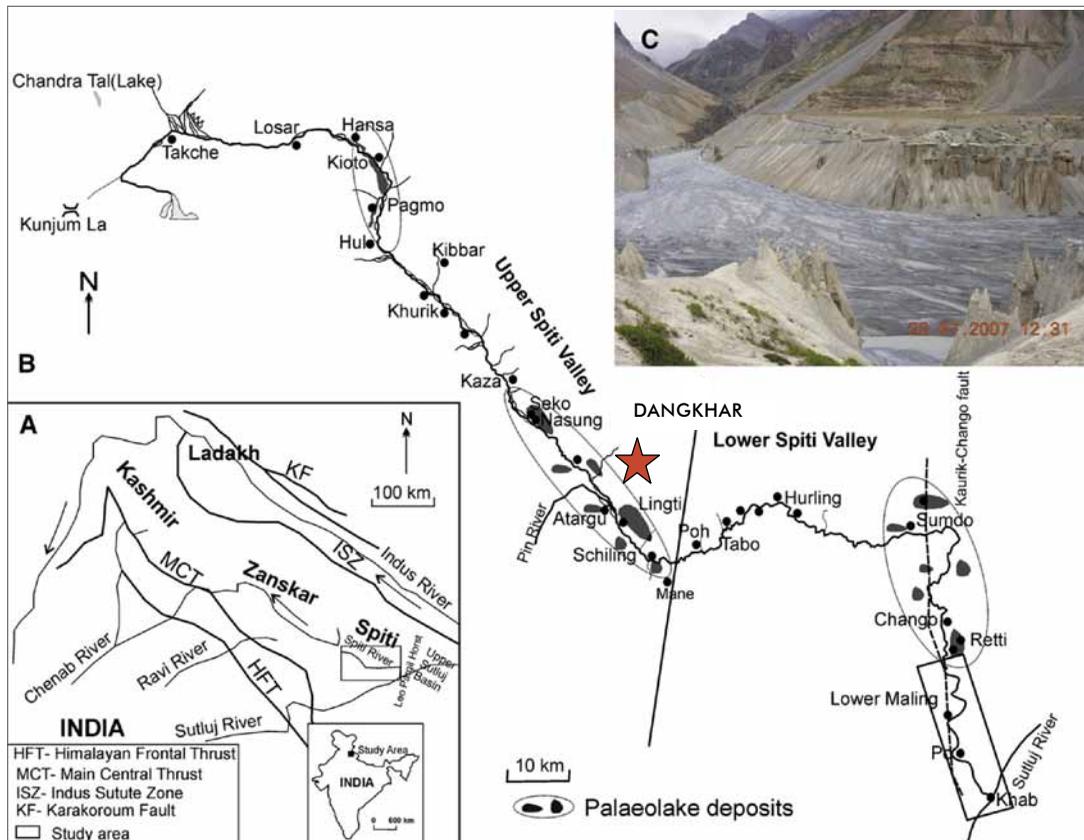
REGIONAL GEOLOGY

The geology of the Spiti valley includes Paleozoic successions of shale, sandstone, limestone and metasediments (e.g. quartzites, marble, and slate). Mesozoic formations are also present, and in the site vicinity include the Jurassic age Kioto limestone, the Triassic Spiti shale and the Cretaceous age Giupal sandstone. Structurally, the Spiti valley is situated in a pull-apart basin lying between the northwest-trending right lateral Karakoram Fault System along the northern margin of the Tethys Himalaya, and high angle faults along the southern boundary.²

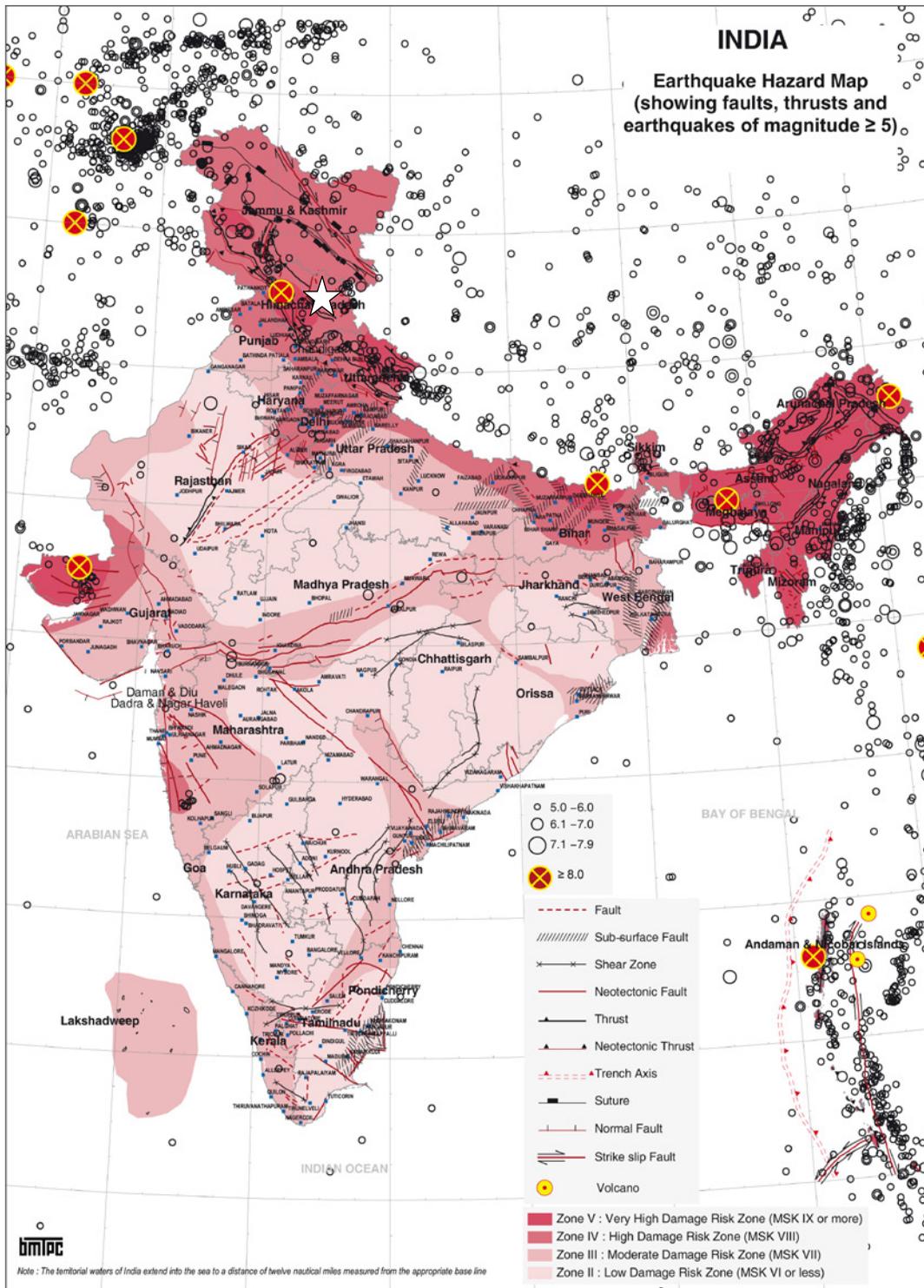
Based on geomorphic character, the Spiti valley is divided into the upper and lower Spiti valley. Braided channels and relict fluvio-lacustrine terraces are typical of the upper valley, with the lower valley being characterized by a meandering channel and local bedrock strath terraces. Significant quantities of lacustrine sediments locally flank the Spiti valley as terraces (fig. 209) and suggest the formation of paleolakes caused by landslide-induced damming of the Spiti river.³

² See NI and BARAZANGI, 1985; BHARGAVA, 1990.

³ See PHARTIYAL et al., 2009.



209 Geomorphic classification of the Spiti valley, showing locations of paleolake deposits, site location indicated by star. See PHARTIYAL et al. 2009:265.



210 Earthquake hazard map of India, showing faults, thrusts, and earthquake magnitudes ≥ 5 , site location indicated by star. BMTPC 2003.

REGIONAL SEISMICITY

Historically, the approximately 2000 km long Himalayan Frontal Arc (from Kashmir to Assam) has been seismically very active due to the ongoing collision between the Indian and Eurasian tectonic plates. More than a dozen earthquakes larger than magnitude 7.5 have occurred in this region since 1897.⁴

Recurrence intervals for earthquakes of magnitude 8 are estimated to be 200 to 270 years, and the amount of time required for the entire Himalayan Frontal Arc to be ruptured in a series of large earthquakes is estimated in the range of 180 to 240 years.⁵ The seismic hazard zonation for India (fig. 210) includes four categories, representing a spectrum of exposure ranging from low damage risk (zone II) to very high damage risk (zone V).

As shown in figure 210, Dangkhar monastery is situated within zone IV, which correlates to high damage risk. The conception of high damage is related to the expected Medvedev-Sponheuer-Karnik (MSK) intensity (an empirical scale which considers historically observed effects in earthquake source areas). Seismic zone IV corresponds to MSK level VIII, as defined below:

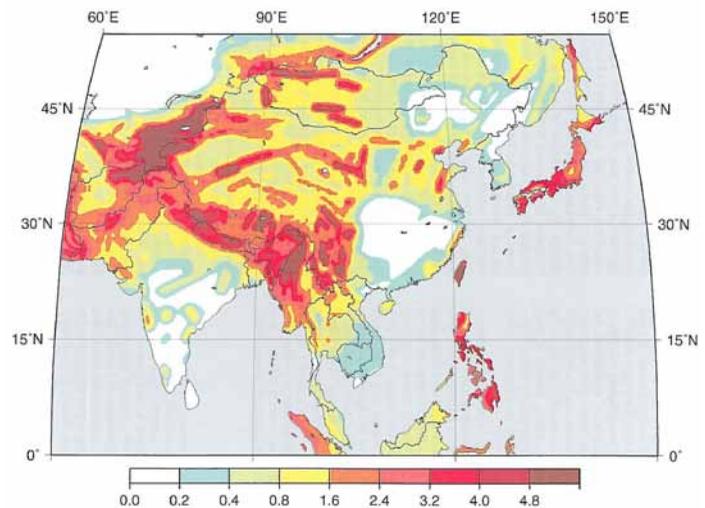
MSK VIII (damaging) - Many people find it difficult to stand, even outdoors. Furniture may be overturned. Waves may be seen on very soft ground. Older structures partially collapse or sustain considerable damage. Large cracks and fissures opening up, rock-falls.

Regional probabilistic seismic hazard assessments covering the study area provide estimates regarding the likelihood of certain thresholds of ground motion (acceleration) being exceeded over a typical structural design life (50 years). According to data published by the Global Seismic Hazard Assessment Program (fig. 211) the site is characterized as having a 10% chance of exceeding peak ground acceleration, in the range of 30 to 40 percent of gravity, over the next 50 years.⁶

4 See GUPTA, 1993.

5 See SEEBER and AMBRUSTER, 1981.

6 See Global Seismic Hazard Assessment Program (GSHAP) in continental Asia, 1999: 1167-1190.

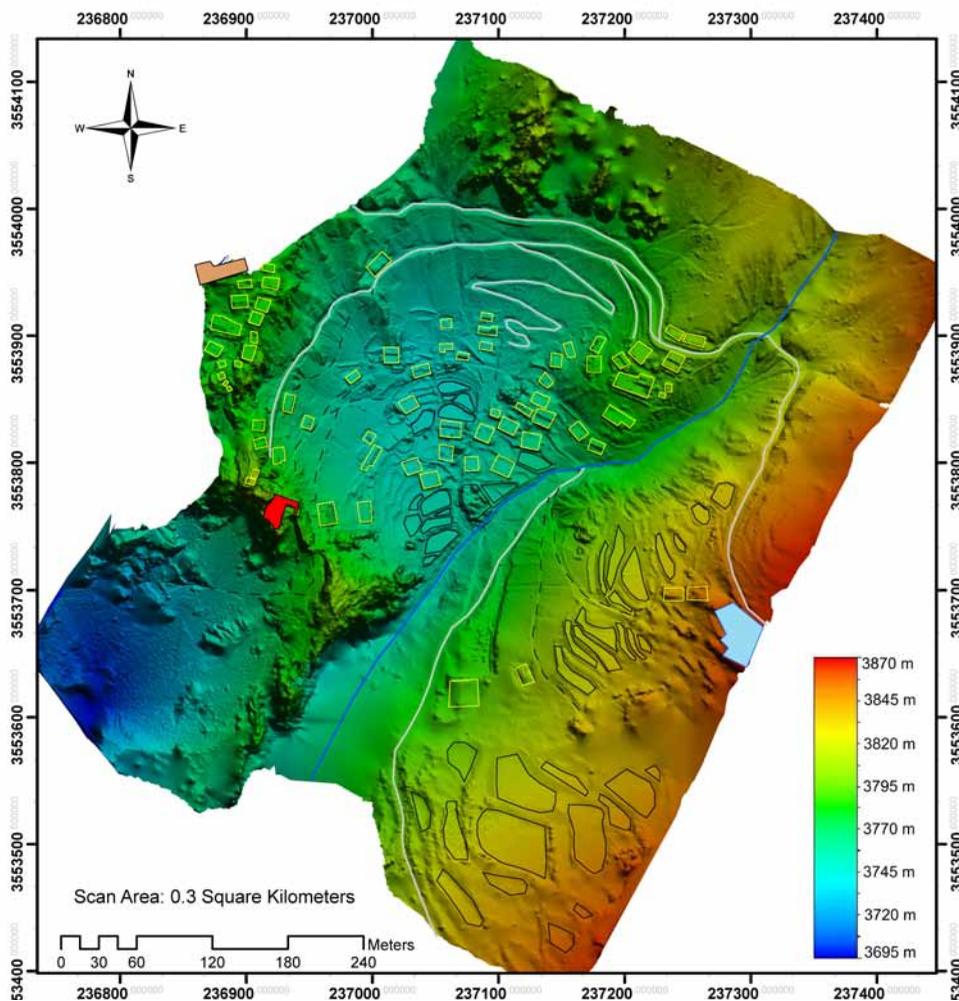


211 Seismic hazard map of Asia depicting Peak Ground Acceleration (PGA), given in units of m/s^2 , with a 10% chance of exceedance in 50 years. See ZHANG et al. 1999:1189.

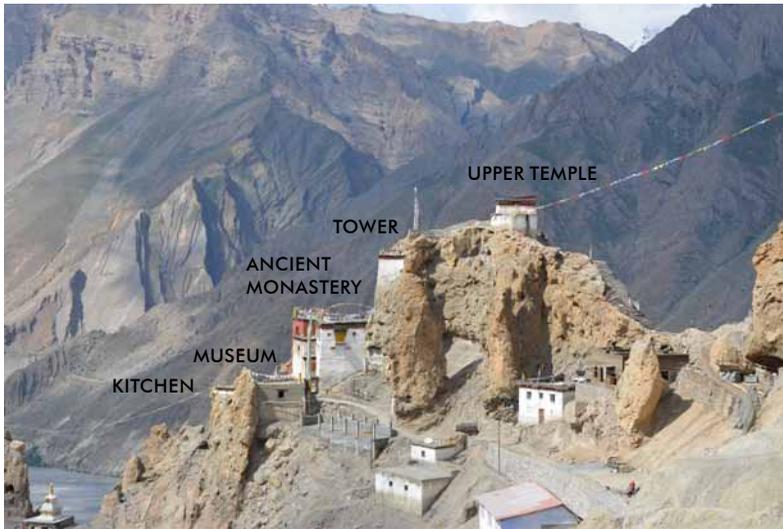
SITE CONDITIONS

The general layout of Dangkhar monastery and Dangkhar village are depicted in the LiDAR-generated false-color elevation base map of figure 212. The ancient monastery complex is situated along the edges of steep rock cliffs overlooking Spiti valley, with the main structures including the ancient monastery building with adjoining tower, kitchen, and museum (fig. 213). A separate upper temple structure is located above the tower.

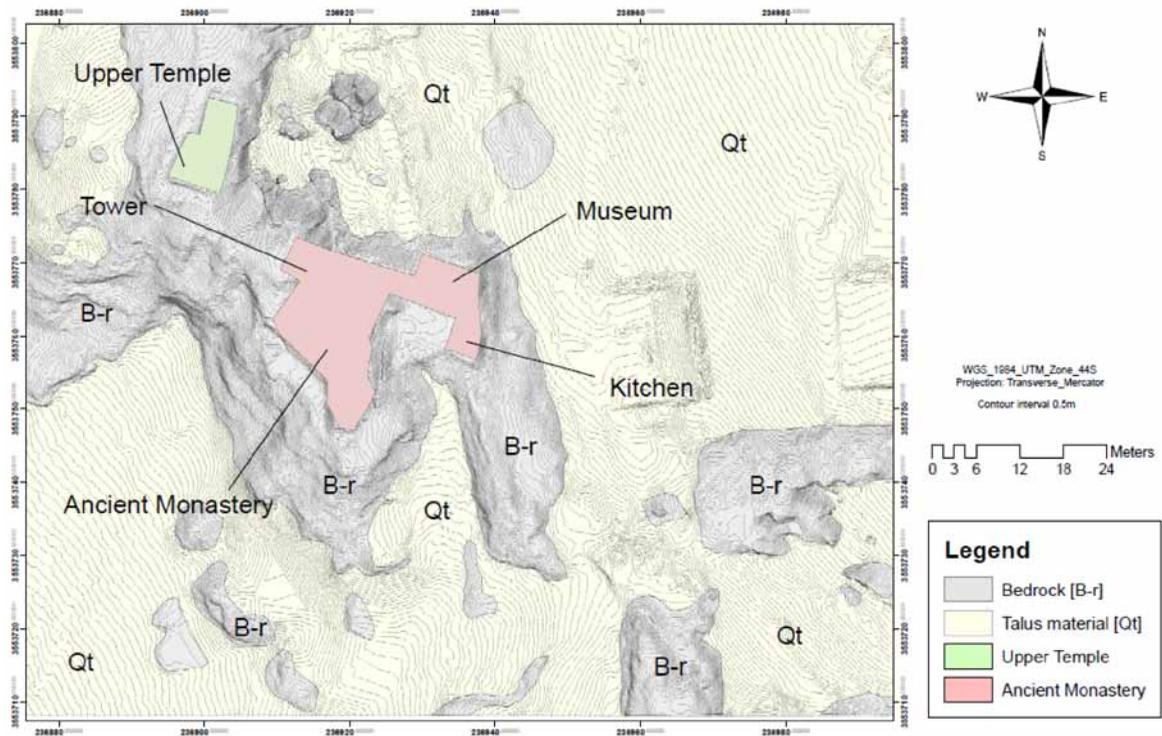
Figure 214 shows the layout of these structures on a topographic base map (processed from the LiDAR survey performed as part of this study). Also shown in figure 214 are geologic units, as enumerated below.



212 Overview of Dangkhar monastery and Dangkhar village, LiDAR-generated false-color elevation model. TU Graz 2011.



213 Structures of the ancient monastery complex. K&S 2011.



214 Layout of the ancient monastery complex structures: Geologic units: Qt indicates talus deposits; B-r indicates bimrock outcrops (0.5 m contour interval). TU Graz 2011.

Rocks comprising the bold cliffs of Dangkhar are characterized by a heterogeneous and chaotic mixture of angular rock blocks in a fine grained matrix (fig. 215). The rock blocks consist primarily of angular to subangular limestone, and range in size from cobbles to over 10 cubic meters in volume. The volumetric proportion of blocks is estimated to typically range from about 30 to more than 50 percent, with blocks tending to be matrix supported. While the origin of these deposits can be debated, it is their engineering behavior that is particularly germane to this study.

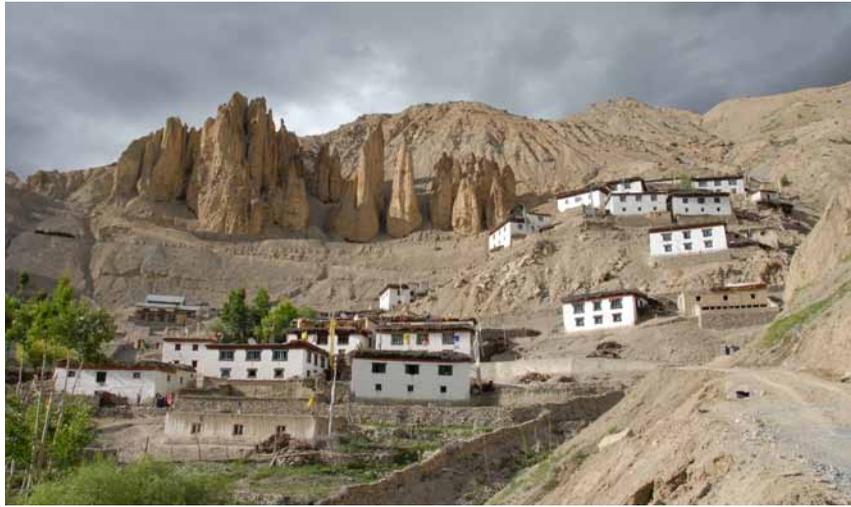
Medley proposed the term block-in-matrix rocks (or bimrocks) to classify a range of geologic deposits having the overall characteristics of those comprising the cliffs of Dangkhar, and this terminology has been adopted in this study. The engineering properties of bimrocks depend on the volumetric block proportion of the deposit, together with shear strength and stiffness properties of the block and matrix components.⁷ While the blocks at Dangkhar exhibit higher strength characteristics than the matrix components, both tend to be strong to very strong (grades R4 to R5⁸), with uniaxial compressive strengths for unweathered specimens estimated in the range of 50 to 250 MPa.

⁷ See MEDLEY, 1994 and LINDQUIST, 1994.

⁸ According to BROWN, 1981.



215 Typical characteristics of the bimrock materials forming the cliffs of Dangkhar. K&S 2011.



216 Bimrock outcrops in Dangkhar village, surrounded by unconsolidated surficial sediments. K&S 2011.



217 Bimrock foundation of the ancient monastery complex. K&S 2011.

The bimrock exposures at Dangkhar are surrounded in their entirety by unconsolidated surficial sediments (fig. 216). The sediments range predominately from silt to boulder size, and are interpreted to represent processes of colluviation (diffusive downslope movement of surficial sediments through the action of gravity and water), rockfall accumulation, and in-situ decomposition of parent materials. The overall term talus is used to describe these sediments. The distribution of bimrock and talus materials in the vicinity of the ancient monastery complex is shown schematically in figure 214. Outcrops of the bimrock at Dangkhar are typically near-vertical, reaching heights of approximately 65m directly adjacent to foundations of the ancient monastery complex (fig. 217).

OBSERVATIONS AND FINDINGS

Summarized below are observations and findings pertinent to the erosion and slope stability processes shaping the bimrock cliffs of Dangkhar. Specific observations of adverse geotechnical conditions, for each component of the monastery complex, are also summarized.

EROSION PROCESSES

Morphologically, the landscape at Dangkhar exhibits a badlands character, which is commonly associated with arid environments having little vegetation and variably cemented sedimentary formations, sometimes containing soluble minerals. Figure 218 shows the similarity between classical badlands features of Bryce Canyon in the southwestern United States, to features observed at Dangkhar. Badlands landscapes are formed by the action of surface waters and are typified by short steep slopes with narrow interfluves.



218 Badlands features of Bryce Canyon (above) and Dangkhar (below). K&S 2011.



219 Hoodoos (earth pillars) located directly north of the monastery complex. K&S 2011.



220 Resistant cap rock protecting a hoodoo. K&S 2011.

A typical feature of badlands landscapes are hoodoos (earth pillars), several of which are depicted in figure 219. Hoodoos represent the last vestiges of a landscape progressively eroded by water, and with their eventual destruction, the landscape assumes a lower overall elevation. Hoodoos sometimes are overlain by a resistant cap rock (fig. 220), which serves to protect the pillar from the erosive capacity of rainfall, thereby enhancing the pillar's longevity. Commonly, the hoodoos of Dangkhari exhibit a tapered shape, narrowing toward the base (fig. 221). The narrowing is interpreted to result from the erosive action of surface rill and sheet flow, which interacted with the pillar in a former time, when the bordering talus deposits occupied a higher elevation. The surface waters would have been directed down the talus surface to the pillar boundary, where direct exposure to flowing water would result. An example of pillar tapering occurring along the boundary of an existing talus surface is depicted in figure 222. The former talus deposits in the case of figure 221 may have been removed by natural erosion or human activity.

Exacerbating the pillar tapering is the activity of livestock. As shown in figure 223, goat herds gain access to the base of the hoodoos, where their action results in minor progressive narrowing of the hoodoo base. Not only does erosion result from hoof action, but also the nibbling of bits of rock (fig. 224). The mineralogical content of the pillar material, based on a single X-ray diffraction analysis, is approximately 80% calcite, 10% dolomite; and 10% quartz, suggesting the goats may derive from these materials a calcium-magnesium nutritional benefit.



221 Common tapered form of the Dangkhari hoodoos, showing narrowing at the base rock protecting a hoodoo. Left image indicates position of interpreted former talus surface. K&S 2011.



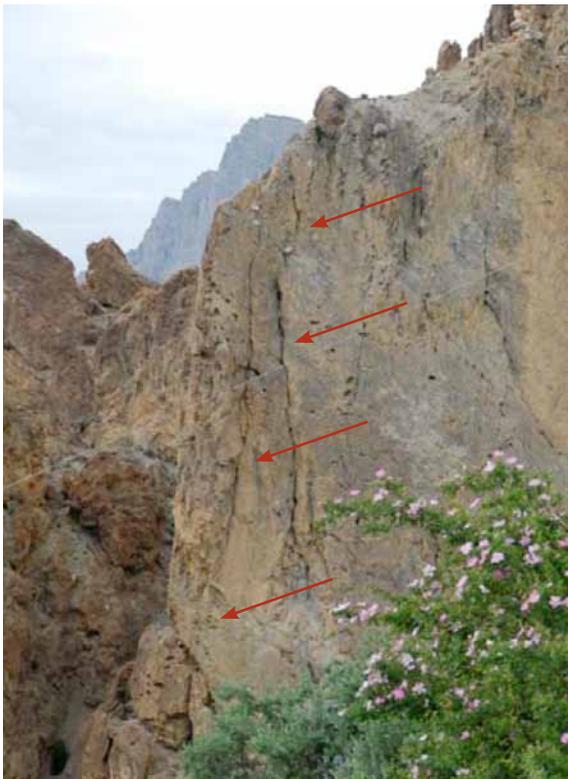
222 Active pillar tapering along contact with talus deposits. K&S 2011.



223 Goats accessing hoodoo base (note dust cloud indicating erosion). K&S 2011.



224 Goats nibbling on base of hoodoo. K&S 2011.



225 Tensile fracturing of the Dangkar bimrock. K&S 2011.



226 Tensile fracturing adjacent to monastery structures. K&S 2011.



SLOPE INSTABILITY

The bimrock of Dangkhari generally exhibits favorable stability conditions, as indicated by their capacity to form high vertical cliffs. Nevertheless, geologic processes are operating to eventually consume the bimrock, as it progressively deteriorates into free standing earthen pillars.

As erosion progresses, the more resistant bimrock materials tend to take on bolder forms, increasing their height and steepness. Their exposure is accompanied by stress relief, which manifests itself as tensile cracking of the bimrock. Figures 225 and 226 show typical examples of the stress relief fractures, which tend to dip very steeply to vertical, and strike subparallel to the free surface. Once formed, the tensile fractures act as potential detachment surfaces for toppling and rockfall-type events. The fracture surfaces are also exposed to water, which tends to slowly erode particles from the exposed surfaces, gradually enlarging the fracture aperture. Eventually, erosion rills develop, which tend to enlarge to eventually form isolated hoodoos (fig. 227). Also shown in figure 227 are pits and vugs. Together with the localized occurrence of small caves, these features indicate calcium carbonate dissolution as a component of the erosion process.

Isolated hoodoos (fig. 228) are subject to continued diffusive particle erosion and dissolution, which may eventually bring the pillar to a critical state of eccentricity, making it prone to toppling (particularly under the action of seismic shaking). In the bimrock erosion process, fine grained components tend to be preferentially eroded through freeze-thaw loosening, wind abrasion, and surface water interaction. Retreat of the finer grained matrix around large block components (fig. 229) tends to undermine or loosen the blocks, and precipitate discrete rockfall events.



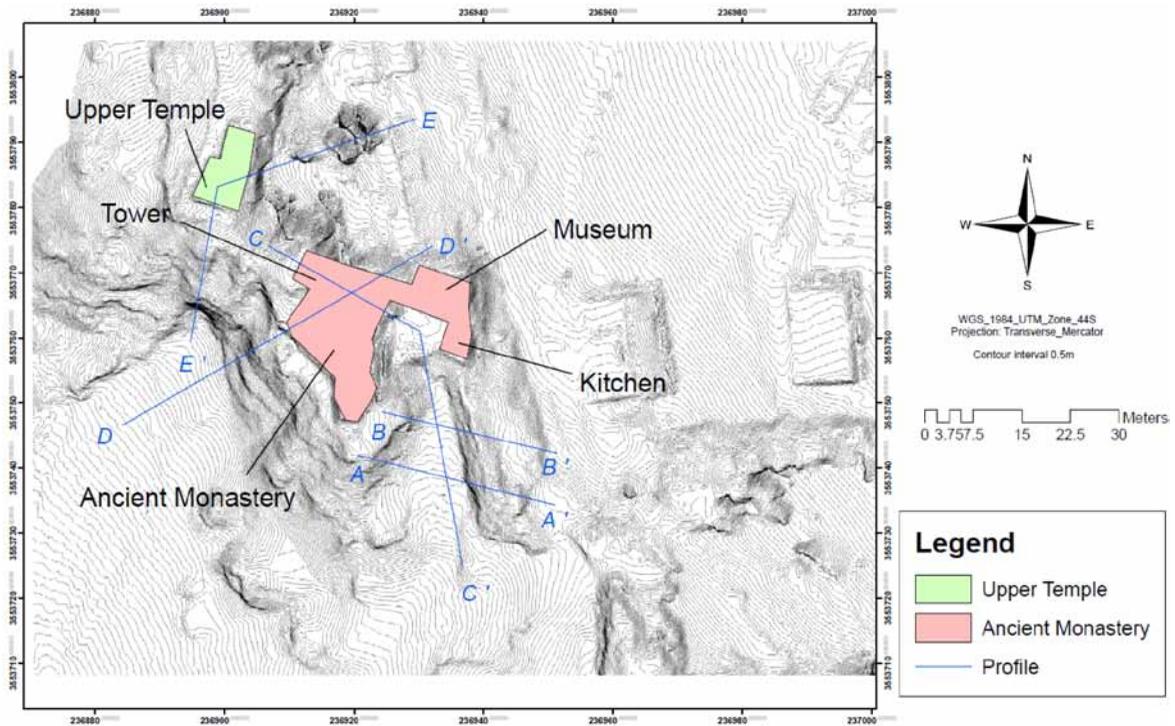
227 Development of erosion rills at the site of tension cracks, leading to hoodoo formation. K&S 2011.



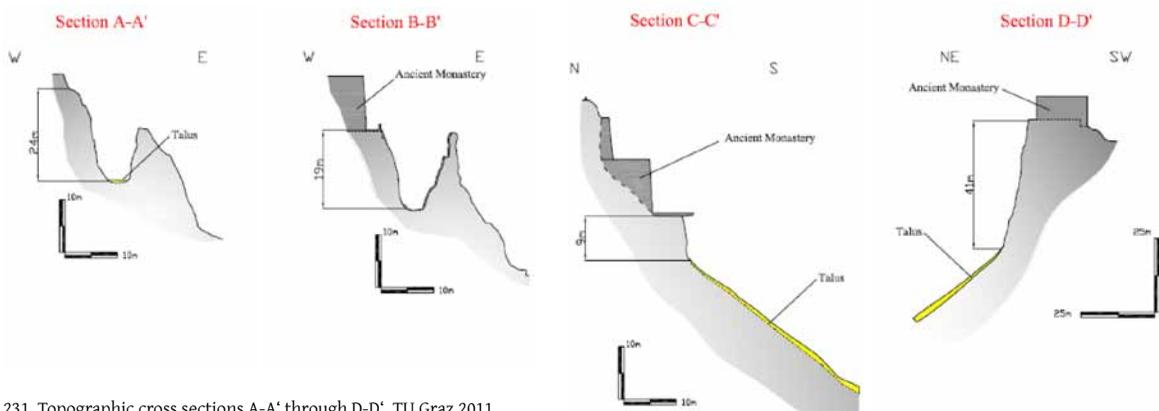
228 A precarious isolated hoodoo. K&S 2011.



229 Differential erosion of block and matrix components, leading to the undermining and loosening of large block components. K&S 2011.



230 Layout of the ancient monastery complex structures, together with locations of topographic/geologic cross sections. TU Graz 2011.



231 Topographic cross sections A-A' through D-D'. TU Graz 2011.

THE ANCIENT MONASTERY COMPLEX

Bearing walls and foundation elements of the ancient monastery complex structures are of unreinforced block and mortar construction. Figure 230 depicts the layout of these structures, together with the locations of topographic cross sections.

ANCIENT MONASTERY

The bimrock cliffs bordering the southern side of the ancient monastery are near vertical and range in height from about 10 to 40 m (fig. 231). A substantial erosion gully occurs along the eastern side of the ancient monastery (and along the southern side of the kitchen).

As depicted on the geologic map (fig. 214) and in figure 231, the gully contains loose surficial sediments (talus) in its throat, deposited through the process of cliff erosion and retreat. The cliff retreat has apparently advanced to the stage of requiring mitigating construction, including a cantilevered patio, and block masonry support work in the upper portion of the erosion headwall. Figure 231 reveals partial undermining of the block masonry support work, and figure 232 shows four water drainage pipes, discharging over the cliff and directly into the erosion gully.



232 Erosion gully along eastern side of the ancient monastery and southern side of the kitchen (note partial undermining of block-mortar work in the erosion headwall). CA 2011.

Figure 234 shows a large block that has essentially been isolated by the differential bimrock erosion process (i.e. preferential erosion of fine grained matrix components). The block is situated less than two meters from the eastern monastery wall, and provides support for a small walkway and low protection wall. The large block has been partially undermined, and its lateral extent beneath the walkway is unknown.

Prior remedial cliff work for the ancient monastery is also indicated by slope repairs consisting of mortar/concrete and block/mortar. Figure 236 depicts the two slope repairs, and indicates partial undermining of the building foundation and block/mortar slope repair. Two drainage pipes discharging over the cliff are also shown.



233 Erosion gully along eastern side of ancient monastery, view to north (note four drain pipes discharging to gully). K&S 2011.



234 Partially undermined large block along eastern side of the ancient monastery. K&S 2011.



235 Drainage pipes at the southern facade of the monastery. CA 2011.



236 Southern side of the ancient monastery, showing area of prior remedial cliff work (note drainage pipes, partial undermining of building foundation at right corner, and partial undermining of block/mortar slope repair). LN 2011.

MUSEUM

Along the northern side of the museum, an erosion rill has encroached on the structure and partially undermined the foundation (Figure 237). There presently exists only a narrow bimrock fin along the eastern side of the museum, and continued erosion in this area is judged to have the potential to de-buttress the structure from the eastern side.

KITCHEN

Along the southern side of the kitchen, two undermining conditions exist, as shown in Figures 239 and 240. One instance involves undermining of the block/mortar headwall slope repair, and the second occurs directly beneath the kitchen foundation. The narrow bimrock fin along the eastern side of the museum continues along the kitchen's eastern wall. As shown in Figure 238, tensile fracturing of the bimrock has occurred, which can facilitate detachment of a large block. Such detachment would reduce the buttressing effect along the eastern wall.



237 Erosion rill and partial undermining of foundation along northern side of the museum (note bimrock fin along eastern side). K&S 2011.



238 Tensile fracturing of bimrock fin along eastern side of the kitchen. K&S 2011.



239 Partial undermining of block/mortar slope repair and foundation along southern side of the kitchen (note drain pipes). K&S 2011.



240 Detail of undermined kitchen foundation. K&S 2011.

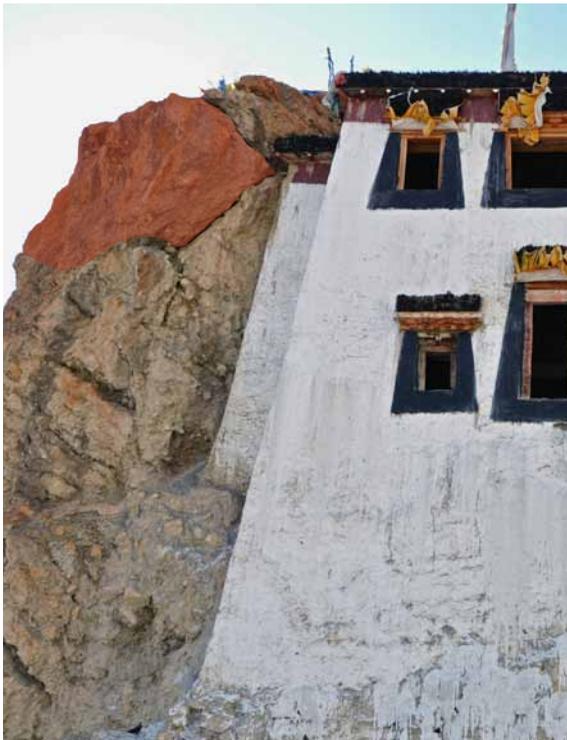
TOWER

Bordering the southern side of the tower is a large rock block that appears to have been isolated from the surrounding bimrock by two significant fractures. The fractures intersect along a line plunging toward the southeast, creating a removable block (fig. 242). While the block is presently stable, future adverse climatic events, seismic shaking, or simply the passage of sufficient time, may act to destabilize the block and generate a rockfall. Should a rockfall occur, the trajectory would be through the roof of the ancient monastery and toward its southern bearing wall.

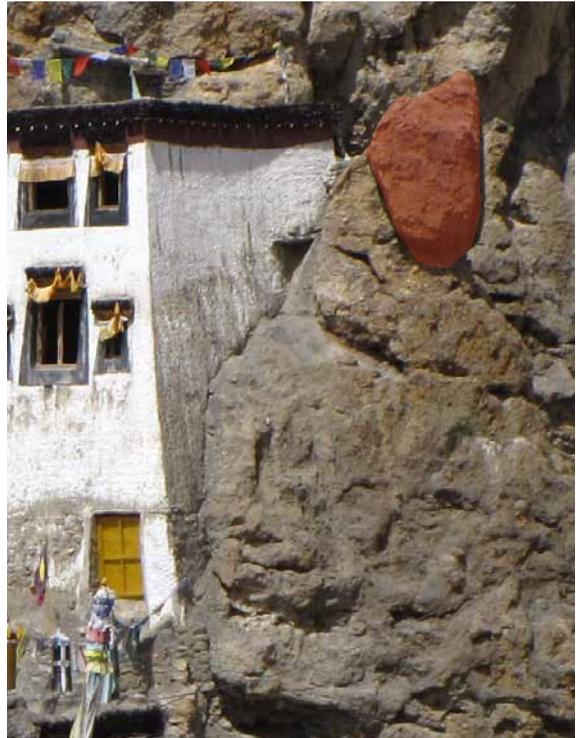
A potentially unstable rock block also exists along the northern side of the tower (fig. 243). The block appears to be almost completely isolated by the steeply dipping underlying fracture. The stability characteristics are unfavorable, and moderate disturbance may potentially result in block detachment. In the case that a rockfall develops, the trajectory would not be toward the ancient monastery complex, rather toward the new parking garage construction and village below.



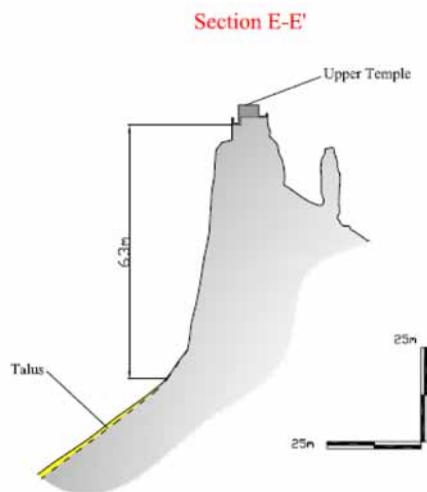
241 Eastern view of the tower above the roof of the monastery's main building. LN 2010.



242 Potentially unstable rock block bordering southern side of the tower. CA 2011.



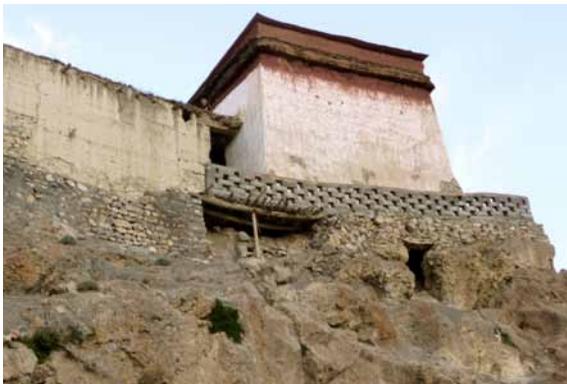
243 Potentially unstable rock block adjacent to northern side of the tower. LN 2011.



244 Topographic cross section E-E' (for location of cross section, refer to figure 236). TU Graz 2011.



245 Condition of bimrock cliff along southern side of the upper temple. K&S 2011.



246 Foundation undermining along western side of the upper temple (note wood post and beams). CA 2011.



247 Foundation undermining along eastern side of the upper temple (note block and mortar underpinning, spanning timber beams and drainage pipe). K&S 2011.

UPPER TEMPLE

The bimrock cliff bordering the southern side of the upper temple is near vertical, with a height of about 65 m (fig. 244). As depicted in figure 245, the bimrock locally appears fractured and loosened.

Partial undermining of the upper temple foundations and access walkways has occurred along the western and eastern sides of the structure. As shown in figure 246, spanning across the undermined areas has been accomplished with timber and steel posts and beams. Foundation undermining along the eastern side is similar in its nature, and has been addressed with remedial block and mortar underpinning and spanning timber beams. Figure 247 depicts the undermining along the eastern side of the upper temple, together with a drainage pipe discharging directly onto the cliff face in the undermined area.

CASTLE OF THE NO NO

Along the eastern side of the castle of the No no is an overhanging bimrock outcrop having a height of about 3-4 m (fig. 248). The overhang is considered a transient feature, with a high susceptibility to long term slope instability. The configuration of the overhang is such that a slope failure, extending from the toe to at a vertical angle (or steeply dipping in the reverse sense of the overhang) could undermine a portion of the foundation (the corner of the white building shown in figure 248).

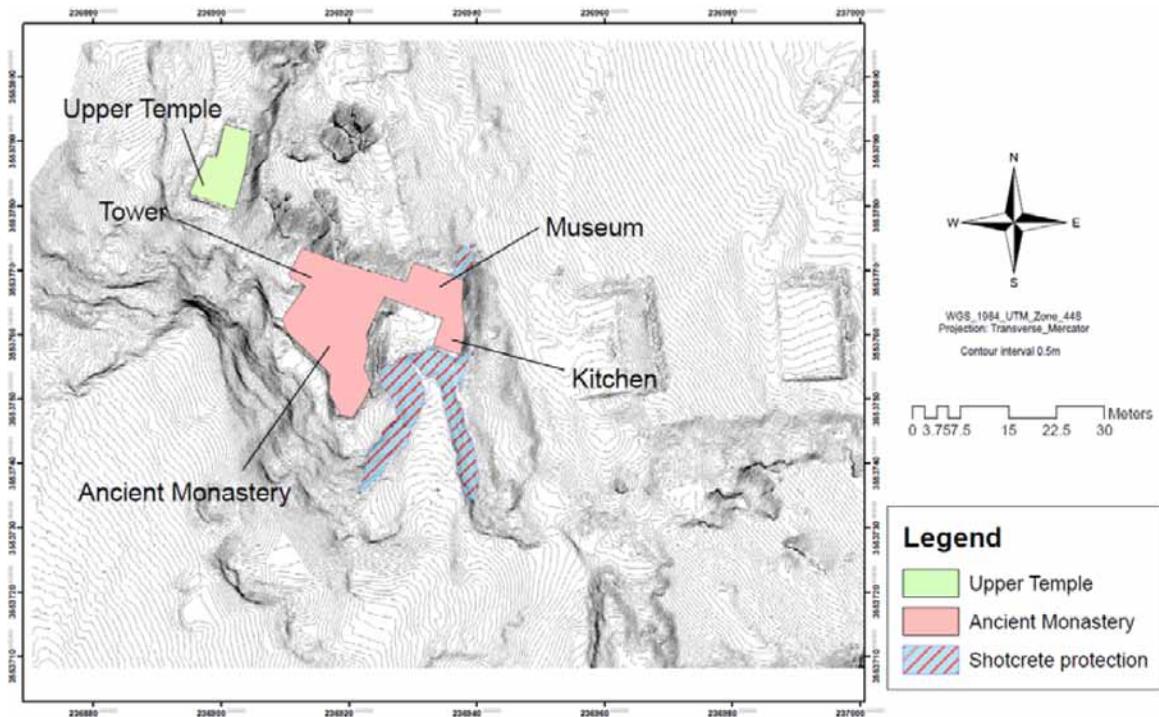


248 Castle of the No no, depicting overhanging bimrock outcrop along eastern side of structure. HN 2011.

GEOTECHNICAL RECOMMENDATIONS

The geotechnical recommendations described herein are conceptual in their nature, and are intended to provide guidance in developing final design solutions and preliminary cost estimates.

Site conditions are complex in terms of access constraints, and many design details will have to be worked out on site, based on specific as-built field conditions.



249 Recommended areas for shotcrete protection. TU Graz 2011.

ANCIENT MONASTERY

The erosion gully developed along the eastern side of the ancient monastery (and southern side of the kitchen) shows signs of active erosion. The gully has a high potential for continuing retreat, and the risk to foundation elements supporting the ancient monastery and the kitchen is considered significant.

As enumerated below, diversion and control of surface runoff is imperative to attenuate the erosion process, however, drainage improvements alone are considered insufficient for mitigating the risk of structural undermining. To address this risk, it is recommended that surface protection be provided for the steep side slopes of the gully. Options considered for surface protection include block/mortar walls, chemical membranes (e.g. polyurethane), and a sprayed concrete (shotcrete) membrane. The first option was rendered impractical due to the significant height of the walls, and the lack of firm bearing material in the throat of the gully (which is filled with loose talus). The second option could be implemented, however, the durability of chemical membranes under harsh climatic conditions such as Dangkhar remain unproven. For this reason, the option of a shotcrete membrane was considered most suitable.

The shotcrete membrane serves to seal the ground surface in order to attenuate the long term deleterious effects of rain impact and sheet flow, freeze-thaw action, wind abrasion, and dissolution processes. For preliminary cost estimating purposes, a membrane thickness of 5 cm can be assumed, sprayed over a surface area of approximately 1200 m². Polymer additives should be considered to improve the shotcrete bond strength, and weep (drainage) holes should be provided on one meter centers in order to reduce the potential for significant hydraulic pressures developing behind the membrane. To maximize adhesion, it is also recommended that surfaces to be shotcreted first be cleared of dust and loose particles with a high pressure air hose. The specific area identified for shotcrete protection is depicted in figures 249 and 250.



250 Shotcrete protection along eastern side of the ancient monastery and southern side of the kitchen. K&S 2011.

The aesthetic properties of traditional shotcrete can be a drawback for cultural heritage restoration work. However, as shown in figure 251, natural pigment additives and a textured finish can result in an attractive, natural looking surface. Diversion and control of surface runoff, so as to minimize discharge into the large gully, is also recommended. This will require regrading of surfaces to prevent sheet flow onto the cliff face and re-routing of drainage pipes to low vulnerability areas (such as the more gentle slopes to the north of the ancient monastery). Alternatively, runoff can be collected and conveyed in a secured drop pipe (e.g. corrugated HDPE), to a location beyond the toe of the bimrock cliffs. Figure 252 depicts four drainage pipes requiring re-routing.

As described in the previous section, a partially undermined block is situated less than two meters from the eastern monastery wall (fig. 253), and provides support for a small walkway and low protection wall. It is recommended that the block be underpinned by constructing a small block/mortar mass below its toe. Due to the steepness of the underlying surface, a horizontal notch will need to be carefully excavated to form an adequate bearing surface for the block/mortar underpin. An alternative method for supporting the block is to fill the undermined area with shotcrete.



251 Example of textured and pigmented shotcrete wall. K&S 2011.



252 Prevent water discharge into gully along eastern side of the ancient monastery. K&S 2011.



253 Underpin large block along eastern side of the ancient monastery. K&S 2011.



254 Underpin foundation elements along southern side of the ancient monastery. CA 2011.



255 Prevent water discharge over southern supporting cliff of the ancient monastery. DB 2010.

Along the southern side of the ancient monastery, partial undermining of the foundation and the block/mortar slope repair has occurred (fig. 254). It is recommended that the undermined areas be underpinned with block/mortar construction. Care must be taken to ensure adequate bearing conditions for the underpins, for example by carefully excavating bearing notches. As shown in figure 255, drainage pipes convey water from the monastery and discharge directly onto the cliff face. Re-routing of the discharge to low vulnerability areas (such as the more gentle slopes to the north of the ancient monastery), or conveying it in a secured drop pipe (e.g. corrugated HDPE), to a location beyond the toe of the bimrock cliffs, is recommended.

MUSEUM

As depicted in figure 249, a second area of shotcrete protection is recommended. The shotcrete protection area is approximately 50 m² (fig. 256), and is intended to mitigate the potential for continued rill erosion and foundation undermining. Specifications for shotcrete placement are consistent with those described before. It is further recommended that the undermined foundation area be underpinned with block/mortar construction, or filled with shotcrete.

KITCHEN

Along the southern side of the kitchen, underpinning of the undermined foundation and block/mortar slope repair is recommended (fig. 257). Underpinning can be performed with block/mortar construction, provided that adequate bearing conditions are achieved. Alternatively, as part of the gully surface protection work, underpinning may be performed by filling the undermined areas with shotcrete. Figure 257 also highlights a bimrock mass that has been isolated from the surrounding rock mass by a tensile fracture. As support of this block is not considered feasible/practical, the hazard of a future rockfall should be anticipated.



256 Shotcrete protection and underpinning along northern side of museum. K&S 2011.



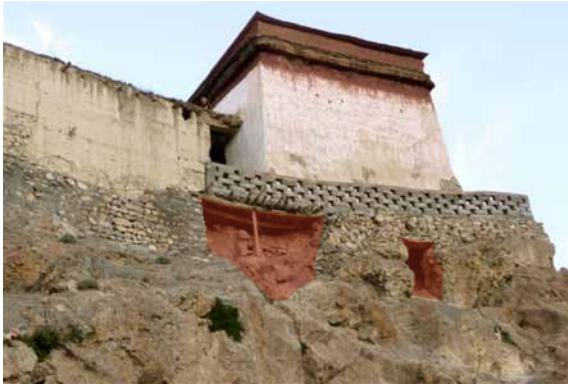
257 Underpin foundation elements along southern side of the kitchen. K&S 2011.



258 Support potentially unstable block along southern side of the tower. CA 2011.



259 Potentially unstable block along northern side of the tower. LN 2011.



260 Underpin foundation elements along western side of the upper temple. CA 2011.



261 Underpin foundation elements along eastern side of the upper temple, and prevent water discharge over cliff. K&S 2011.



262 Underpin foundation elements along eastern side of the upper temple, and prevent water discharge over cliff, seen from below. K&S 2011.



263 Overhanging slope at the castle of the No no. HN 2011.

TOWER

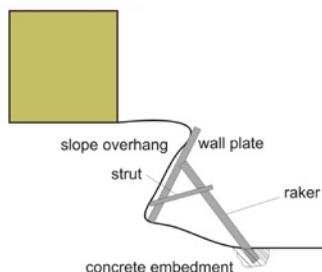
The large, potentially unstable rock block bordering the southern side of the tower is considered to pose significant risk, as the failure trajectory would be through the roof of the ancient monastery and toward its southern bearing wall (fig. 258). For this reason, it is considered prudent to provide supplemental support for the block. Based on restrictive site conditions, a method of support involving anchored straps appears practical. With this approach, two galvanized wire ropes would be strapped across the block, and anchored to the rock mass along the narrow ridgeline between the tower and the upper temple. Anchoring can be achieved by providing full strength plate connectors to the ends of the wire rope, then embedding the plates into grouted holes having a nominal depth of about 1.5 m. Anchor placement will be critical for ensuring adequate performance of the supplemental support, and the wire ropes should be lightly pre-tensioned to provide a small amount of active support. A potentially unstable rock block also exists along the northern side of the tower (fig. 259). In the case that a rockfall develops, the trajectory would be toward the new parking garage construction and village below. It is not considered feasible/practical to support this block. An option for reducing the risk of a future rockfall involves the controlled removal (scaling) of the block. Absent such measures, the hazard of a future rockfall should be anticipated.

UPPER TEMPLE

It is recommended that undermined foundation elements along the western and eastern sides of the upper temple (fig. 260, 261 and 262) be underpinned with block/mortar construction. Care must be taken to ensure adequate bearing conditions for the underpins, for example by carefully excavating bearing notches. Additionally, re-routing of the water discharge to low vulnerability areas, or conveying it in a secured drop pipe (e.g. corrugated HDPE), to a location beyond the toe of the bimrock cliffs, is recommended.

CASTLE OF THE NO NO

The overhanging bimrock outcrop along the eastern side of the castle of the No no has a high susceptibility to long term slope instability (fig. 263). To mitigate to potential for resulting foundation undermining, it is recommended that the slope overhang be supported according to the shoring concept depicted in figure 264. The shoring scheme consists of timber wall plates, rakers, and struts, each envisioned on approximately 1.5 m centers. To achieve adequate bearing, the rakers should be embedded in shallow concrete-filled foundation holes.



264 Shoring concept for overhanging slope (schematic). TU Graz 2011.

DISCUSSION

Although the ancient monastery of Dangkhar sits in precarious geologic terrain, several measures can be taken to help improve its longevity. The fundamental mitigation strategy developed herein is to:

- I. control surface runoff by directing water flows to low vulnerability areas;
- II. perform localized underpinning of foundation elements;
- III. secure critical rock blocks;
- IV. provide surface erosion protection in critical areas;
- V. perform diligent maintenance and repairs.

The ancient monastery complex and the castle of the No no are essentially serving the role of hoodoo cap rocks. The benefit of a cap rock relates to its limitation of rainfall and surface runoff along the underlying pillar. In the case of Dangkhar, however, the majority of runoff is presently routed to the steep side slopes of the bimrock foundation. It is considered imperative to control this runoff and convey it to low vulnerability areas.

Recommended underpinning works involve placement of block and mortar in deficient areas. Due to the extreme steepness of the rock cliffs, firm bearing surfaces for the underpinning elements may be difficult to achieve in many cases. To facilitate effective underpinning, it is therefore recommended that bearing notches be carefully excavated in the cliff walls, with supplemental use of short grouted steel shear dowels, as needed.

A critical potentially unstable rock block has been identified along the southern side of the tower structure. While the block is presently stable, future adverse climatic events, seismic shaking, or simply the passage of sufficient time, may act to destabilize the block and generate a rockfall. Should a rockfall occur, the trajectory would be through the roof of the ancient monastery and toward its southern bearing wall. As the resulting structural damage would be very significant, it is considered prudent to support the block with anchored wire rope straps.

The shotcrete surface protection is considered an integral component of an effective remediation strategy. Geotechnical conditions in the two areas identified for shotcrete treatment are unfavorable, and further progression of erosion has the potential to significantly undermine foundation elements. As shotcrete materials and technology exceed local capabilities, it is anticipated that this work will have to be imported from a major metropolitan area.

Maximizing the longevity of the ancient monastery complex is contingent upon diligent maintenance and repair of the structures. It is recommended that foundation inspections be performed by local personnel on an annual basis, and following unusual events such as extreme monsoonal downpours or seismic activity. Such inspections should reveal areas experiencing progressive deterioration, and form a basis for prioritizing future mitigation activities.

Dangkhar is situated in a region exposed to strong seismic shaking, and considering the (seismically unfavorable) unreinforced block and mortar constructions, significant structural damage can be expected during future large earthquakes, even with the envisioned architectural and geotechnical mitigation measures implemented. Absent such events, however, these measures are expected to extend the useful life of the ancient monastery complex by many years.

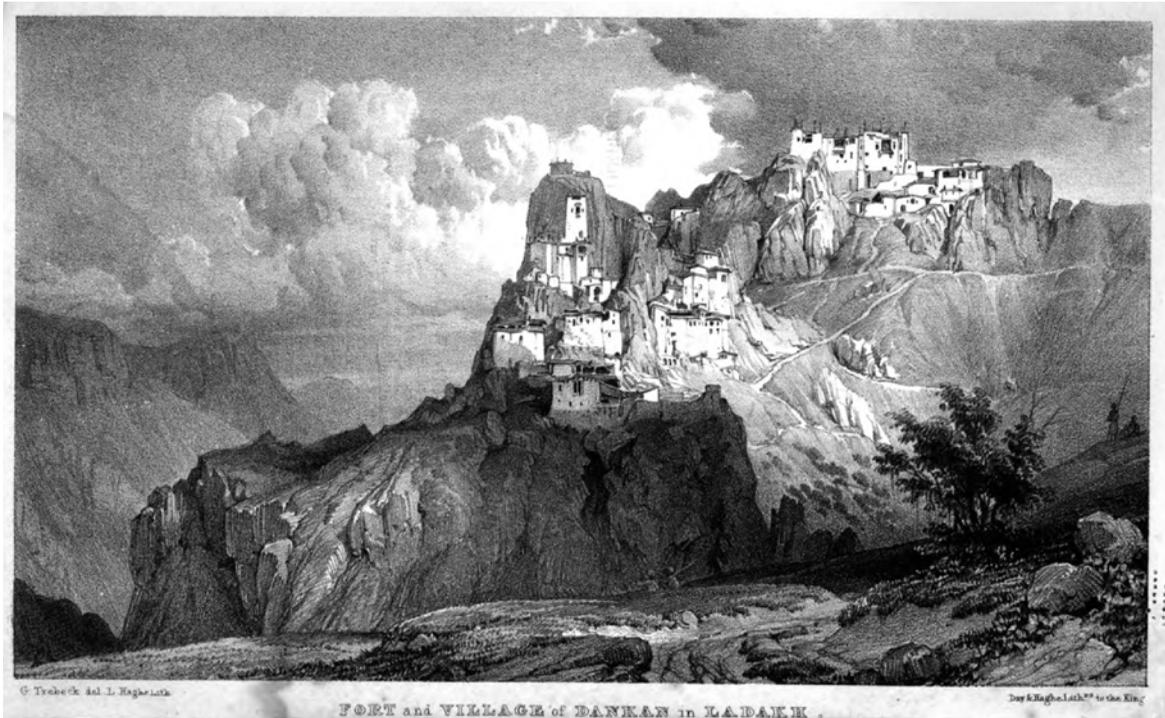
The mitigation concepts summarized herein require skilled labour in a hazardous work environment. Execution of the foundation underpinning and shotcrete surface protection are particularly hazardous activities, due to the requirement for working on vertical cliffs. Proper harnesses and scaffolding, together with standard safety gear, are considered necessary components for carrying out these construction activities.





8

SUSTAINABLE RESTORATION MEASURES



265 Artistic representation of the village in 1820. Lithography after a drawing of George Trebek, published in: *Travels in the Himalayan Provinces of Hindustan and the Panjab*. By William Moorcroft and Mr. George Trebeck, from 1819 to 1825. Vol. II., London 1841.

*The Venice Charter - INTERNATIONAL CHARTER FOR THE CONSERVATION AND RESTORATION OF MONUMENTS AND SITES:*¹

Article 4. *“It is essential to the conservation of monuments that they be maintained on a permanent basis.”*

Article 5. *“The conservation of monuments is always facilitated by making use of them for some socially useful purpose. Such use is therefore desirable but it must not change the lay-out or decoration of the building. It is within these limits only that modifications demanded by a change of function should be envisaged and may be permitted.”*

Article 9. *“The process of restoration is a highly specialized operation. Its aim is to preserve and reveal the aesthetic and historic value of the monument and is based on respect for original material and authentic documents. It must stop at the point where conjecture begins, and in this case moreover any extra work which is indispensable must be distinct from the architectural composition and must bear a contemporary stamp. The restoration in any case must be preceded and followed by an archaeological and historical study of the monument.”*

Article 10. *“Where traditional techniques prove inadequate, the consolidation of a monument can be achieved by the use of any modern technique for conservation and construction, the efficacy of which has been shown by scientific data and proved by experience.”*

¹ The Venice Charter is a code of professional standards that gives an international framework for the preservation and restoration of ancient buildings. The concept of historic monuments and sites was interpreted as the common heritage therefore safeguarding them for the future generations with full of richness and authenticity was defined as the common responsibility. For more details see www.icomos.org/venicecharter2004/index.html

8

SUSTAINABLE RESTORATION MEASURES

Carmen Auer and Holger Neuwirth

BUILDING RESTORATION

The necessary restoration work can be divided into three main time phases. During the first phase, measures should be taken to secure structural stability – a prerequisite for all further work. The second phase would be concerned with the protection of the interior against precipitation and moisture penetration, especially with regard to the mural paintings, under consideration of essential factors such as structural physics and the preservation of the building's traditional appearance. The third phase would focus on envisioning and completing the building's final appearance.

Based on the architectural survey realised in 2010 and 2011 and on the post fieldwork analyses which form the present documentation and catalogue of measures, the complete structural and architectural restoration of the old monastic complex of Dangkhar is planned to be completed over a period of eight years.

A twofold approach is hereafter envisaged regarding the necessary architectural interventions. It includes, first of all, the static and physical construction work in order to stabilize the buildings and, secondly, the ability to hand over the restored areas to the monastic community by the end of each restoration campaign. Due to the climatic conditions prevalent in the area of Spiti, the restoration work will have to be done in a time frame of about a hundred and fifty days, from May to October each year.

Following the evaluation of the data collected in 2010 and 2011, the premises for a sustainable restoration of the building and its cultural and artistic heritage are now available. The restoration work should begin by securing the site and the foundations of the main building. Many areas connecting the bedrock and the walls ought to be stabilized and reinforced. With regard to minor construction works undertaken by the community in recent times, the possibility of a restoration according to the initial aspect should be taken into account (e.g. the closure of the skylight in the ceiling of the assembly hall). Other provisional measures, such as the greenhouse-like roofing of the inner courtyard, should be addressed and eventually replaced with lasting constructions. Special attention must be paid to the discharge of rain and water supply system. Finally, the conservation of the monastery will be facilitated by assigning each room a function or purpose and ensuring their adequate maintenance.



266 View of the temple area from the east. CA 2010.



267 Temple area from the northern side. Situation in 1850. Photograph of Francis Frith, E.208:3316-1994 © Victoria and Albert Museum, London.



268 Same view, photographed in 2010. CA 2010.

STRUCTURAL STABILITY

SITE OF THE MAIN BUILDING

Principally, the ground beneath the building foundations can be defined as consisting of stable areas of bedrock and relatively unstable sloping areas of loose erosive rock. The geological assessment of the site and its stability were evaluated in an interdisciplinary cooperation with the Institute of Applied Geosciences of the TU Graz. The main purpose of the geological report was to summarize geotechnical processes that are relevant to the long-term stability of the ancient monastery and affiliated buildings, together with conceptual remediation strategies for mitigating adverse geotechnical conditions and processes¹.

It seems that the area in the south-west of the main monastery building – the white corner tower with Lochen Rinpoche's Residence on the upper storey and the red tower with the lower and upper Protector's Chapel – located directly next to the steep incline, is especially endangered. The extreme crack formation observed in those parts of the building would point to that assumption. The terrace's construction in the front area of the east facade and its surrounding supporting walls need to be renovated. The artificially extended terrace which opens up to a nearly vertical precipice in the east is very weak; some of the clay layers are very thin. The reinforcing bars of the concrete terrace on the south-western facade are exposed.

SITE OF THE TOWER AND THE UPPER TEMPLE

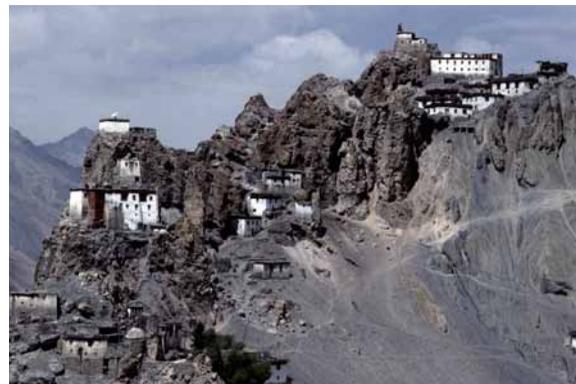
The upper temple seems to have been built completely on bedrock. From a structural perspective, the tower on the roof of the main building and the upper temple are neither threatened by their location nor statics.

However, the upper temple's annex (rooms 35, 36 and 37), which also forms the front part of the temple entrance, is in very bad condition. The walls are extremely unstable and the roof is leaky in many places. It is strongly recommended to demolish the derelict annex and build a new front area which would cover the entrance area of the temple.

1 See "GEOTECHNICAL REMEDIATION STRATEGIES" on page 197



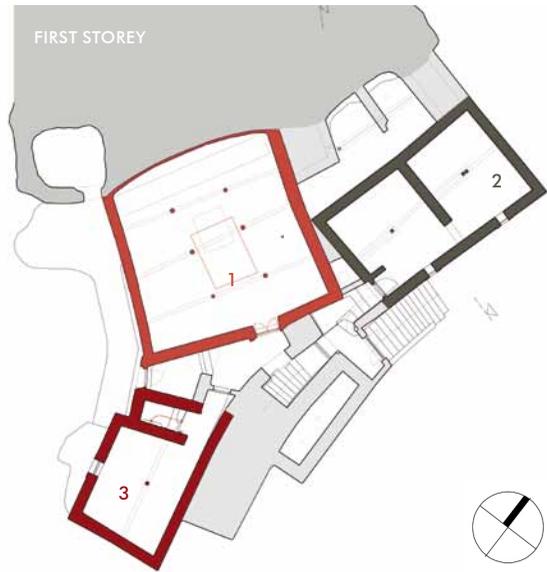
269 Temple area from the east. Situation in 1866. Photograph of Samuel Bourne, 53:093 © Victoria and Albert Museum, London.



270 Same view, pictured in 1991. Luczanits 1991.



271 Building phases - ground storey.



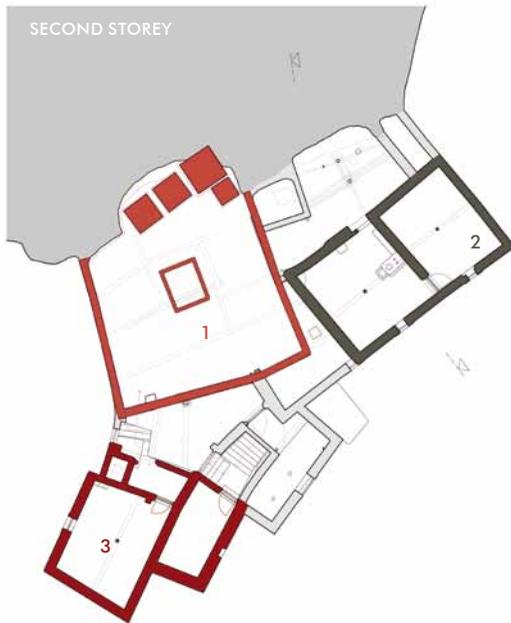
272 Building phases - first storey.



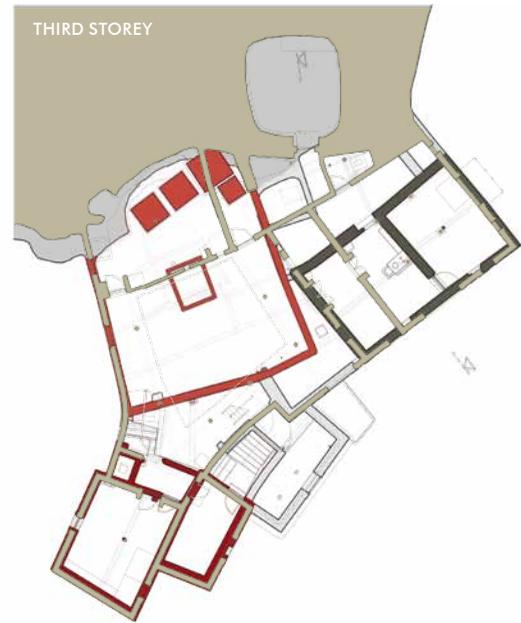
273 Spiti temple site on the way to Dangkar. HN 2010.



274 Comparable situation with stupas at the roof of the temple. HN 2010.



275 Building phases - second storey.



276 Building phases - third storey.

- Assembly hall
- Northern building
- Southern building
- Top floor

MAIN MONASTERY BUILDING: BUILDING PHASES

Historically the main building of the monastery was subject to different construction phases. To analyze the structural problems it is important to deal with the stages of construction of the building.

The entire complex consists of three originally separate buildings which were structurally connected to each other over time. The assembly hall is undoubtedly designed as a single storey free standing building (1), because a group of stupas is located on its former roof in front of the ascending rock. A quite similar situation with four stupas on the roof can be found at a small temple site between Shimla and Dangkhar. That the building was formerly detached also explains the lantern that originally illuminated the room from above. In the North and South two buildings were built close to the assembly hall which were each provided with a basement. Their space configuration was of a rather mundane character.



277 Early building phase of the main monastery building. TU Graz 2013.



278 Building blocks 1, 2 and 3. TU Graz 2013.



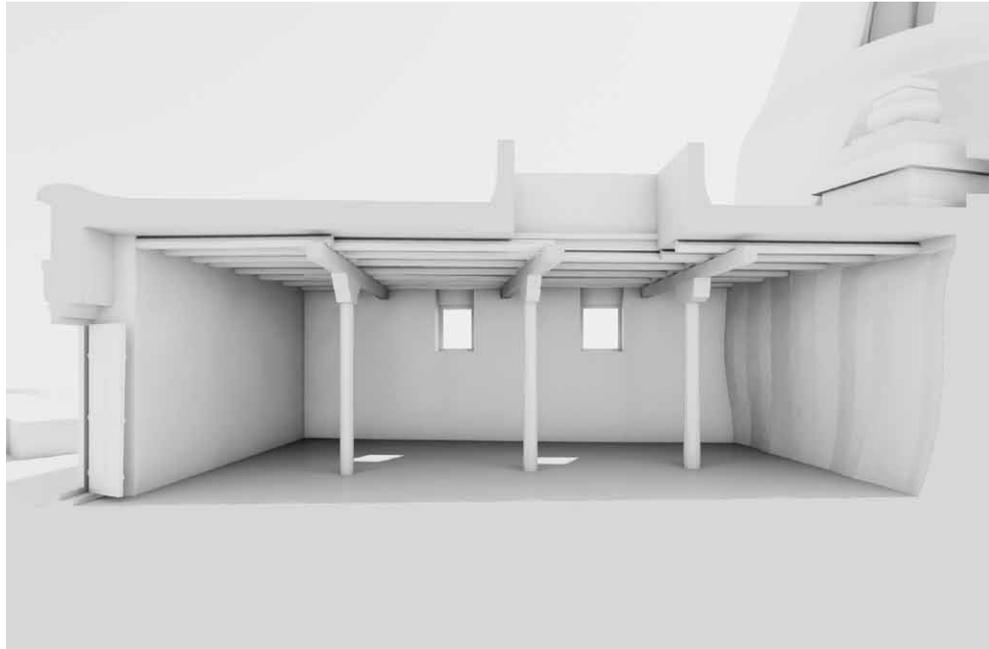
279 Main monastery building complex today. TU Graz 2013.



278 Building blocks 1, 2 and 3. TU Graz 2013.



279 Main monastery building complex today. TU Graz 2013.



280 Building structure of the formerly free-standing assembly hall. TU Graz 2013.

The position of the buildings created a forecourt between the assembly hall (1), the southern building (3) and an open area to the ascending rock on the north-west side, bordered by the assembly hall (1) and the northern building (2). The access to the assembly hall, which lies slightly shifted from the centre axis, formerly faced the open side of the forecourt with a visual axis into the south-eastern valley. The entrance to the southern building (3) was situated on the northern side of the building next to the forecourt where also the steps lead down to the basement. The upper floor could have been reached via the roof of a former porch.

The construction of the protector's chapel (4) seems to have been added later to the southern building, because its interior space is located on other levels. The northern building has its entrance on the southern side of the ground floor, facing the former open forecourt. The upper floor of the north building was probably entered from the west side. It can be assumed that an open staircase on the rear of the building led to the door on the upper floor. The exposed brick wall on the western wall of the ground floor would also support that assumption.

In this rear area in front of the ascending cliff, a later bricked up doorway at the northern wall of the assembly hall is also still recognizable. The hermitage meditation cave in the overlying part was also accessed from this area by means of a ladder. The cave is undoubtedly one of the oldest parts of the whole area.

The latest additions include the extension to the east facade where the main entrance, the stairs and the toilet are located, as well as the top floor of the building. Rare photo shots from 1850/1866 show that some structural changes have been made since then: for example, changes to the entrance area, the facades (masonry and openings) and the courtyard roofing on the third floor.

- ground storey
- first storey
- second storey
- third storey



281 The different storeys of the main building superimposed by each other. TU Graz 2013.

MEASURES TO SECURE THE STRUCTURAL STABILITY

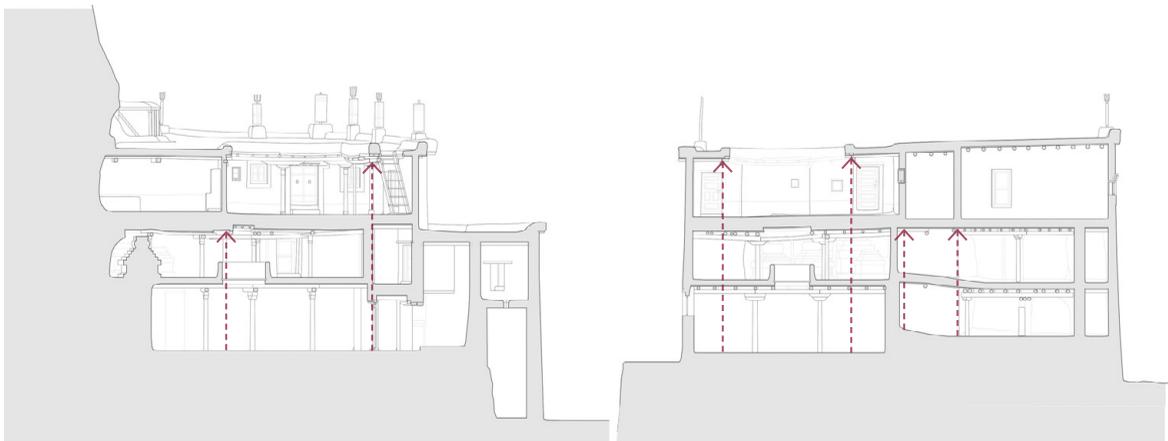
Additional rooms and storeys were built over the years, hence adding extra weight onto walls and ceilings which were not initially designed to bear such a load. The enlargement of the main building was realised with little knowledge of statics, resulting in two zones, the bearing walls and most of the ceilings, becoming particularly weak.

Additional constructions were rarely carried out according to the principle of static load transfer, nor were they done with the necessary technical know-how.

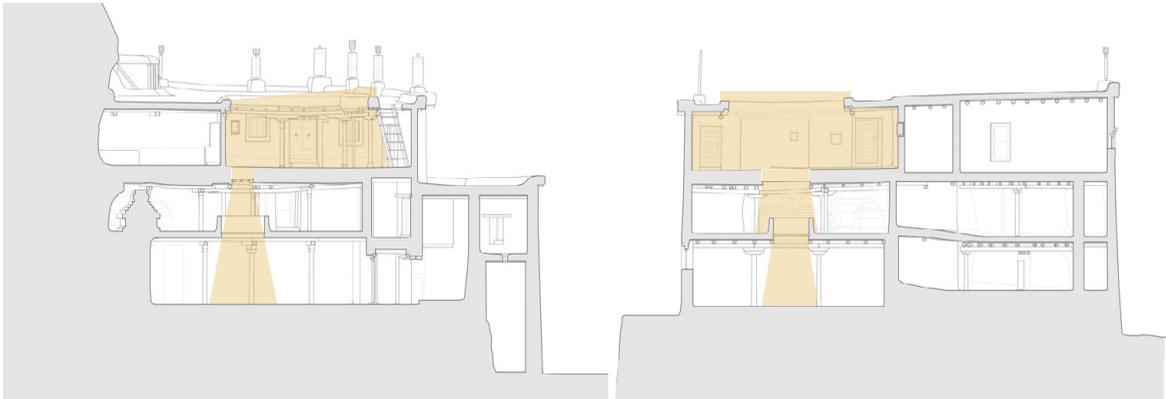
When HH Dalai-Lama's residence was built on the third floor, for example, a wall was constructed between the entrance and the residential room which hardly guarantees an optimum static load transfer to the floor below. This has resulted in the formation of many cracks in the ceiling and the walls. The load transfer must therefore be dealt with from the highest level of the building down to its lowest point.

Just as stated in a detailed damage report, the main beams of some ceiling constructions are broken. Consequently, the corresponding wall surfaces particularly the supporting areas beneath the beams and in some parts near the openings – are showing signs of heavy damage due to load transfer. For the structural stability it will be also of the utmost importance to reduce the roof load of the clay structure, which has constantly increased over the years due to additional rebuilding. Therefore, in order to systematically improve stability of all damaged areas from bottom to top, i.e. from the ground floor to the top floor, the following measures should be taken:

1. Thorough renovation of all walls (repair cracks, rebuild decayed areas, reinforce supporting wall areas) and stabilization of free-standing pillars;
2. Replacement of all damaged, weak beams of the ceiling constructions;
3. Reduction of roof load of the clay structure.



282 Sections of the main building with some of the problematic zones of load transfer. TU Graz 2013.



283 Conception of a glass roof above the inner courtyard and the reopening of the skylights on the second and third floor. TU Graz 2013.



284 The roof of the main building with the open courtyard. CA 2010.



285 Temporary construction above the inner courtyard. CA 2011.



286 Outbreaks in the bottom zone of the upper temple. CA 2011.



287 Dampening in the bottom area inside the upper temple. CA 2011.

PROTECTION OF THE INTERIOR

In order to avoid further damage to ceilings and interior walls, protective measures would primarily include renovation of those roof areas that are prone to leakage through precipitation. The basin-shaped roofs pose a threat, particularly when precipitation becomes heavy, because the rainwater cannot be sufficiently drained. Additionally, the moisture absorbing capacity of the clay layer leads to a substantial increase in the weight of the roofs which in turn could cause serious static problems. This has probably caused recent damage to the ceiling beams on the 2nd floor of the monastery. As soon as the clay layers are no longer able to retain precipitation moisture, it will leak into the areas below.

The roof area of the main monastery building definitely needs renovating, especially in the upper courtyard area where the rain causes rapid puddle formation due to the lack of adequate draining facilities. The courtyard's function as an access area to the rooms on the upper storey is thus restricted and the roof has to bear additional strain. A former roof opening, which has been closed and temporarily covered up, poses a special problem since it allows rain water to seep into the rooms below. Rain water spreads out all over the ceiling and from there penetrates the walls, thus additionally jeopardizing the stability of those areas. In the course of renovating the roof and its clay layers, the surviving structures of the skylight area of the assembly hall and the intermediate storey above it - with the stupas on the rear side - could be reopened. Daylight would shine through the courtyard roof creating a vertical sightline from the rooftop down to the assembly hall and enhancing both lower rooms.

The ambulatory along the courtyard walls will have to be reinforced in order to ensure safe access to the rooms even when the clay floor gets damp. In the summer of 2011 the inner courtyard of the third floor was covered with a temporary structure made of wood and plastic sheeting by a local NGO. The long-term coverage of the courtyard with a glass roof would improve the problems of water and moisture penetration into the courtyard and underlying ceiling areas. Because of the strong sunlight and the corresponding warming an optimum ventilation of the structure should be taken into account.

Slight moisture penetration was also detected near the museum and the kitchen roof. The roof area of the upper temple was secured by means of a pitched-roof made of corrugated iron. A threatening example of water damage was found on the eastern wall of the upper temple. Outbreaks in the bottom zone of the masonry cause a dampening of the wall and thereby jeopardize the wall paintings inside.

Another principle question is: what would be the optimum solution for the open roof areas? One possibility would be to install trapdoors which could be shut when it rains. In the long run, it will be necessary to renovate the roof areas, especially in view of the increase in precipitation during the last few years. This phenomenon has led to problems with traditional flat roof constructions throughout the Western Himalayas. Thus it will be of the utmost importance to prevent further water leakage. The roof insulation could be greatly improved by using foil; gently sloping roof surfaces of approx. 5° plus amply dimensioned water spouts would guarantee that all standing water be drained off as quickly as possible.

BUILDING'S FINAL APPEARANCE

EXTERIOR AREAS

In the course of external renovation work, it is also recommended to replace the existing concrete block walls in the lower area in front of the main building as well as in the ambulatory area of the upper temple with natural stone walls.

EXTERIOR WALLS

The vertical development of the building is made evident by the use of different techniques of masonry and that change of technique causes some damages like crumbling areas and cracks. For the renovation of the facade, the defects have to be repaired with a clay plaster. Finally, the entire facade will have to be repainted. The clay composition and the colour pigments used must be carefully selected: this also concerns the colour composition of the black stucco frames at the eastern facade that appears very artificial at the moment.

WINDOWS AND DOORS

It is certain that most of the windows need to be renovated, both in respect to their wall fitting and glazing. Ideally, the windows and doors should be renovated in line with the traditional beautifully hand-crafted frames of the existing ones, e.g. the window in room 4 and the south-west facade window in room 16. Hence both new windows in the assembly hall can be regarded as a deterrent, and they should be replaced as soon as possible.

FLOORS AND INTERIOR WALLS

Recommendations: Simple wooden flooring would upgrade the appearance of the rooms whilst the interior walls need to be newly rendered and painted in a light colour. Room 7a, which is currently inaccessible, could be reopened at the original place, which can still be easily seen on the inside.

RESTORATION OF THE MURALS

In Summer 2011 a team of restorers from the University of Applied Arts Vienna surveyed the wall paintings of Dangkhār and elaborated the technical preconditions for their restoration in order to outline a wallpaintings conservation strategy within the project frame.¹ Their fieldwork focussed on the two most representative and also for visitors accessible interiors of the monastery decorated with significant wallpaintings: in the assembly hall on the first storey of the monastic building complex and the upper temple located separately from the monastery building above a cliff. In order to prevent any further crumbling, the cracks in the area of the murals in HH Dalai-Lama Residence will have to be repaired as a minimum requirement. Finally, prior to any further procedures, an urgently recommended expert opinion on restoration details and possibilities will require a thorough inspection of the location.

¹ See "WALL PAINTINGS OF DANGKHAR MONASTERY" on page 247.

POSSIBLE FUTURE USES AND MAINTENANCE

At present only the sacred spaces of the monastery and the rooms in which the monks are accommodated are in regular use. Consequently, the assignment of a reasonable future use for the monastery rooms that are currently empty is of major importance. An urgently required alteration concerns the obstructed reredos of the assembly hall, which is currently covered by a bookshelf and should be exposed to render the paintings of the rear wall visible. In order to do so a new space for the accommodation of the books has to be found, which ideally offers room for studying and doing research too. For this purpose the rooms of the northern part of the monastery would be appropriate, which could be used on both floors (rooms 7, 7a and 8 on the first and rooms 17, 18 and 19 on the second floor) as a library and study space. If required, an additional entrance could be established by reopening the walled up door in the north-eastern wall of the assembly hall.

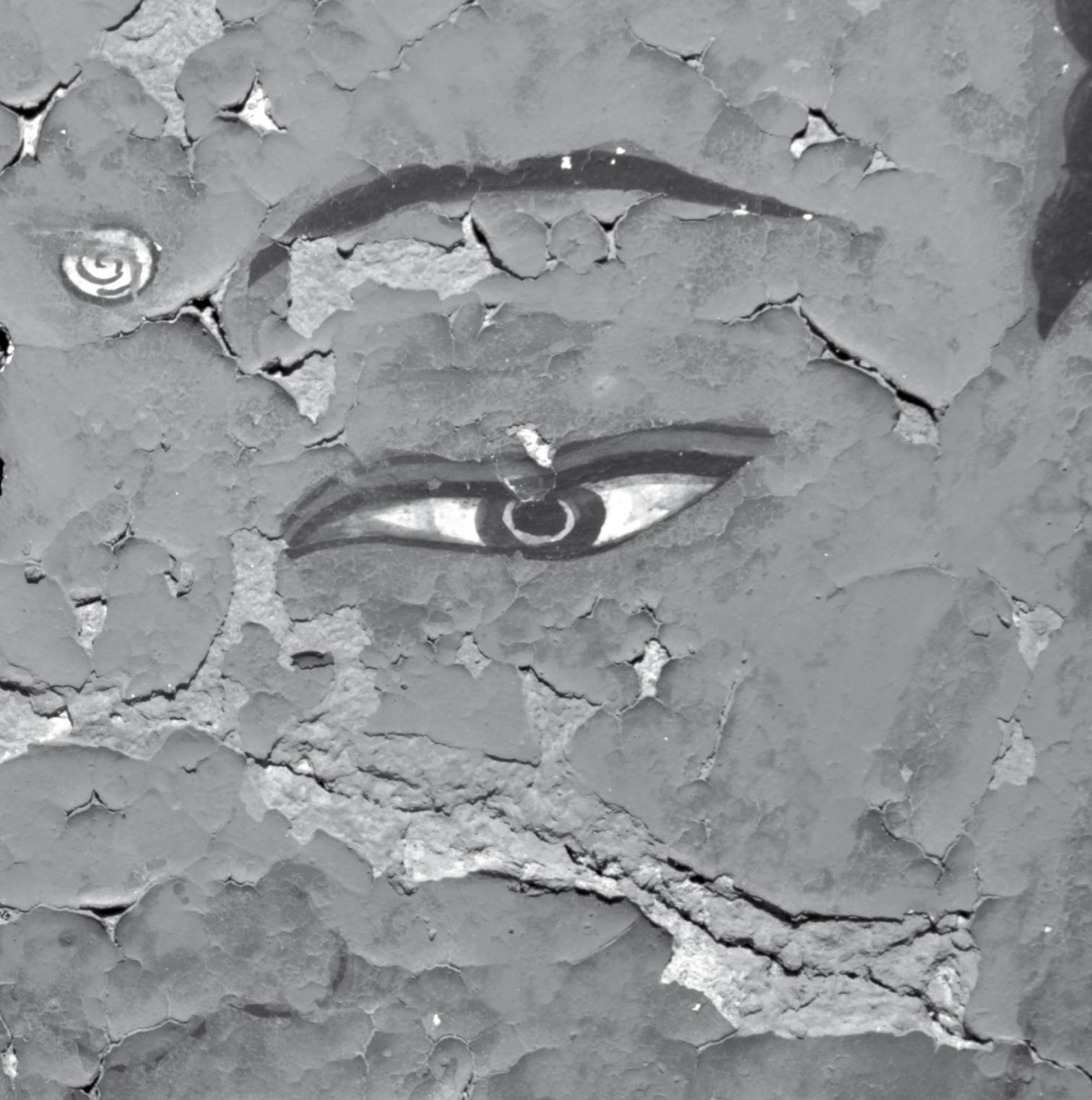
The current collection of the museum next to the entrance of the monastery consists of a mixture of exhibits and local products for sale. In the long term it would be advisable to place the valuable exhibits, as well as the so far not displayed thangkas of the monastery, inside the main monastery building. The empty spaces on the first and on the second floor of the southern tower (rooms 12 and 21) could provide room for this.

Likewise lying waste are the rooms of the tower above the monastery, which were used as a staircase to the upper temple in the past. The stairs could be repaired without much effort, to offer access to the rooms and their fine view. It would also be conceivable to use the inside walls as display areas and document local projects on them.

Another structural redevelopment necessary for further uses concerns the side rooms of the upper temple (rooms 36 and 37), which are in a very bad state and recently only in use as a kitchen during certain religious celebrations. As the structure of this area is hard to save, a remake seems more appropriate – this also concerns the area in front of, as well as the roof of the entrance to the temple (room 35).

Directly linked to the considerations about the usage is the question of which rooms could be equipped with solar-powered light and energy in the course of the infrastructural improvements. Detailed concepts for the various areas can ultimately only be established in cooperation with the community of monks – nevertheless it is important to state that only a defined usage of the various areas guarantees their continuous maintenance.





9

WALL PAINTINGS OF DANGKHAR MONASTERY



288 Detail of the Green Tara in the assembly hall, northern wall. G&S 2011.

9

WALL PAINTINGS OF DANGKHAR MONASTERY

Maria Gruber, Gabriela Krist und Kathrin Schmidt

INVENTORY AND APPROACH TO CONSERVATION

INTRODUCTION

The scope of this analytical study was to assess the wall paintings of the monastery during a first inspection in order to outline a wall painting conservation strategy as part of the *Save Dangkhār* project. An assessment and overall survey of the wall paintings were undertaken to identify the materials of the murals and the painting technique employed, as well as to document and evaluate their present state of condition and damage.

The fieldwork focused on two rooms which are of the greatest significance for the monastic community and the visitor alike: the assembly hall (Tib. *’du khang*) situated on the first storey of the main building and the upper temple (Tib. *lha khang gong ma*) located on top of a cliff above the monastery.

The wall painting assessment was based on visual diagnosis and on-site tests, and furthered by post fieldwork laboratory analyses. Its documentation was realised with photographs and digital mapping through the recording of selected assessment criteria. The assessment and documentation of the wall paintings preserved in Dangkhār follow the methodology selected and applied at the monastic complex of Nako in the Upper Kinnaur.

They were, however, adapted to the limitations in personnel and time during the 2011 Dangkhār fieldwork. Based on the fieldwork results and subsequent scientific analyses, a twofold approach is suggested hereafter. The approach takes into consideration the physical conservation of the murals and the drafting of a viable conservation program to be implemented in the coming years by a team of professionals supported by a few students in close collaboration with the team of architects from TU Graz.

- Mapping glossary:
-  Unpainted wall surfaces
 -  Secondary painting phase
 -  Thinned painted surface
 -  Washouts, waterdrops, water drips
 -  Flaking painted surfaces
 -  Cracks within masonry and plaster
 -  Voids within masonry and plaster layers



289 Map of the assembly hall. Northern wall with the extent of undecorated plaster, repair and recoated surfaces indicated. University of Applied Arts Vienna 2011.



290 Map of the assembly hall. Northern wall showing voids, cracks, flaking and thinned painted surfaces. University of Applied Arts Vienna 2011.

WALL PAINTINGS OF THE ASSEMBLY HALL

DESCRIPTION: THE WALL PAINTINGS

The wall paintings of the assembly hall (Tib. 'du *khang*), situated on the first storey of the monastery, are considered to be the oldest murals preserved inside the main building although a secure date has yet to be established. Among the great variety of iconographical subjects, protector deities are represented on the eastern wall located right of the entrance. A magnificent Green Tārā (Tib. *sGrol ljang*) (see fig. 288), flanked by Atiśa (982 – 1054) and his main disciple 'Brom ston pa (1005 – 1064), are depicted on the northern wall, next to a spectacular Buddha Amitābha (Tib. *Sangs rgyas 'od dpag med*). The assembly hall measures approximately 7 x 7.5 meters in length and 2 meters in height. The back wall of the assembly hall is not directly visible, as it is almost completely blocked by a wooden bookcase cum a glazed cabinet-altar built across the room. During fieldwork, however, the monastic community facilitated access to the space behind the shelves. For the first time in years it was possible to have a closer inspection of the murals painted on the western wall. In contrast to the three other walls of the room, which bear scarce traces of wall paintings, the murals of the western wall are almost entirely preserved. The paintings were realised *a secco* on mud-plastered surfaces. Moreover, on the occasion of the temporary dismantlement of the glazed altar, three polychrome clay sculptures were documented and cleaned as a preliminary conservation intervention.

ASSESSMENT: VISUAL DIAGNOSIS, ON-SITE TESTS AND LABORATORY ANALYSES

Criteria to assess the historical structure were set up with the primary plaster phase, the re-plastering and repairs and the primary and secondary painting phase. Laboratory analyses clarified questions on the painting technique, the palette of pigments applied, the binding material used and the ground and supportive plaster layers implemented. Parameters to survey the murals, the damage patterns, and condition covered voids, cracks within masonry and plaster, losses of ground and paint layers, washouts and deposits in the form of drips, flaking and chalking of paint layers, thinned painted surfaces, stains on painted surfaces, visible water horizons, mud deposits on painted surfaces, soot and dust. On-site tests addressed wall surface temperature, plaster surface resistance, plaster surface conductivity (indicating moisture and/or water-soluble salts) and presence of salts and practicability of conservation measures.

INVENTORY: ASSESSMENT RESULTS

HISTORICAL STRUCTURE

The primary plaster phase is visible on the northern wall, adjacent to the wooden cabinet, where large parts of the wall paintings are detached and also to some extent on the other walls of the room. Fully re-plastered areas are found on the right half of the northern wall continuing onward to the left side of the entrance wall. Partial plaster repairs could be located on the northern and eastern walls which are moderately covered by a unifying beige coating.

In total, approximately 60-70% of the three visible walls show plastered or repaired surfaces. Fragments of the first wall painting decoration phase are found on the right side of the entrance wall and include depictions of guardians and protectors. On the southern wall fragments of the first wall painting phase are visible too, but due to few remnants left no iconographical analyses could be undertaken. Wall paintings cover nearly the entire western wall.

The murals were partly revealed in the summer of 2011 displaying the figure of Buddha Śākyamuni in the middle, flanked by his two disciples, Śāriputra and Maudgalyāyana. Other historical figures, such as Nāgārjuna, are visible too. As the bookcase cum cabinet-altar couldn't be removed, a detailed assessment could not be carried out. Compared to the other walls of the assembly hall, the paintings are far less fragmentary. The amount of the murals still preserved on the western wall can be explained by the protective role performed by the wooden cabinet.

- Mapping glossary:
-  Unpainted wall surfaces
 -  Secondary painting phase
 -  Thinned painted surface
 -  Washouts, waterdrops, water drips
 -  Flaking painted surfaces
 -  Cracks within masonry and plaster
 -  Voids within masonry and plaster layers



291 Map of the assembly hall. The eastern wall with the extent of undecorated plaster, repair and recoated surfaces indicated. University of Applied Arts Vienna 2011.



292 Map of the assembly hall. The eastern wall showing voids, cracks, washouts and drips, flaking and thinned painted surfaces. University of Applied Arts Vienna 2011.

Roughly estimated, painted surfaces of the three visible wall areas today constitute only 30-40%. Moreover, the murals revealed a white ground layer on which layers of paint have been applied. A glossy surface is visible on some parts of the northern wall, too. Furthermore, a detailed inspection of the Green Tārā has shown that a former painting phase is still visible below the actual layer of paint; the same technique and artistic style were used for both phases. The other walls did not provide evidence of multiple painting phases, although the murals of the western wall still require to be examined thoroughly. Scientific analyses were based on this first on-site inspection and should help clarifying issues related to the painting techniques applied (i.e. the palette of pigments and binding medium used, the stratigraphy of support, ground and paint layers, as well as technological specificities).



293 Map of the assembly hall. The southern wall with the extent of undecorated plaster, repair and recoated surfaces indicated. University of Applied Arts Vienna 2011.



294 Map of the assembly hall. The southern wall showing voids, cracks, washouts and drips, flaking and thinned painted surfaces. University of Applied Arts Vienna 2011.



295 Western wall behind the wooden construction of the bookcase, fully covered with wallpaintings. G&S 2011 .



296 Wallpainting in the middle area of the western wall, with intact, although decayed paintings. G&S 2011.



297 Detail of the western wall. G&S 2011.



298 Wallpainting in the upper area of the northern corner, behind the wooden construction of the bookcase. G&S 2011.



299 Dustlayer above the entrance area. G&S 2011.

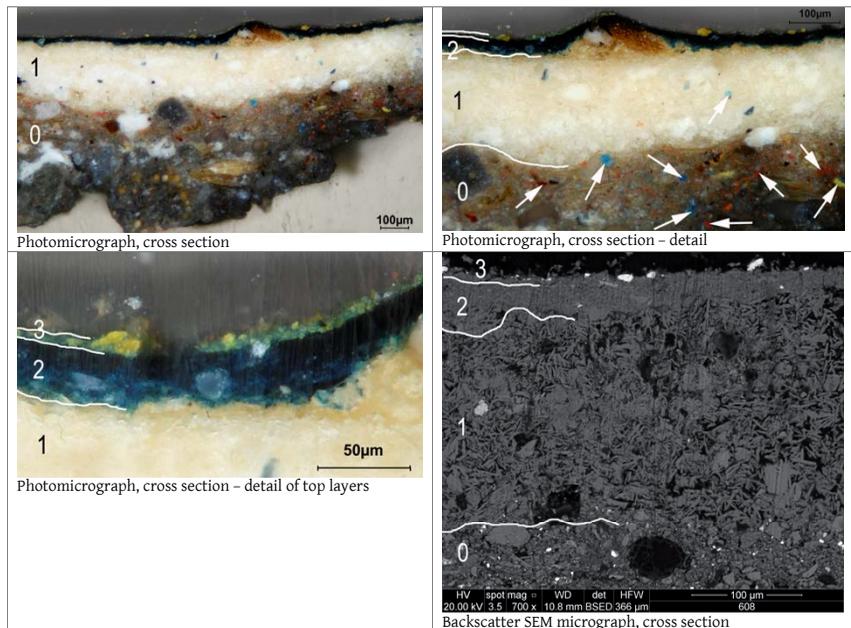


300 Wallpainting next to the entrance. Flaking areas and losses of paint layers. G&S 2011.

PAINTING TECHNOLOGY

In general, the scientific analyses of the samples confirm a traditional painting technique that is characteristic for this geographical area. The painting technique is termed “a secco”. Thin layers of paint are bound with animal glue and executed over a white gypsum ground. The binder of the gypsum glue is also an animal-based glue mixed with starch. As for the period of production of these murals, it is not possible to suggest any dates based on technical criteria, as datable pigments were not identified. The samples collected on the western wall have revealed interesting results. The paint layer and the ground layer were both executed on a mud-based plaster that also contains various pigmented grains (i.e. vermilion, azurite, and orpiment).

It is highly probable that these pigments originate from a former layer of paint which was executed underneath. By applying a new layer of plaster (i.e. plaster from sample 608), the surface of the original water-soluble layer, which was probably bound with animal glue, became wet. The pigment particles were partially removed and combined into the new plaster. In other words, today’s paintings may not be the original or the earliest murals of the assembly hall. Therefore, more samples should be analysed in order to address this issue. Meanwhile, two alternatives are envisaged. The first scenario involves the possibility of an older painting phase on the entire western wall, if not on all the walls of the room. Alternatively, it could also be the result of a local and partial repair work. Further analyses are suggested. The sample collected from the Green Tārā on the northern wall confirms that two different phases were locally executed. Animal glue was used for both the primary and secondary phases. Further investigations are also required in order to come up with more detailed information and allow appropriate interpretation.



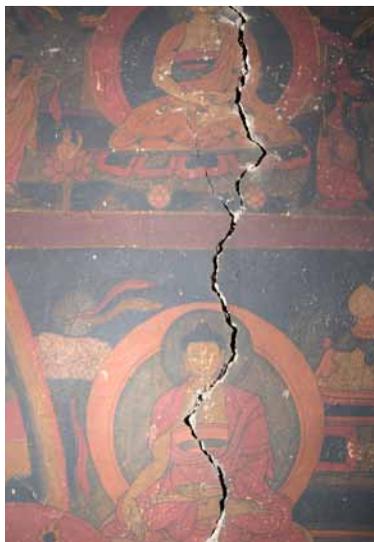
301 Sample 608(01D). The purpose of the samples is to characterise the layer, identify the binding material and the pigments and determinate the painting technique. University of Applied Arts Vienna 2011.

DAMAGE PATTERNS

Voids within mud-plastered surfaces were investigated. They are mainly located around cracks, under the load-bearing beams in the ceiling, and along the wall openings. Voids tend to create loss of adhesion within the plaster and masonry. Their causes may be diverse or combined (e.g. construction technology and material, tensile force, water, temperature, and salt).

Cracks were located on the northern, eastern and southern walls. Cracks appear in the form of single vertical and horizontal crack lines, as well as in crack systems. The latter mainly occur within the plaster and not in the masonry. Cracks were related to mechanical stress resulting from earthquakes and additional load due to the progressive enlargement of the building. Micro crack systems within the paint layers were discovered on all the painted surfaces. Washout was detected on the right side of the eastern wall indicating a former water infiltration by roof leakage. Washout on mud-plastered surfaces usually appears in connection to mud deposits or drips on adjacent areas and extant losses of water-soluble painted areas. Characteristic deposits occurred on the painted surfaces of the eastern and southern walls.

Losses of ground and paint layers were found on the three walls assessed. Despite the main loss of painted surfaces on the re-plastered areas, as mentioned earlier, more important losses of ground and paint layers were noticed within sections situated above the floor and below the ceiling. This can be explained by the presence of damp areas, especially in connection with water-soluble salts that were identified on the northern and eastern walls.



302 Cracks on the eastern wall. G&S 2011.



303 Repair-filling, deposits in form of channels. G&S 2011.



304 Green Tara detail, first and second paint layer. G&S 2011.

These damages could have been also induced by tensile stress (i.e. overloaded ceiling). Areas impacted with less important losses were also located on all three walls (e.g. the Green Tārā area). In this case, the ground is still visibly attached to the plaster support. Losses of paint and ground layers are attributed to major flaking leading to progressive and complete detachment of a layer.

Flaking of paint layers was discerned on all three walls, especially in the centre areas of the respective wall. Flakes form a characteristic craquelé pattern and might eventually detach at the edges due to lack of adhesion to the ground layer. Flakes dimensions range from 5 mm up to 35 mm. Chalking was not evident on the wall paintings.

Thinned painted surfaces were noticed on the eastern and southern walls from the floor level up to a height of 80 cm. Thinning might be caused by continuous mechanical abrasion possibly related to the frequentation of the hall.

Stains were not detected. There was no water horizon visible on the walls.

Deposits on painted surfaces appeared in the form of splashes and dots of different sizes. They might stem from later repairs or water infiltration, mainly consisting of mud and earth materials.

Dark soot and dust layers are visible on most surfaces of the walls, and can also be expected to some extent on the western wall of the assembly hall. Layers of dust were either compact or loose. Soot and compact layers of dust tend to occur together and are hardly differentiable. Soot is usually caused by the daily use of butter lamps; the greasy and sticky surface of soot particle helps absorbing dust.



305 Losses of paint layers, thinned painted surface and deposits. G&S 2011.



306 Losses and flaking areas. G&S 2011.



307 Unpainted surface in the north-eastern corner. G&S 2011.

WALL SURFACE TEMPERATURE

Generally speaking, thick walls made of mud brickwork and plaster like those of Dangkhar monastery act as ideal thermal buffers. They usually guarantee a very stable indoor temperature for the wall paintings. The measurement of the temperature has shown the usual, though not drastic, increase of temperature on the upper part of the walls of the assembly hall. There is, however, a considerable difference in temperature between the surfaces of the northern and southern walls. The western temperatures were measured on the right end corner of the northern wall which abuts bedrock, explaining the rather low temperatures. Not surprisingly the southern wall, which is directly exposed to the outside climatic conditions, shows the highest surface temperature.

PLASTERED SURFACE RESISTANCE

Unpainted plastered surfaces indicate different grades of resistance. Resistance depends on the type of plaster (original or repaired) or its degradation. Scaling on mainly original plastered surfaces could be related to moisture and/or the presence of salts, and was found on areas above the floor. Sanding was found on all unpainted and plastered surfaces.

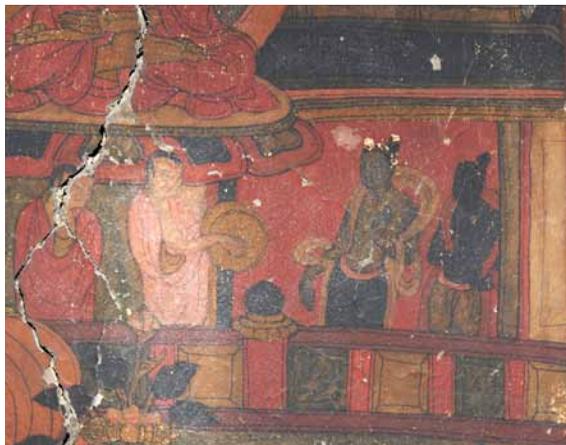
PLASTERED SURFACE CONDUCTIVITY AND PRESENCE OF SALTS

Scaling on plastered surfaces and high surface conductivity are induced by the increase of moisture content and the possible presence of water-soluble salt. Mud-based plaster is a highly porous material. It is not resistant to direct contact with water and allows quick absorption through capillarity, and sorption and permeability of water vapour. These properties lead to the presence and transport of water-soluble salts.

Plastered areas located just above the floor usually show a higher content of moisture due to rising dampness. Nitrates and chlorides were also found on the left corner of the northern wall and on the eastern wall just above the floor. These rather moist sections did not, however, contain any sulphates.



308 Detail before cleaning with sponges. G&S 2011.



309 Detail after cleaning with almost no visible effect. G&S 2011.

CONCLUSION: NEED OF CONSERVATION ACTIONS

The damage and alteration of the assembly hall's murals can be imputed to two causes, namely mechanical stress or tensile force (i.e. seismic activity and architectural work) and water infiltration. Both factors are related to the construction materials of the building, its use and maintenance.

In principle, mud-based bricks and plaster show low strength properties and are not resistant to water. Therefore, a regular maintenance, which includes an efficient protection against direct water infiltration, is essential for the preservation of the walls. Further attention must be paid to painted areas, in particular when the painting technique used is highly water-sensitive. The progressive enlargement of the main building over time could possibly explain the important loss of murals.

The present condition of the assembly hall's murals can be described as moderately stable with respect to the architectural characteristics of the building, and the adhesive propensity of the walls. At present, the core of the building seems partly protected from water infiltration. However, regional climate change, such as the heavy monsoonal rain of 2010, and seismic activity should be taken into account, too. Consequently, bad climatic conditions, earthquakes, and the present state of the building make it hard to evaluate possible hazards in the future.

As indicated above, there is no severe problem of adhesion of the paint, the ground, and the plastered surface. Thus said, there are considerable voids within the masonry indicating losses of adhesion between single masonry components. For a detailed condition report – including the rear western wall which is not directly accessible – further investigations ought to be undertaken.

The aim of an overall conservation program is to address the long-term stabilisation and consolidation of the wall paintings in order to prevent further deterioration.

Conservation measures for the painted areas include cleaning of the surfaces, consolidating of the paint layers, filling of the cracks and losses, as well as backfilling of the voids. Additionally, the aesthetic integration of the murals within the architectural context needs to be addressed. An aesthetic integration intends to present the fragmentary wall paintings as one of the foremost attractions of the room for the monastic community, pilgrims, and visitors.

Finally, the overall architectural restoration of the building may cause severe threats to the murals of Dangkhar. It is, therefore, strongly recommended that conservators assist the team of architects by setting up preventive measures to protect the wall paintings in all the rooms concerned.



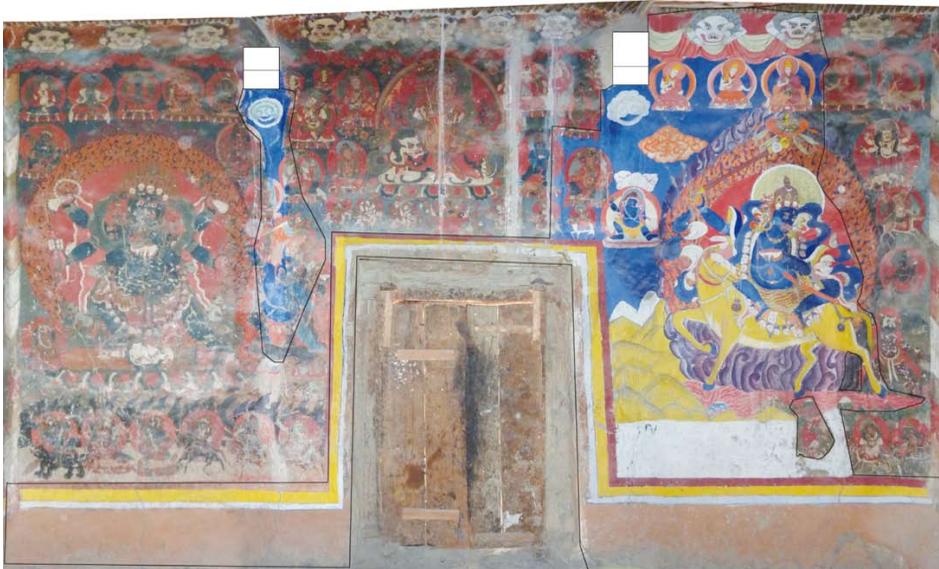
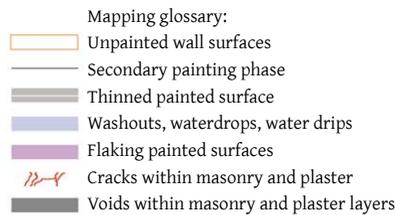
310 Detail of a cleaning with water. G&S 2011.

WALL PAINTINGS OF THE UPPER TEMPLE

DESCRIPTION: THE WALL PAINTINGS

The wall paintings of the upper temple (Tib. *lha khang gong ma*), situated on top of the cliff behind the main building, show a great variety of iconographical themes (e.g. protectors and tantric deities on the entrance wall, Medicine Buddhas on the side walls, life-sized representations of Buddha Śākyamuni, Atiśa (982 – 1054), and Tsongkhapa (1357 – 1419) on the front wall, and the twelve deeds of the historical Buddha (Tib. *ston pa'i mdzad pa bcu gnyis*) on a lower frieze). A quick glance at these murals reveals a wide chromatic palette and the use of very bright colours, partly due to recent restoration attempts. In contrast to the fragmentary murals of the assembly hall, the murals still preserved cover almost completely the walls of the upper temple. They were executed a secco on mud-based plaster. The painted areas measure approximately 5 meters by more than 3 meters in height each.

The assessment was conducted similarly as to the assembly hall's, but with an emphasis on the treatment and conservative approach to the later restoration measures. All four walls of the upper temple were examined.



311 Map of the upper temple. The north-east wall with secondary, over-painted areas defined.
University of Applied Arts Vienna 2011.

ASSESSMENT: VISUAL DIAGNOSIS, ON-SITE TESTS AND LABORATORY ANALYSES

The parameters to assess and analyse the architectural structure, painting technology, and present state of condition of the murals were set up according to the assessment methodology already used in the assembly hall of the monastery. Assessment and analytical methods were selected and performed similarly.

INVENTORY: ASSESSMENT RESULTS

HISTORICAL STRUCTURE

The primary plaster phase shows a smoothed surface which serves as an even support for ground and painting layers of the first wall painting decoration. Partial repairs made of plaster were noticed on the four walls. They were found on the skirting zone below the late restoration work, within the frieze where sections were uncoloured or whitewashed, and below single zones of the secondary painting phase. In theory, cracks should have been plastered and repaired before the late restoration attempts. However, many sections of the second paint layers were directly applied on to the original surfaces without any repair.

Large extents of the original wall paintings are found on all four walls. The narrative frieze, which is 50 to 80 centimetres in width, runs along the lower part of the walls – except for the entrance wall. The frieze also dates from the primary painting phase. The whole left side of the north-western wall, the area above the door, and the uttermost right side of the wall date back to the primary painting phase too.

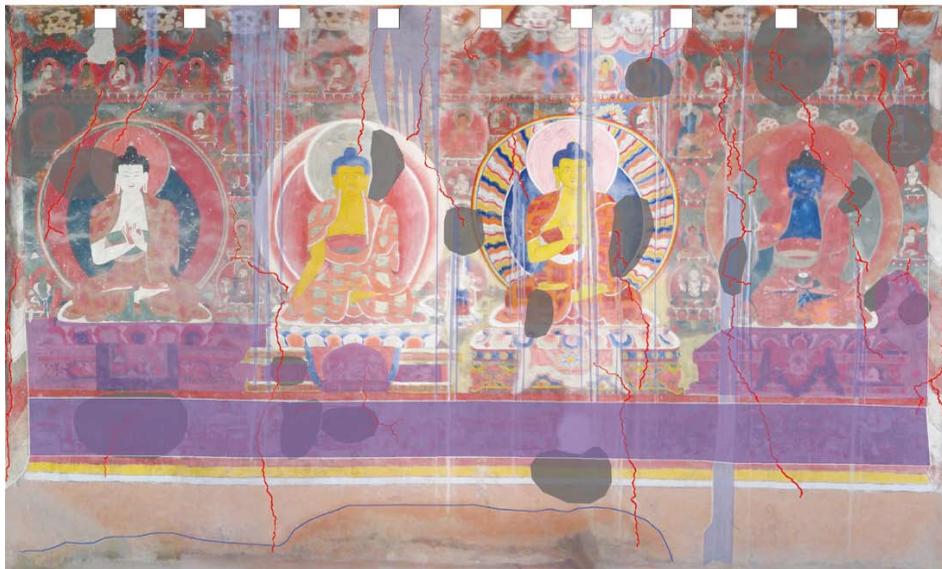


312 Map of the upper temple. The north-east wall showing voids, cracks, washouts and drips, flaking and thinned painted surfaces. University of Applied Arts Vienna 2011.

- Mapping glossary:
-  Unpainted wall surfaces
 -  Secondary painting phase
 -  Thinned painted surface
 -  Washouts, waterdrops, water drips
 -  Flaking painted surfaces
 -  Cracks within masonry and plaster
 -  Voids within masonry and plaster layers



313 Map of the upper temple. The south-east wall with secondary, over-painted areas defined. University of Applied Arts Vienna 2011.



314 Map of the upper temple. The south-east wall showing voids, cracks, washouts and drips, a water horizon, flaking and thinned painted surfaces. University of Applied Arts Vienna 2011.



315 Map of the upper temple. The south-west wall with secondary, over-painted areas defined. University of Applied Arts Vienna 2011.



316 Map of the upper temple. The south-west wall with voids, cracks, washouts and drips, flaking and thinned painted surfaces. University of Applied Arts Vienna 2011.

- Mapping glossary:
- Unpainted wall surfaces
 - Secondary painting phase
 - Thinned painted surface
 - Washouts, waterdrops, water drips
 - Flaking painted surfaces
 - Cracks within masonry and plaster
 - Voids within masonry and plaster layers



317 Map of the upper temple. The north-west wall with secondary, over-painted areas defined. University of Applied Arts Vienna 2011.



318 Map of the upper temple. The north-west wall showing voids, cracks, washouts and drips, flaking and thinned painted surfaces. University of Applied Arts Vienna 2011.

As part of the entourage of Bhaiṣajyuguru, the first Buddha painted on the south-eastern wall from the left, almost the whole fourth Buddha, as well as nearly all the thirty-five smaller Buddhas depicted in the background stem back to the primary painting phase.

On the south-western wall, more or less the entire representation of the guru lineage and parts of their surroundings belong to the original murals. The first and fourth main Buddhas of the north-western wall and many figures in the background are also from that phase. Secondary painting phase corresponds to attempts to restore damaged murals by locals. This late restoration work is visible on the right side of the entrance wall, in particular the section depicting dPal ldan lha mo, Tibet's tutelary deity. The yellow, red, and white bands running around the doorway or bordering the frieze are later additions too.

On the south-eastern wall, the second Buddha from the left, the third one, two smaller background figures, two animals of the painted curtain (Tib. *sham bu*) located below the ceiling, and sections of the fourth Buddha (i.e. mainly the skin area) have been repainted. On the south-western wall, the main depiction of Śākyamuni along with two vertical stripes located on both sides and running from the beams down to the frieze are part of a later restoration work.

On the north-western wall, the second Buddha from the left, and almost the whole background area from the ceiling down to the frieze, the motives situated in the lower background of the first Buddha, the lotus seat, the head and mandorla of the third Buddha, as well as some parts of the fourth Buddha (i.e. mainly his skin) were also subject to restoration. In addition, the second Buddha presents a glossy surface covering his body, the lotus seat, and the mandorla. This late restoration work tends to follow the outlines and motives of the original paintings in many instances. Many details such as the Buddhas' attributes, their palms and soles, the pattern of the robes, and parts of the background are identical to the first painting phase. While the outlines from the primary phase were scrupulously followed, large sections were generously re-coloured.



319 Frieze detail, first painting phase. G&S 2011.



320 The two painting phases with glossy varnish. G&S 2011.



321 The two painting phases without glossy varnish. G&S 2011.

PAINTING TECHNOLOGY

The murals of the upper temple follow the *a secco* painting technique, using animal glue as a binder. The paintings are executed on a ground made of white gypsum. The ground layer contains a mixture of starch and animal glue as a binder. Dating the paintings based on the pigments is not possible.

The sample 605 (02 U) corresponds to the late restoration work. The binding medium of the secondary phase is also made of animal glue. Due to the presence of chrome yellow and barite, it can be concluded that the second phase cannot have been realised before the nineteenth century since pigments containing chromium were only discovered at the beginning of the 19th century.

Although the restoration work was applied over the primary phase, it does not necessarily entail that the original murals are still preserved underneath. Further analyses should consequently be carried out.

As for the frieze, it was subject to a previous conservation treatment as a thin transparent organic layer was found [604 (07 U)].



322 Flaking and losses of paint and ground layer. G&S 2011.

DAMAGE PATTERNS

Voids within the paintings supportive earthen structures were noted in connection with crack lines, under the load-bearing beams in the ceiling, as well as in the middle of the walls. Voids result from a lack of adhesion within the plaster and masonry; the causes can be imputed to material and construction technology, mechanical stress, water, temperature, and salts.

Cracks are found on all the walls. They occur in the form of single vertical lines which often reach the whole height of the walls, in horizontal lines as well as in crack systems. Cracks are visible on all the corners, from the ceiling down to the floor. Some of the deepest cracks allow air to pass from outside.

A washout was observed on the south-eastern wall above the second Buddha from the left, together with voids and deposits in the form of drips. On the south-western wall, washouts are situated above Buddha Śākyamuni and to the right side of Tsongkhapa, where deposits in the form of drips were equally noticed. In the case of Tsongkhapa, extant flaking goes with the fluted areas.

Water infiltrations from the roof are assumed to be the primary cause of these washouts and deposits. Characteristic deposits in the form of drips were documented on all painted surfaces, mainly in the upper areas of the walls. Drip-like deposits are not only located below the ceiling but also within open crack lines. Most of these deposits were assessed on the south-eastern wall.



323 Losses of the paint layer with overpainting. G&S 2011.

Losses of ground and paint layers are found on all four walls. Major losses were recorded under the ceiling on the south-eastern and south-western walls; on the south-eastern wall a distinctive area with losses was found above the floor. Besides these major losses, clusters of smaller losses ranging from 10 mm to 80 mm were reported on all four walls. These clusters are combined with cracks and flaking areas, and occasionally located along the voids. Detachments of ground and paint layers are related to loss of adhesion that might have been induced by mechanical stress or as the consequence of flaking and surface cracks.

Flaking of paint layers was documented on all surfaces but principally within the frieze and on the rear wall. Smaller flaking areas were found on the first Buddha from the left, in the background, and on the fourth Buddha (i.e. primarily on his skin). Flakes are part of a craquelé pattern and might progressively detach on the edges due to a lack of adhesion to the plaster layers. Their dimension ranges from 10 mm up to 45 mm. Flakes with loose edges include both paint and ground layers.

Chalking was not observed on the walls of the upper temple. Thinned painted surfaces were visible on all wall areas from 50 cm up to a height of 80 cm; more or less the whole frieze running horizontally.

Because of thinning, an overall underlying orange paint layer became visible in the frieze, as well as in some areas on the primary painting phase above. Thinning might be caused by continuous mechanical abrasion.



324 Deep crack and losses. G&S 2011.

Stains were detected within the frieze in the form of characteristic dots with a diameter of 7 mm to 10 mm. Dot-shaped stains were also recorded on the mandorla of the fourth Buddha from the left on the south-eastern wall, as well as on Atiśa's halo.

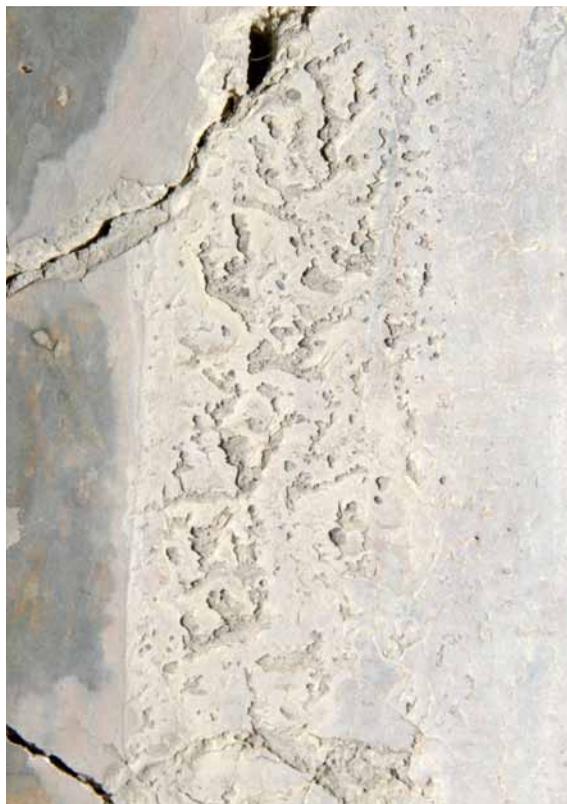
A single water horizon is visible on the south-eastern wall stretching from the left corner, from the bottom to the centre of the wall with a maximum height of approximately 30 cm. This water horizon is accompanied by a major loss-area below, and by the presence of water-soluble salts. The damage might have been caused by some architectural feature built outside.

Deposits have appeared in the form of splashes and dots of different sizes on all painted surfaces. They have been observed on most of the left side, the uttermost right side of the north-eastern wall, throughout the frieze, and on the first Buddha of the south-eastern wall from the left. They consist of mud-based materials and presumably result from later repairs or water infiltration.

Traces of soot were found behind the table-altar at the back of the room. Layers of dust, both compact and loose, are visible on all the walls. Findings were compiled in a comprehensive photo documentation; the graphic mapping helps illustrating the extent of the phenomena recorded.



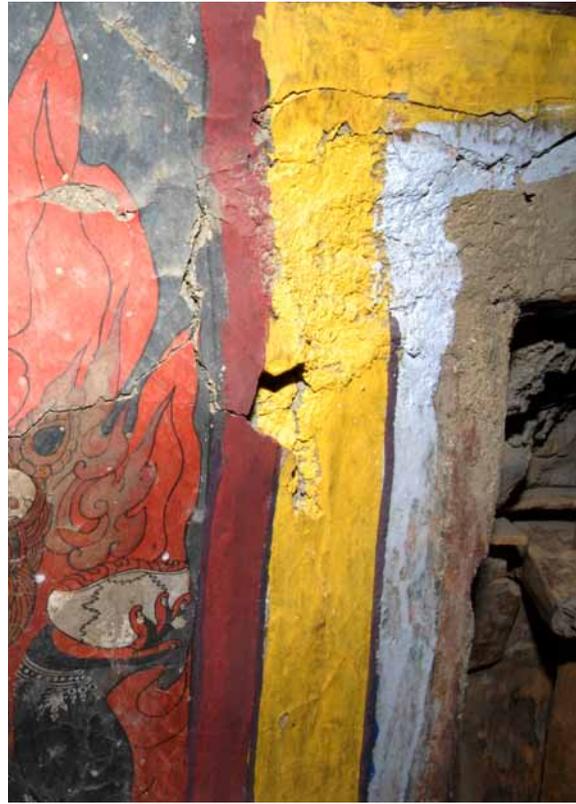
325 Surface deposits, drips out of crack. G&S 2011.



326 Earthern deposits on the murals. G&S 2011.



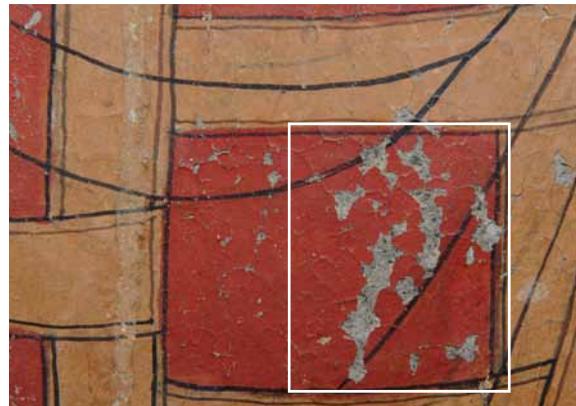
327 Layer of dust. G&S 2011.



328 Voids, cracks and losses. G&S 2011.



329 Test area for varnish removal. G&S 2011.



330 Test area for consolidation of flaking. G&S 2011.

WALL SURFACE TEMPERATURE

Surface temperatures in the upper temple show a minor distribution of values. Temperatures are slightly higher on top of the walls. Not surprisingly, the temperatures on the north-eastern and north-western wall surfaces were slightly lower than those measured on the south-eastern and south-western walls. Despite the extreme exposure of the building to direct climatic conditions, the temperatures taken on all surfaces inside the room are stable and do not show any extreme variations.

PLASTERED SURFACE RESISTANCE

The scaling of plastered surfaces indicates a rather low surface resistance on unpainted areas located above the floor. In contrast, visible plastered areas below the ceiling show almost no sanding surfaces. They proved to be compact and quite resistant to abrasion. On the other hand, the lack of resistance could be related to moisture, induced by rising dampness coming from the floor, and the presence of water-soluble salts.

PLASTERED SURFACE CONDUCTIVITY AND PRESENCE OF SALTS

The high conductivity of some plastered surfaces results from the presence of salts, for instance on the south-eastern wall where a water horizon is visible. Nitrates, sulphates, and chlorides were found on moist areas devoid of paintings. The other walls of the room do not show signs of comparable damage. As mentioned above, moisture and salt at the foot of the south-eastern wall are caused by water infiltration.

CONCLUSION: NEED OF CONSERVATION ACTIONS

Mechanical stress, induced by seismic activity, and water infiltrations are viewed as the most distinctive damage factors. They suggest structural deficiencies of the building and lack of maintenance.

With its singular position on the very top of a cliff, this single-room edifice is exposed to extreme climatic conditions. Rain, snow, and erosion are seen as having detrimental effects on the building.

The buildings infrastructures need partial revision and architectural restoration in order to prevent water infiltration, the development of moisture, and the coming of air from outside.

As for the murals, the various phases shall be addressed separately. The general state and condition of the primary painting phase can be described as fair to middling. The principal problem is the loss of adhesion between the paint and the ground layer, and between the paint, the ground layer, and the plastered surface. Large areas of the original murals are threatened to crumble, especially on the north-western wall. A remediation is urgently needed.

The latest restoration attempts are in a better condition, as the areas concerned were partly repaired prior to the repainting. Problems of paint adhesion were not noticed.

A comprehensive conservation program for the upper temple shall concentrate mainly on the overall and effective consolidation of the wall paintings. This must be realised by cleaning, filling cracks and losses, and backfilling voids. An aesthetic approach should also be considered with regard to both painting phases. Finally, the overall restoration of the upper temple's murals will require the close collaboration of a team of architects.

CONSERVATION AND PRESERVATION STRATEGY

As the wall painting assessment of the assembly hall and the upper temple suggests, each room demands a specific approach to its conservation and preservation. As far as the assembly hall is concerned, the original murals are preserved in a fragmentary state. Large areas of the walls are empty and do not show traces of paint any more. The cultural and artistic enhancement of this room poses problems.

As for the upper temple, it shows an almost complete iconographical program of original paintings and later restoration work. However, the late restoration work differs noticeably from the original murals (i.e. in the artistic style, colours, but not so in the iconographic treatment).

Beyond the consolidation and stabilisation of these murals, approaches to conservation are addressed hereafter.



331 Test area for filling of losses. G&S 2011.

THE ASSEMBLY HALL CONSERVATION CONCEPT

It is estimated that only a third of the murals of the assembly hall is still existent. Priority should be given to the preservation of the fragmentary wall paintings and their artistic enhancement within the hall. An aesthetical approach to the treatment of unpainted surfaces is envisaged too. These surfaces, which represent more than 50% of the walls, will have to serve as a suitable and aesthetically pleasing background for the presentation of the remaining murals. The treatment of these surfaces would imply an overall re-plastering following the original fine, smooth, and greyish colour in order to recreate a textured finish. A specific finishing treatment could be applied to homogenise the appearance of both murals and unpainted surface.

THE UPPER TEMPLE CONSERVATION CONCEPT

The walls of the upper temple are almost completely coated with paintings. The original murals can easily be differentiated from later restoration attempts. It is to be expected that more than one artist took part in the decoration of the temple. Besides cleaning and consolidation, the main conservation issue is the differentiated approach to the treatment of the original murals and retouched areas. The recovering of the original murals – if it is indeed possible to do so – shall be succinctly addressed hereafter. During fieldwork, the authors of this report were confronted with the general wish to enable the recovering of the original murals to aesthetically unify the present impression of the room. The ethical approach to conservation tends to view an artwork within its historical and chronologic of development, which may include several layers or phases in the case of wall paintings. Therefore, the complete re-covering of the original murals is à priori not suggested in this report. In addition, it is believed that the original murals may not be preserved below the retouched areas. Moreover, practical aspects also speak against the removal of later layers of paint. As both painting phases are water-based, the removal of the upper layer could seriously endanger the original murals. At the moment, a conservation concept cannot be formulated unless a consensus is reached. Ultimately, it is for the monastic community to decide the appropriate course of action.

IMPLEMENTATION OF CONSERVATION MEASURES: CONSERVATION PROGRAM

Filling of cracks and losses within the painted areas have to be undertaken on all the walls. Filling suggests mud-based material. Backfilling of voids within the supportive masonry is the main task of the conservation program due to the extent of voids assessed. Backfilling materials should be done in accordance with the methodology established for the fillings; masonry components should follow specific requirements. The consolidation of paint layers asks for an applicable treatment according to the degree of the damaged area. Large-scale measures as well as selective small-scale interventions are required.

On-site tests proved that mainly non-water based cleaning methods should be applied on the painted surfaces. Mud deposits should be removed by mechanical means. As some areas present deposits with a strong adhesion to the painted surfaces, the thinning and reduction of these deposits could be a reasonable compromise to on the one hand, fulfil an aesthetic result and, on the other hand, to protect and preserve the highly sensitive paint layers. The large-scale tasks of removing the re-plastered zones and applying the repair plaster and suitable finish ask to be integrated within the architectural conservation program.

TECHNICAL STUDY OF WALL PAINTING

Place: Dangkhar monastery, Himachal Pradesh, India

Object: Wall paintings

PURPOSE OF THE INVESTIGATION:

- Characterisation of layers
- Identification of binding media
- Identification of pigments
- Determination of the painting technique

Samples taken by: Dr. Mag. Maria Gruber, Mag. Kathrin Schmidt

Date of sampling: July 2011

Number of samples: 6

Samples description:

604 (07 U)	Upper Temple, South-east wall "Fries" in sky underneath the 2nd Buddha from the left; original (?)
605 (02 U)	Upper Temple, North-west wall 2nd Buddha from the left, red underneath his left leg; overpainting (?)
606 (04 U)	Upper Temple, South-west wall 1st figure in red cloth, place above the left knee; original (?)
607 (01 DL)	Dalai-Lama's room, wall with the door Left side of the wall painting, over the door. Modern painting (?)
608 (01 D)	Dukhang, West wall Dark background on the left side of the wall. Probably original painting (?), no older phases are visible.
609 (04 D)	Dukhang, North wall "Green Tara" on the left side of the wall. Probably overpainting with the original painting (?) underneath.

ANALYTICAL METHODS:

- Optical microscopy in reflected light (OM)
- Scanning electron microscopy with energy-dispersive X-ray analysis (SEM-EDX)
- Spot tests (ST)
- Tests of solubility
- Staining tests (StT)

EXPERIMENTAL:

Samples preparation

Cross-sections for studying layer build-up were prepared by mounting of samples in acrylic resin (Spofacryl, Dental a.s.) followed by dry grinding and polishing.

Stratigraphy of layers and analysis of inorganic components

Light microscopy of cross-sections was carried out in normal reflected light and UV-fluorescence-microscopy using Nikon Eclipse ME 600 microscope fitted with digital camera Nikon Coolpix 990; 100W halogen lamp, 100W high pressure mercury lamp, UV filter 330-380 nm.

For scanning electron microscopy of cross-sections a Philips XL-30 ESEM¹ under high vacuum at an acceleration voltage 20kV, fitted with the X-ray device was used.

Legend to the SEM-EDX measurements: A – area analysis, S – spot analysis, main elements are bold, trace or uncertain elements are in parentheses.

Identification of organic binding media

Spot tests (microchemical tests)² to indicate the types of binding media (oils, proteins and plant gums) were performed directly on selected scrapings; layers were separated from each other as far as possible.

Testing for drying oils (test of presence of glycerol), for proteins (detection of pyrrole-derivatives), for plant gums (detection of pentoses with 5-methyl-resorcin) and for starch (detection of starch using the iodine/potassium iodide solution in water – Lugol's solution) were undertaken.

Results of the spot tests were complemented with the results of the staining tests (histochemical analyses)³ performed on the cross-sections. Following staining agents were used:

Amido black AB2 (0,1%-solution in a mixture of water and glycerol) and Ponceau S (saturated solution in 1%-acetic acid) – staining for proteins detection

Sudan Black B (saturated solution in 60% isopropanol) – staining for oils detection

RESULTS:

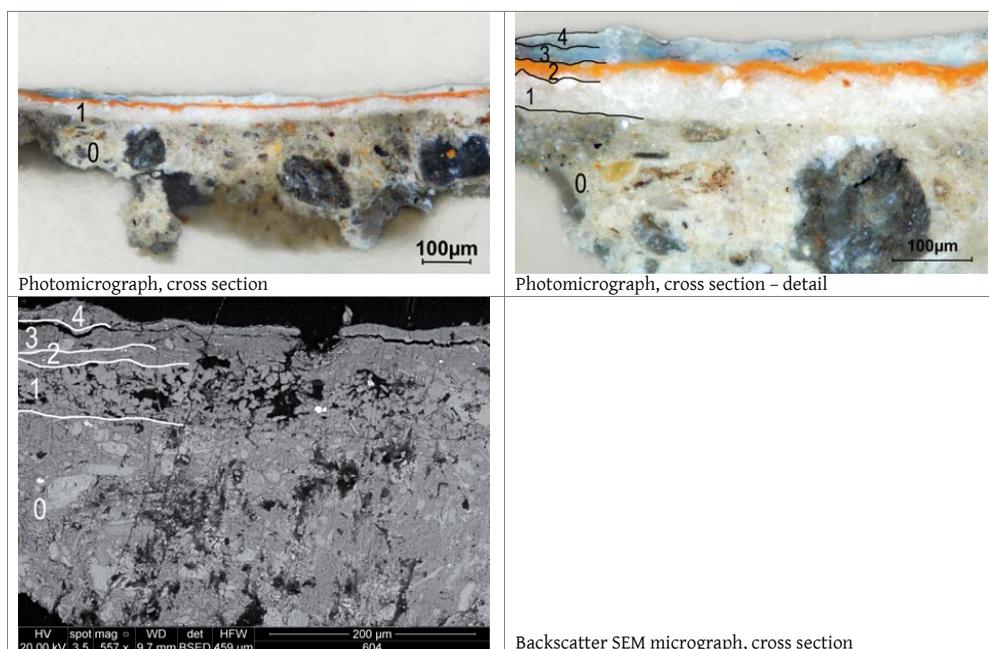
Samples description, stratigraphy of paint layers, microphotographs of cross-sections and the results of all analyses performed are summarised in the following pages.

¹ Measurements undertaken by DI Karol Bayer, Institute for Art and Technology, University of Applied Arts Vienna.

² SCHRAMM, 1995.

³ MARTIN, 1977: 63-67.

Sample Nr	604 (07 U)
Temple / Location	Dangkhar monastery, Upper Temple, Southeast wall
Location / Description	"Fries" in sky underneath the 2 nd Buddha from the left; original (?)
Sampled by / Date	Kathrin Schmidt, 18 July 2011
Methods of analyses	OM, SEM-EDS, ST, ST
On-site sample description	Plaster →ground→orange paint layer (?)→white paint layer The surface of the painting is matt; "fries" paintings are very detailed and look like very sophisticated paint technique.
Purpose of sample	Characterisation of layers. Identification of binding media. Identification of pigments. Determination of the painting technique.



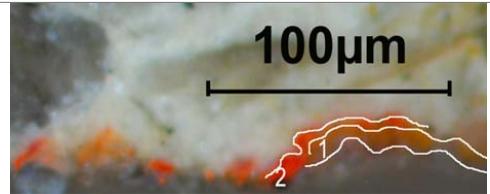
Layer Nr	Description and composition of layer	SEM-EDS-elemental analysis
4-	White layer containing gypsum and silicates, binding media is protein, highly probably animal glue.	A: S,Si,Ca,(Al,Mg,K)
3-	Light blue layer - on the left side of the cross section; contains gypsum and small amount of very fine grained blue pigment - probably indigo (pigment was not identified); binding media is protein, highly probably animal glue.	A: Ca,S,(Si,Al,Mg,K)
2-	Orange layer - homogeneous, contains very fine ochre and gypsum; binding media is protein, highly probably animal glue.	A: Si,Al,S,Ca,Fe,(Mg,K)
1-	White ground layer based on gypsum composed of particles of different shape and size. Gypsum contains some impurities in the form of silicates. Binding media is protein, highly probably animal glue, mixed with starch.	A: Ca,S,Si,Al,(Mg,K)
0-	Earthen plaster layer of light grey-brown colour, medium coarse, grains up to 150 µm; contains various rock grains and grains of calcium carbonate. The surface of the plaster was probably smoothed.	A: Si,Al,Ca,Mg,K,(Fe)

The surface of the fragment was first observed under the stereo microscope. On the surface as well as on the edges of the fragment there is clearly visible thin transparent organic layer indicating previous conservation treatment.

Sample Nr	605 (02 U)
Temple / Location	Dangkhar monastery, Upper Temple, North-west wall
Location / Description	2 nd Buddha from the left, red underneath his left leg; overpainting (?)
Sampled by / Date	Kathrin Schmidt, 18 July 2011
Methods of analyses	OM, SEM-EDS, ST, StT
On-site sample description	Filling material→ground (?)→red paint layer (?)→glossy surface The surface of the painting is very glossy.
Purpose of sample	Characterisation of layers. Identification of binding media. Identification of pigments. Identification of the glossy varnish. Confirmation of the presence of secondary layers.



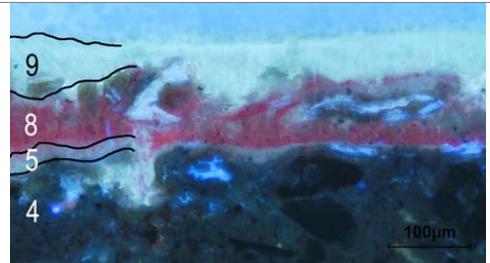
Photomicrograph, cross section A



Photomicrograph, cross section A - detail of the bottom layers



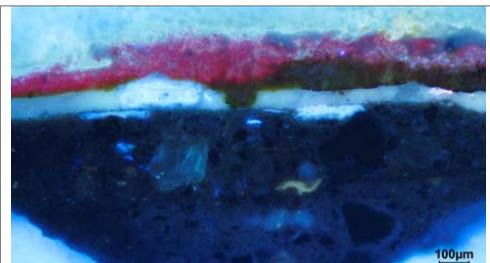
Photomicrograph, cross section A - detail of top layers



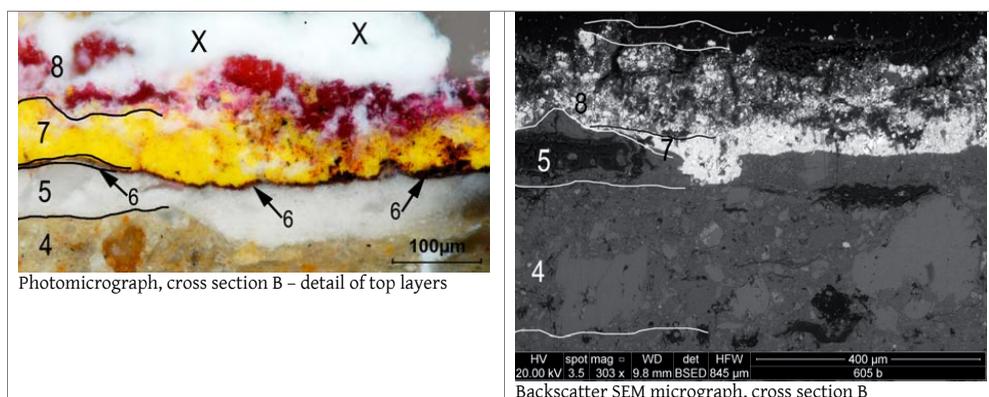
Photomicrograph, cross section A under ultraviolet light - detail of top layers



Photomicrograph, cross section B



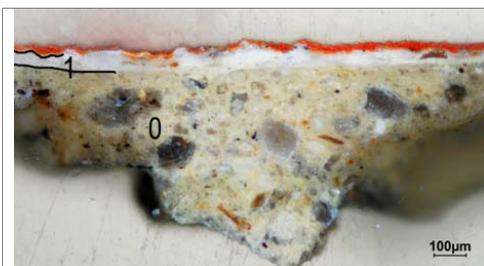
Photomicrograph, cross section B under ultraviolet light



Layer Nr	Description and composition of layer	SEM-EDS-elemental analysis
9-	Yellowish varnish, thick, based on protein, highly probably animal glue.	
8-	Purple-red layer containing red dye (synthetic? natural?) and baryte and gypsum as fillers; binding media is protein, highly probably animal glue. (White areas marked with "X" are holes filled with dust from grinding).	A: Ba,S,Ca
7-	Yellow layer*, containing lead white, chrome yellow and baryte; binding media is protein, highly probably animal glue. The layer is present only in the cross section B.	A: Pb,Ba,S,Cr
6-	Dark red-black layer, very thin – present only in the cross section B.	
5-	White ground layer, very thin, based on gypsum. Binding media is protein, highly probably animal glue.	A: Ca,S,Si,Al,(Mg,K)
4-	Earthen plaster layer of grey-brown colour, medium coarse, grains up to 150 µm; contains various rock grains, grains of calcium carbonate and addition of gypsum.	A: Si,Al,Ca,S,(K,Mg),((Ti,Fe))
3-	Earthen plaster layer of grey-brown colour, medium coarse, grains up to 150 µm; contains various rock grains and grains of calcium carbonate.	A: Si,Al,Ca(K,Mg),((Ti,Fe))
2-	Red layer containing vermilion (probably dry processed) – present only in the cross section A.	A: Hg,S
1-	Orange layer – homogeneous, contains very fine ochre and gypsum – present only in the cross section A.	A: Si,Al,K,Ca,Mg,(Fe)

* Yellow and purple-red layers are secondary layers containing pigments chrome yellow and baryte, used from the nineteenth century.

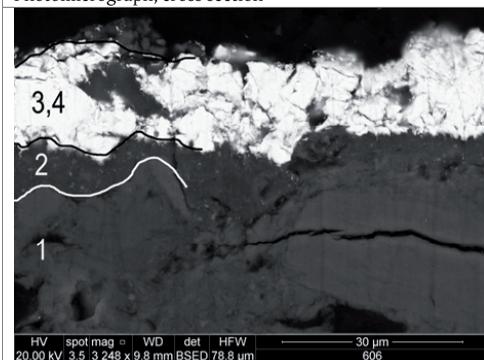
Sample Nr	606 (04 U)
Temple / Location	Dangkhar monastery, Upper Temple, Southwest wall
Location / Description	1 st figure in red cloth, place above the left knee; original (?)
Sampled by / Date	Kathrin Schmidt, 18 July 2011
Methods of analyses	OM, SEM-EDS, ST, StT
On-site sample description	Plaster → ground → red paint layer The surface of the painting is matt.
Purpose of sample	Characterisation of layers. Identification of binding media. Identification of pigments. Determination of the painting technique.



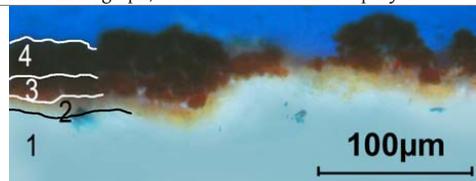
Photomicrograph, cross section



Photomicrograph, cross section - detail of top layers



Backscatter SEM micrograph, cross section



Photomicrograph under ultraviolet light - detail of top layers

Layer Nr	Description and composition of layer	SEM-EDS-elemental analysis
4-	Red layer containing vermilion (probably dry processed), grains size 5-10 μm; binding media is protein, highly probably animal glue.	A: Hg,S
3-	Red layer containing vermilion (probably dry processed), grains size 5-10 μm; binding media is protein, highly probably animal glue.	A: Hg,S
2-	Orange layer - homogeneous, contains very fine ochre and gypsum; binding media is protein, highly probably animal glue.	A: Si,Al,S,Ca,K,Fe,Mg,(Ti)
1-	White ground layer, very compact, based on gypsum composed of particles of different shape and size. Gypsum contains some impurities in the form of silicates. Binding media is protein, highly probably animal glue, mixed with starch.	A: Ca,S,Si,(Al,Mg,K)
0-	Earthen plaster layer of light brown colour, medium coarse, grains up to 100 μm; contains various rock grains, grains of calcium carbonate and addition of gypsum. The surface of the plaster was probably smoothened.	A: Si,Ca,Al,S,Mg,K,Fe, (Ti,Na)

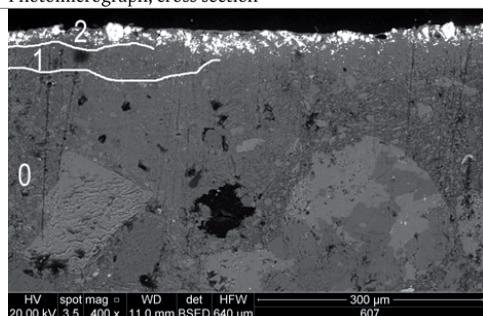
Sample Nr	607 (01 DL)
Temple / Location	Dangkhar monastery, Dalai Lama's room, wall with the door
Location / Description	Left side of the wall painting, over the door. Modern painting (?)
Sampled by / Date	Maria Gruber, Kathrin Schmidt, 21 July 2011
Methods of analyses	OM, SEM-EDS, ST, StT
On-site sample description	Plaster →ground→orange paint layer The surface of the painting is glossy.
Purpose of sample	Characterisation of layers. Identification of binding media. Identification of pigments. Determination of the painting technique.



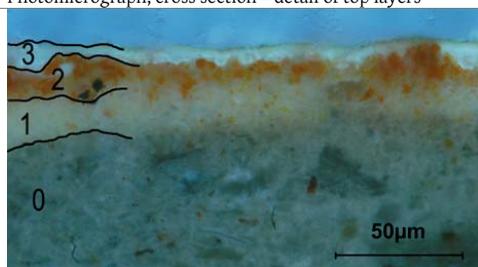
Photomicrograph, cross section



Photomicrograph, cross section – detail of top layers



Backscatterer SEM micrograph, cross section



Photomicrograph under ultraviolet light – detail of top layers

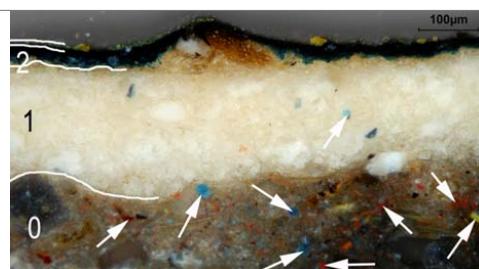
Layer Nr	Description and composition of layer	SEM-EDS-elemental analysis
3-	Yellowish varnish, thick; white yellowish fluorescence indicates the presence of glue. Presence of proteins was confirmed by spot tests as well as by the staining tests. Binder of the varnish is based on protein, highly probably animal glue.	
2-	Orange layer – homogeneous, contains red lead and gypsum; binding media is protein, highly probably animal glue.	A: Pb,Ca,S
1-	White ground layer, very compact, based on gypsum that contains some impurities in the form of silicates. Binding media is protein, highly probably animal glue.	A: Ca,S,Si,(Al)
0-	Earthen plaster layer of light brown colour, coarse, grains up to 1 mm; contains various rock grains, grains of calcium carbonate and addition of gypsum. The surface of the plaster was probably smoothed.	A: Si,Ca,Al,S,Mg,K,(Fe)

The dating of the painting based on the pigments composition is not possible.

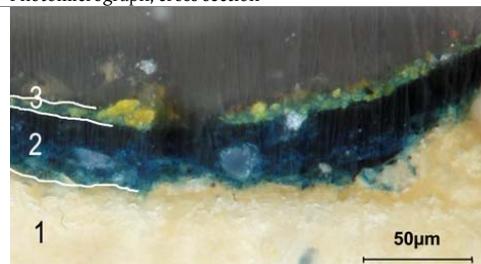
Sample Nr	608 (01 D)
Temple / Location	Dangkhar monastery, Dukhang, West wall
Location / Description	Dark background on the left side of the wall. Probably original painting (?), no older phases are visible.
Sampled by / Date	Kathrin Schmidt, 17 July 2011
Methods of analyses	OM, SEM-EDS, STT
On-site sample description	Plaster → ground → dark blue paint layer The surface of the painting is matt.
Purpose of sample	Characterisation of layers. Identification of binding media. Identification of pigments. Determination of the painting technique.



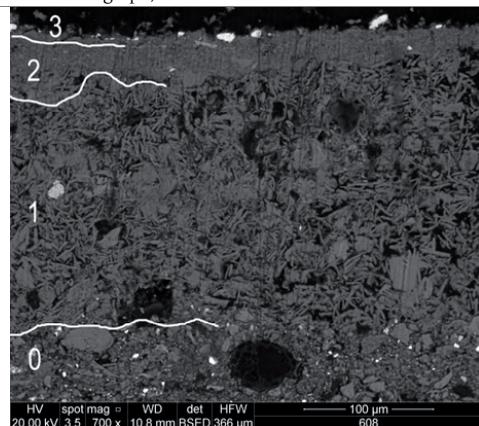
Photomicrograph, cross section



Photomicrograph, cross section - detail



Photomicrograph, cross section - detail of top layers



Backscatter SEM micrograph, cross section

Layer	Description and composition of layer	SEM-EDS-elemental analysis
3-	Yellow-greenish layer containing indigo and orpiment. Binding media seems not to be based on protein (negative staining for proteins); the nature of the binder is under the investigation.	A: As,S
2-	Blue layer applied in two layers, contains indigo and gypsum. Binding media seems not to be based on protein (negative staining for proteins); the nature of the binder is under the investigation.	A: Ca,S
1-	White ground layer containing gypsum of higher porosity, particles are mostly elongated. The gypsum contains only some impurities in the form of silicates. Binding media is protein, highly probably animal glue, mixed with starch.	A: Ca,S,(Si,Al,Mg)
0-	Earthen plaster layer of darker brown colour, medium coarse, grains up to 100 µm; contains various rock grains and grains of calcium carbonate. The plaster contains also pigment grains (marked with arrows) - grains of vermilion, azurite and orpiment that very probably originate from the older painting. By the application of the secondary plaster the surface of the original water-soluble paint-layers (probably bound with animal glue) was wetted and partly destroyed and the pigment particles were partially transported to the newly applied plaster.	A: Si,Ca,Al, Mg,K,(Fe)

The painting is very probably not the original one.

		Protein	Starch
604 G o		+	+
604 PL o		+	-
	605 G s	+	-
	605 PL s	+	-
606 G o		+	+
606 PL o		+	-
	607 G s?	+	-
	607 PL s?	+	-
	608 G s	+	+
	608 PL s	- (?)	-
609 G o		+	+
609 PL o		+	-
	609 G s	+	-
	609 PL s	+	-

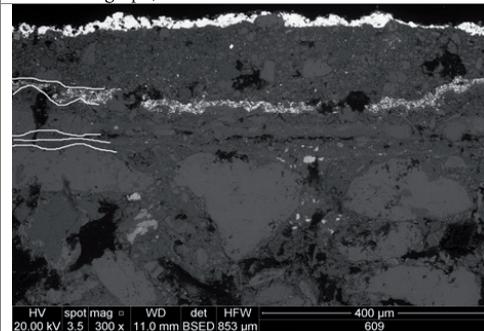
Sample Nr	609 (04 D)
Temple / Location	Dangkhar monastery, Dukhang, North wall
Location / Description	"Green Tara" on the left side of the wall. Probably overpainting with the original painting (?) underneath.
Sampled by / Date	Kathrin Schmidt, 18 July 2011
Methods of analyses	OM, SEM-EDS, ST, S _T
On-site sample description	Plaster → ground → underlayer (?) → red paint layer The surface of the painting is matt.
Purpose of sample	The presence of overpainting? Characterisation of layers. Identification of binding media. Identification of pigments. Determination of the painting technique.



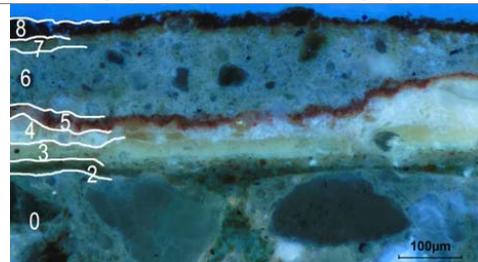
Photomicrograph, cross section



Photomicrograph, cross section - detail of top layers

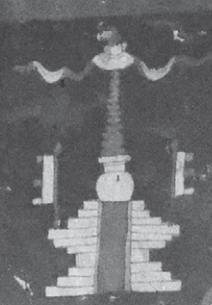


Backscatter SEM micrograph, cross section



Photomicrograph under ultraviolet light - detail of top layers

Layer Nr	Description and composition of layer	SEM-EDS-elemental analysis
8-	Red layer containing vermilion; binding media is protein, highly probably animal glue.	A: Hg,S
7-	Orange layer – homogeneous, contains very fine ochre and gypsum; binding media is protein, highly probably animal glue.	A: Si, Al,Ca,Mg,K,Fe
6-	Earthen plaster layer of light brown colour, fine grained, contains various rock grains, grains of calcium carbonate and addition of gypsum.	A: Si,Ca,Al,S,Mg,K,(Fe)
5-	Red layer containing vermilion and gypsum. Binding media is protein, highly probably animal glue.	A: S,Hg,Ca
4-	White ground based on gypsum. Binding media is protein, highly probably animal glue, probably mixed with small amount of starch.	A: Ca,S
3-	Thin secondary earthen plaster of light brown colour, fine grained.	
2-	Thin green layer based on indigo and orpiment; binding media is protein, highly probably animal glue.	A: As,S
1-	Thin white ground layer based on gypsum (not visible in the microphoto). Binding media is protein, highly probably animal glue, mixed with starch.	A: Ca,S,Si,(Al)
0-	Earthen plaster layer of grey colour, coarse, grains up to 1.5 mm; contains various rock grains, grains of calcium carbonate and small amount of gypsum.	A: Si,Ca,Al,(Mg,K,S),(Fe)





10

THE TEMPLE OF LALUNG



332 Site map of the temple area. TU Graz 2013.



333 View of the temple area from south. CA 2011.

10 THE TEMPLE OF LALUNG

Holger Neuwirth

THE SERKHANG AND THE VAIROCANA CHAPEL

Not far away from Dangkhar lies the village of Lalung, where two of the most ancient monuments of the region – alongside to the monasteries of Tabo and Nako – are preserved: the Serkhang and the four-fold Vairocana.

The dating of the Serkhang varies from the 11th to the 12th centuries, which on one hand is based on stylistic criteria; on the other hand the translation of an inscription inside the temple may give a clue. However, although it establishes a reference to king Yes es od, this interpretation cannot be taken as a hint.¹

Notwithstanding the above, the Serkhang in Lalung ranks among the earliest buildings from “*the time of the religious and artistic activities inspired by Rin-chen bzang-po*”.²

Lying at an altitude of 3680 metres, Lalung is the main village of the Lingti valley – a side valley that leads into the Spiti valley north of Dangkhar and is accessible by a motor road. In addition a new road connects Dangkhar directly with Lalung via a mountain road. The temple complex of Lalung lies above the village structure in the west on the crest of a hill.

1 See TROPPER 2008: 1, 8-13. “The inscription (...) is located in the main chapel of the gSer khan temple in Lalung (Spiti, Himachal Pradesh) where it takes up a space of ca. 60 x 22 cm (height/wide) immediately to the right of the entrance.”

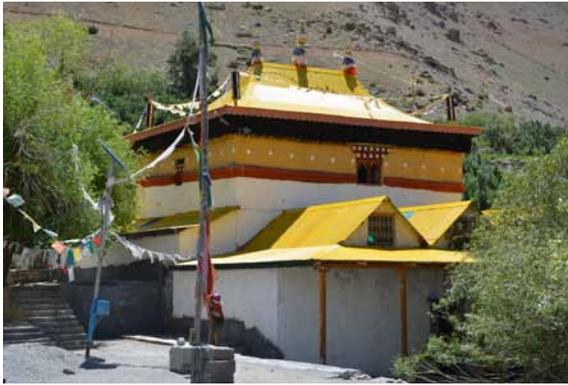
2 SNELGROVE and SKORUPSKI 1980: 41.



334 The village of Lalung. CA 2010.



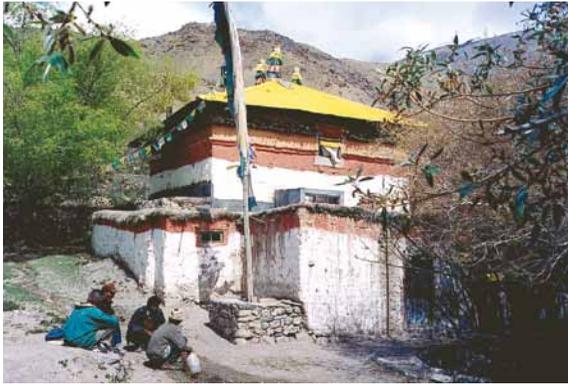
335 Entrance to the area on the southern side of the temple. CA 2011.



336 North-western view with the veranda in front of the temple. CA 2011.



337 North-eastern view of the temple. CA 2011.



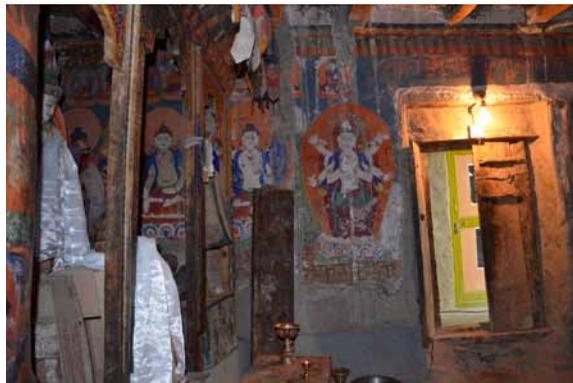
338 North-western view before the structural changes. Pecnik 2002.



339 Inscription on the western wall of the Main Serkhang. HN 2002.



340 Interior of the New Temple in front of the Serkhang. CA 2010.



341 Southern side of the New Temple in front of the Serkhang. CA 2010.

Today only the temple area of the building complex of the Serkhang (Tib. *gSer-khang*) exists with the main temple room called Main-Serkhang, a circumambulatory, the so-called New Temple (*Dungyur*), a store room and common space and a veranda, which has been built recently at the eastern side. A picture from 1996 shows the originally flat-roofed building, which in the meantime has been covered with a corrugated iron tent roof.³ The temple complex further contains the so-called Vairocana chapel, residential buildings of the monks, some ruined buildings and a new residence which was recently built at the northern side of the Serkhang.

A rough sketch of the complex from 1924 shows the Serkhang with its circumambulatory that leads around the store-room and the New Temple, as well as only one veranda in front of the entrance instead of the existing common room.⁴

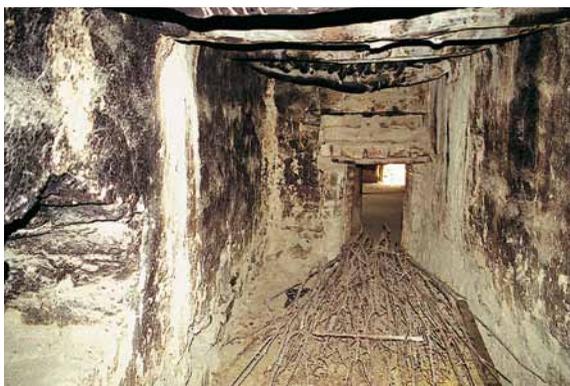
In the context of a research project funded by the Austrian Science Fund (FWF) and the documentation of the monastic complex of Tabo in 2002 the opportunity arose to make a first photographic documentation and a manual building survey of Lalung. As the temple of Lalung belongs to the administrative district of the monastery of Dangkhar the documentation could be supplemented in 2011 with a 3D laser scan of the interior carried out by a team of geologists from Graz University of Technology. The results of this work are hereby placed at the disposal of other disciplines.

The ground plan of the complex and the section through the temple room depict the building state in 2002.

Between 2008 and 2010 intensive renovations were carried out. The common room, which was built after 1924, was narrowed and a full-length veranda was constructed at the western side. On the upper floor steel beams were pulled into the roof construction and connected with a suspension of the middle beam of the beam ceiling in the temple room.

³ See LUCZANITS 2004: 93.

⁴ See SHUTTLEWORTH 1929: 1.



342 Storeroom next to the Serkhang. HN 2002.



343 Detail of the new roof construction. HN2011.



344 Wall paintings at the northern area of the ambulatory. HN 2002.



345 Another detail of the wall paintings at the northern area of the ambulatory. HN 2002

The circumambulatory around the New Temple was partly demolished, so that it can only be accessed from outside at the northern side. The original state of the circumambulatory is illustrated in a description by H. Shuttleworth from 1924:

*“There is an interior circumambulatory passage, about 3 feet wide, within the north, east and south walls, and so passing behind the small temple, the main Gser-khan hall and the small store room adjacent to the Gser-khan on the south and under the same roof. The entrance to this passage is by the small temple and it leads out into the veranda in front of the store room, as see the plan. The north part of the passage contains old frescoes all very much worn. With a lighted candle I was able to make out ten faint life-sized Buddha figures in dark tints of red, yellow and blue. Most of the detail had gone.”*⁵

Today only scanty remains of the painting of the 10 Buddhas are left.

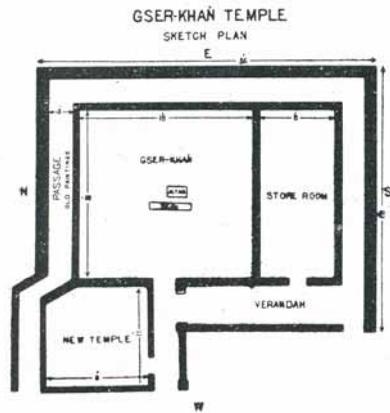
5 SHUTTLEWORTH 1929: 2.



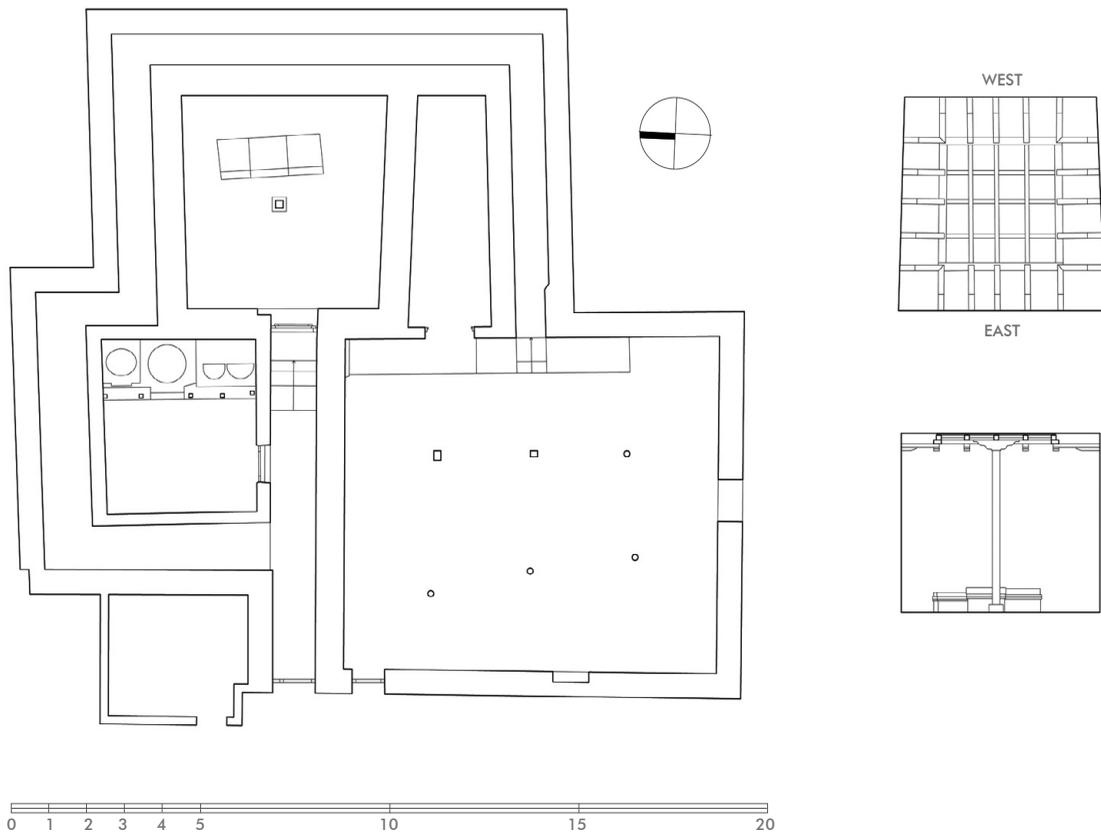
346 New entrance to the ambulatory on the northern side. CA 2011.



347 Northern area of the ambulatory. HN 2010.



348 Sketch of the temple. Shuttleworth 1929: 2.



349 Ground plan of the temple complex with the section and the ceiling plan of the Main Serkhang. TU Graz 2002.

The Main-Serkhang is orientated towards east-west with the entrance lying at the western side. Based on the documentation from 2002 a complete and scaled overview of the panelled ceiling could be acquired based on the architectural plans and detailed pictures of the ceiling. Today's existing middle column, which was later added to the once unsupported room of the Main-Serkhang to strengthen it and is not part of the original conception. Our illustration of the ceiling complements Shuttleworth's description:

*"The ceiling is composed of planks resting on cross beams which run both ways. The intersection of this cross beams divides the wood ceiling into 36 square panels, on which are painted circular and rectangular geometrical designs. All the woodwork is of blue pine (kail, i.e. PinusExcels), which is not indigenous to Spyi-ti, but imported, probably from Kunawar."*⁶

6 SHUTTLEWORTH 1929: 2.



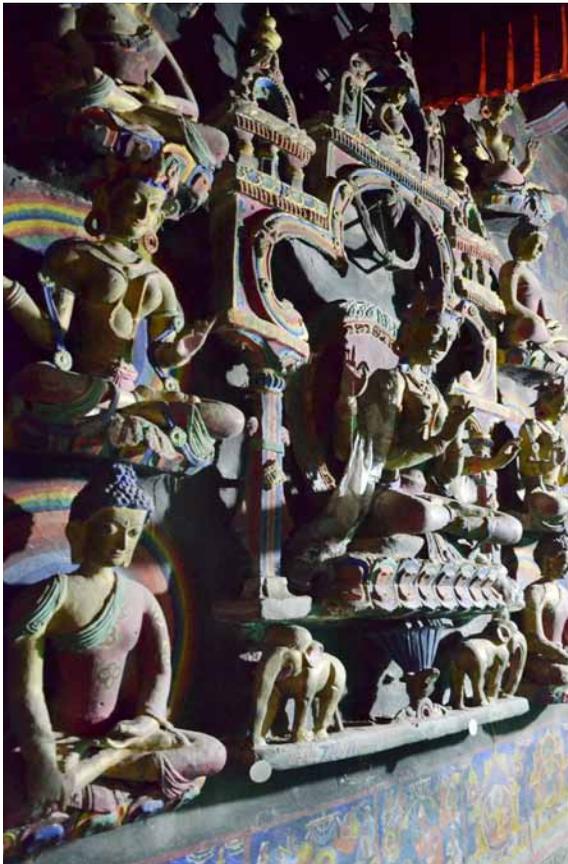
350 Montage of the ceiling in the Main Serkhang. TU Graz 2003. The room itself is quite narrow and without natural lighting. Accordingly, the photographic documentation of the interior met difficult conditions. On the basis of a manual building plan a digital map of the interior was drawn on the spot. Starting from the map of the wooden ceiling and the detailed photographs the single consoles, beams and single fields were added and rectified in conformity with the original copy of the map. The final result allows an impression of the entire ceiling in its original condition.



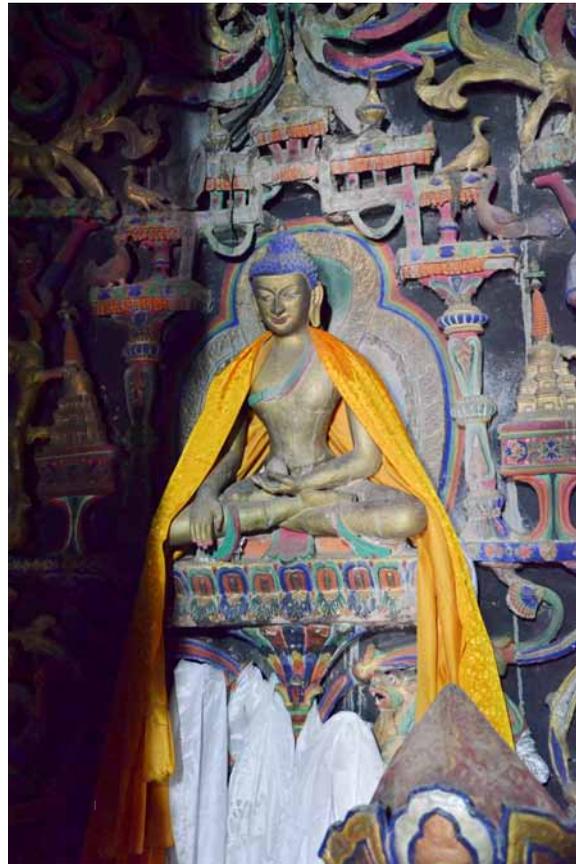
351 Altar in front of the eastern wall. CA 2011.



352 Guardian deity at the corner of the southern wall. CA 2011.



353 Sculptural design at the southern wall. CA 2011.



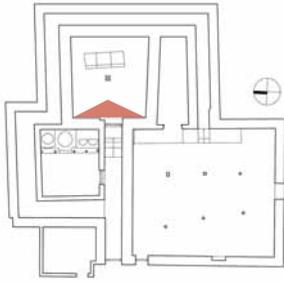
354 Central sculptures of Śākyamuni at the eastern wall. CA 2011.

The interior decoration of the Main-Serkhang is extraordinary with original, complex groups of figures, which are placed at the southern, eastern and northern wall and completed by sculptures of the guarding deities at the entrance wall (western wall). The wall paintings were renewed after Shuttleworth's visit, it is however plausible that the original conception is still to be seen nowadays. Detailed descriptions of the iconographical program are found in Shuttleworth (1929), Khosla (1979) and Luczanits (2004).⁷ With the aid of a laser scan from 2012 and some detailed pictures a scaled manual processing of the four inner walls was able to be acquired and in that way an overall context was established.

⁷ See SHUTTLEWORTH 1929: 1-7 / KHOSLA 1979: 48-53 / LUZANITS 2004: 89-106.



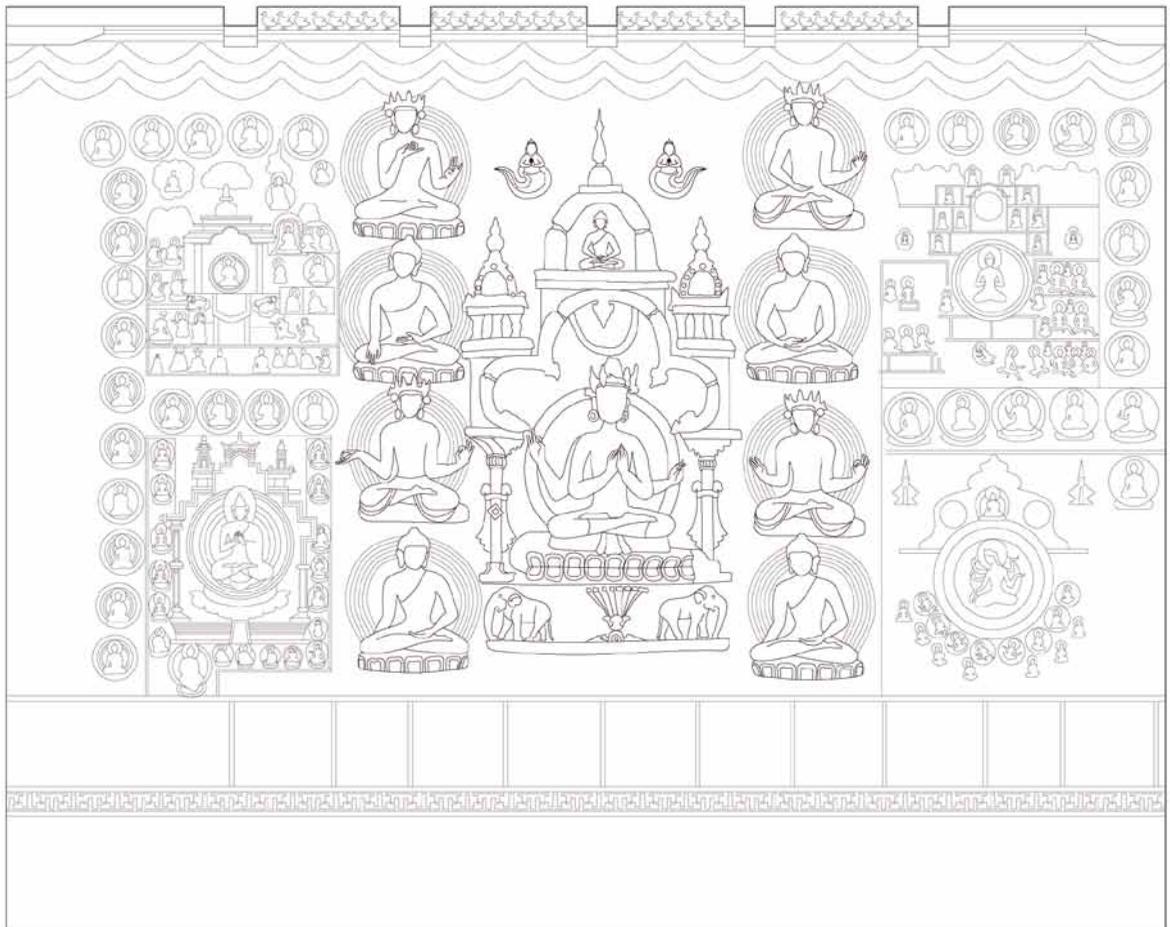
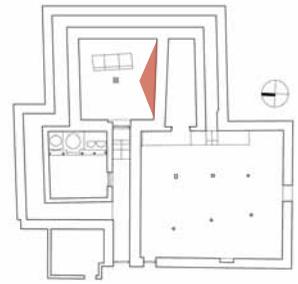
355 Digital 3D measurement of the southern wall inside the Main Serkhang. K&S 2011.



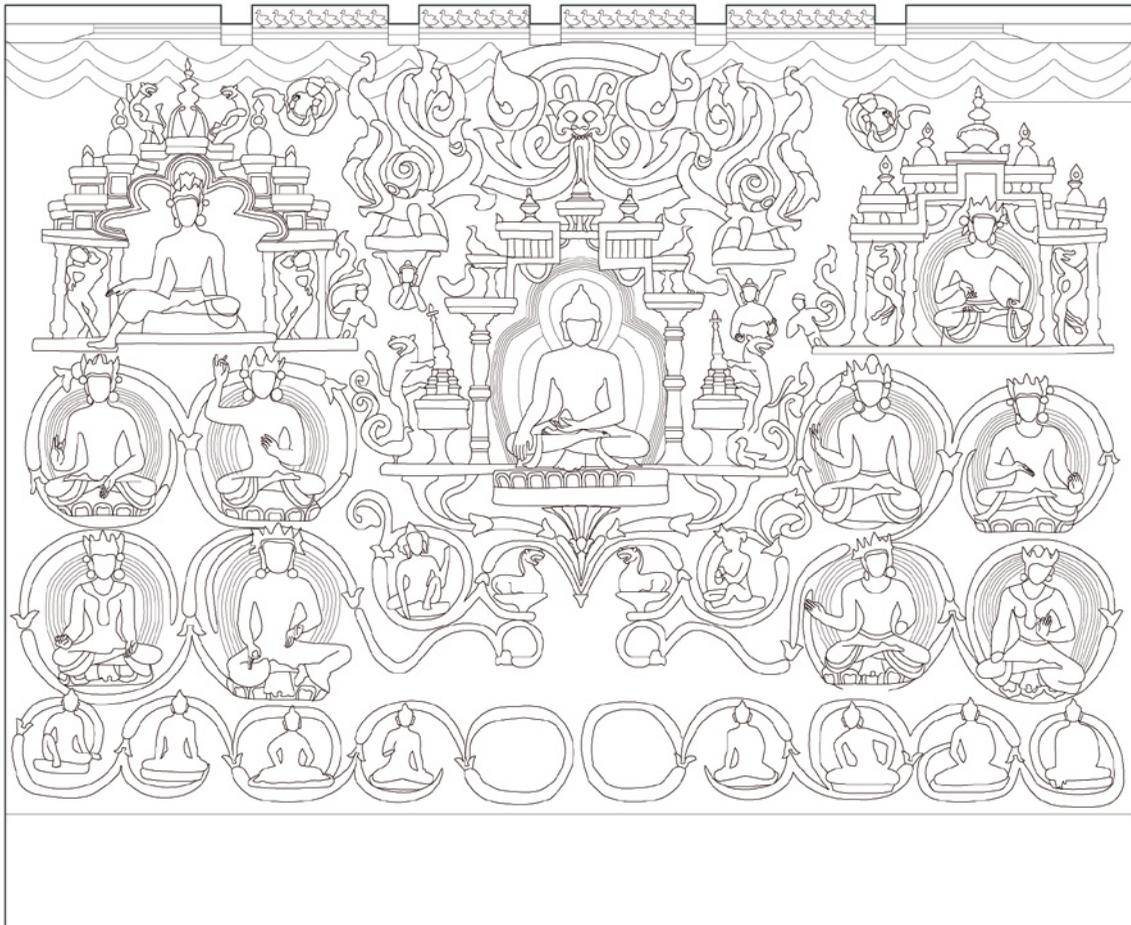
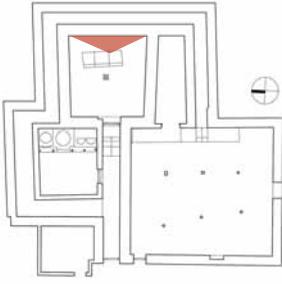
■ Inscription



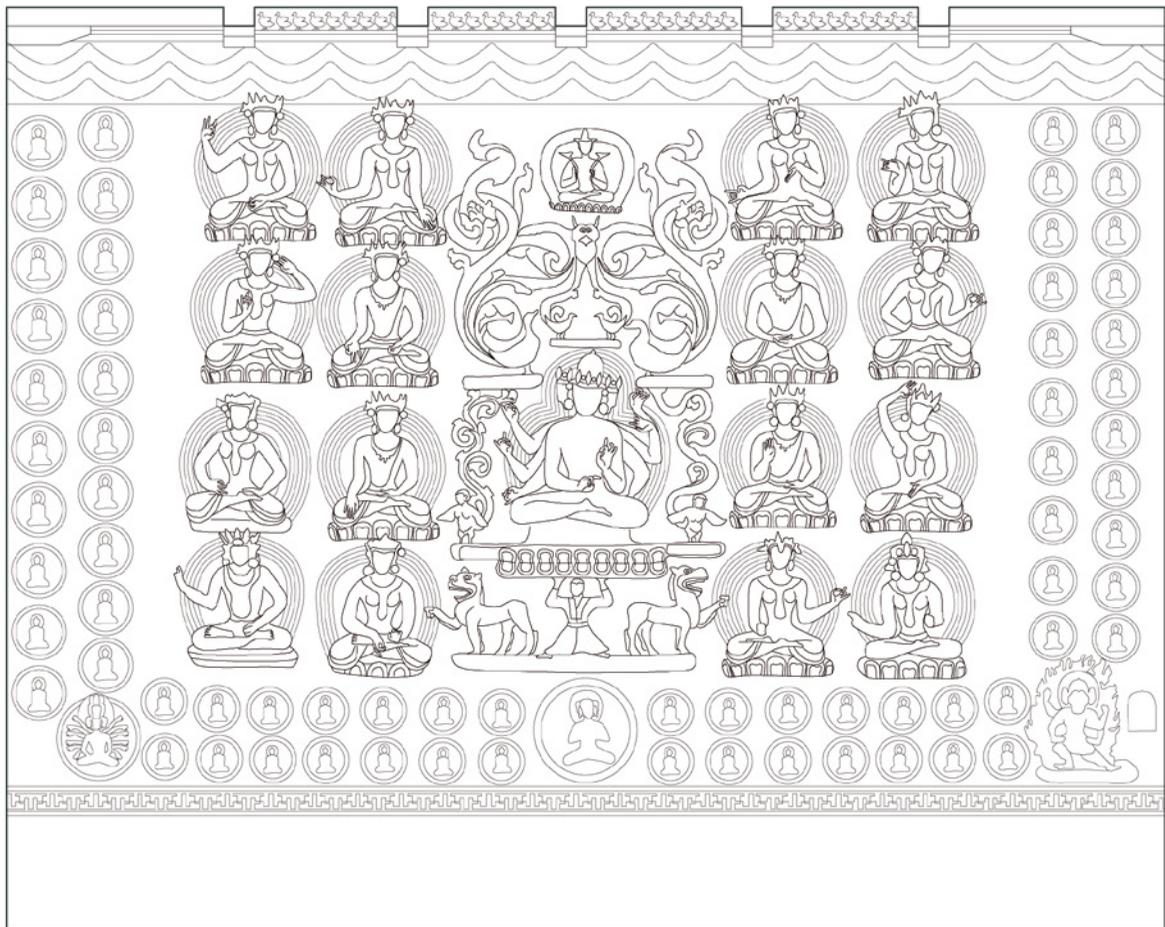
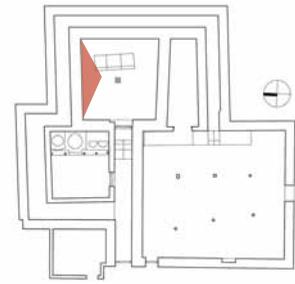
356 Western inside wall of the Main Serkhang. TU Graz 2013.



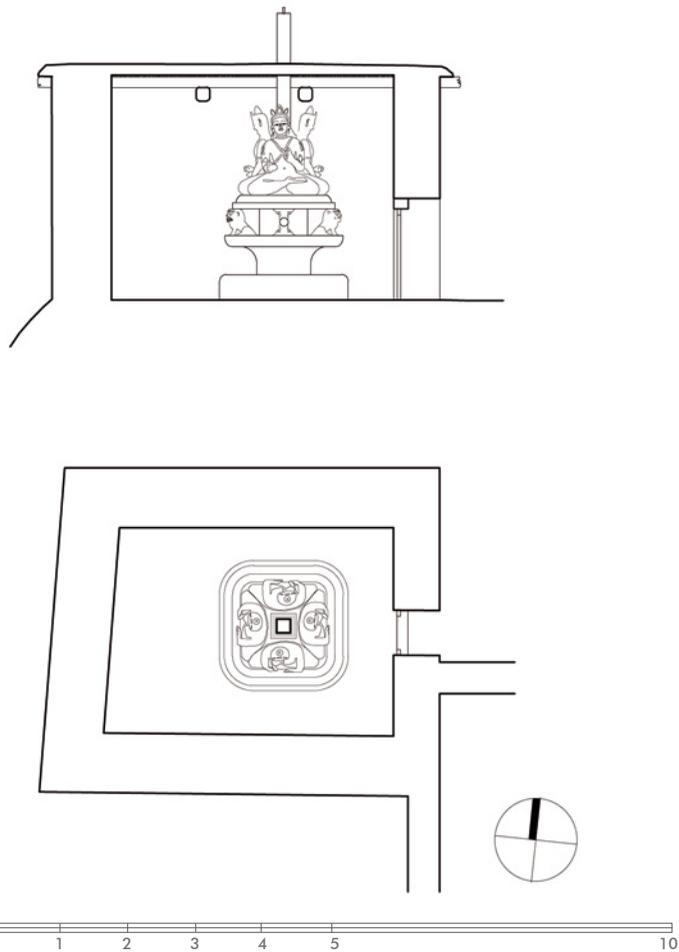
357 Southern inside wall of the Main Serkhang, TU Graz 2013.



358 Eastern inside wall of the Main Serkhang. TU Graz 2013.



359 Northern inside wall of the Main Serkhang, TU Graz 2013.



360 Ground plan and section of the chapel. TU Graz 2011.



361 Entrance at the eastern side of the chapel. CA 2011.



362 The middle column of the sculpture above the roof. HN 2002.

Likewise, in 2002 a drawing of the Vairocana chapel (Tib. *Lha-khang-karpo*) was prepared. Today the building is only a protective cover for the sculpture of the four-fold Vairocana and does not offer any clues concerning the original temple complex. This is vividly exemplified by the middle column of the sculpture, which today towers approximately one meter above the existing roof construction.

The changing climate, increasing tourism, superficial renovation measures and social changes start to show their effects. Extreme working conditions – such as time pressure, coldness, transport routes and missing resources – pose a great challenge. Nevertheless, a detailed documentation allows us to preserve an authentic picture of this cultural heritage, which will also be benefit for future generations.



363 The sculpture of the four-fold Vairocana inside the chapel. CA 2011.



364 Front view of the sculpture. CA 2011.

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11 APPENDICES

11

APPENDICES

Lobsang Nyima Laurent and Carmen Auer

THE MULTILINGUAL GLOSSARY

This glossary (English-German-French-Tibetan) is a work in progress meant to provide a lexical platform for the people directly committed to the restoration of Dangkhār monastery. It covers a variety of fields such as architecture, anthropology, restoration work, and art. Its main purpose is to provide the translation or the definition of specialized Tibetan terms in vernacular languages. In order to conform to academic and scientific publications, it also includes the simplified Wylie transliteration of these terms; any other transliteration being unnecessary.

English	German	French	Tibetan	Tibetan transliteration
alley, passage	Gässchen, Gasse	ruelle, passage	སྲང་གཞོན་	srang gdod
altar	Altar	autel	མཚོན་ཤོམ་	mchod shom
ambulatory	Umgang	déambulatoire	སྐོར་ལམ་ སྐོར་ཁང་	skor lam skor khang
archaeologist	Archäologe	archéologue	གནའ་དངོས་ལུལ་རྒྱུ་རྒྱུ་དཔྱད་རིག་པ་	gna' dngos shul rdzas dpyad rig pa
archaeology	Archäologie	archéologie	གནའ་དངོས་ལུལ་རྒྱུ་རྒྱུ་དཔྱད་རིག་	gna' dngos shul rdzas dpyad rig
architect	Architekt	architecte	ཁང་བཟོ་འཆར་འགོད་པ་ བཟོ་བཞོན་གཤིང་མཁན་	khang bzo 'char 'god pa bzo bkod gding mkhan
architecture	Architektur	architecture	ཁང་བཟོ་རིག་པ་	khang bzo rig pa
assembly hall	Versammlungshalle	salle de réunion	འདུ་ཁང་ ཚོགས་ཁང་	'du khang tshogs khang
banner (pole)	Banner, Fahne (Stange)	bannière (mât)	དར་ལྗོག	dar lcog
basement	Erdgeschoss	rez-de-chaussée	འོག་ཁང་	'og khang
bathroom	Badezimmer	salle de bain	ལྷུས་ཁང་	khrus khang
beam	Balken	poutre	གདུང་མ་	gdung ma
beam (of a pillar)	Hauptbalken	poutre (d'un pilier)	ཀ་གཟུ་གདུང་	ka gzu gdung
brick	Ziegel	brique	ས་སྐྱག	sa sbag
build (e.g. a wall)	bauen	construire (ex. un mur)	རྒྱུག་པ་ ལྷུག་པ་	rtsig pa rgyag pa
build, erect	errichten	construire, ériger	བཞུགས་	bzhengs
cairn 2. 3. votive cairn adorned with juniper branches and animal horns	Cairn, Steinhäufen 2. 3. (Votiv) Steinhäufen mit einer Bekrönung aus Wacholderästen und Tierhörnern	cairn 2. 3. cairn votif décoré de branches de genévrier et de cornes de caprinés	ལ་རྩམ་ ཇོ་ཡོར་ ལྷ་ཇོ་	la rdzas tho yor lha tho

English	German	French	Tibetan	Tibetan transliteration
canalization	Kanalisation	canalisation	ལྷ་ལམ་གསར་བཅོས་	chu lam gsar bcos
capital (archit.)	Kapitell (Archit.)	chapiteau (archit.)	ཀ་མགོ་ ཀ་ཅེ་ ཀ་གཟུ་	ka mgo ka rtse ka gzu
carpenter	Zimmermann, Tischler	charpentier	ཤིང་བཟོ་	shing bzo
castle	Burg, Schloss	château	མཁར་རྫོང་	mkhar rdzong
cave	Höhle	grotte, caverne, habitat troglodyte	ཕུག་པ་ བྲག་ཕུག	phug pa brag phug
ceiling	Zimmerdecke	plafond	ལུས་ཁེབས་	lcam khebs
cell (monastic)	Zelle	cellule (monacale)	གྲ་ཤག་ སྤོང་ཁང་	grwa shag spong khang
cella, sanctum	Heiligtum, Sanktuarium	cella, sanctuaire	དྷི་གཅོང་ཁང་ ཕུག་མ་	dri gtsang khang sbug ma
cement	Zement	ciment	ཨར་འདམ་	ar 'dam
chapel	Kapelle	chapelle	ལྷ་ཁང་	lha khang
circumambulation	Herumgehen	circumambulation	སྐོར་བ་	skor ba
clay	Lehm, Ton	argile	འཛིན་པ་	'jim pa
compound (sacred)	heiliger Bezirk	aire sacrée, sanctuaire	ཚོས་འཁོར་	chos 'khor
console	Konsole	console	ཤིང་ཁྲིའི་ཁ་བདེ་	shing khri 'i kha bad
consolidate	(ver)festigen	consolider	མཁྲེགས་པོ་བཟོ་བ་	mkhregs po bzo ba
corridor	Gang, Korridor	corridor	བར་ཁྲུམས་	bar khyams
corridor (portico)	Säulengang, Portikus	portique, colonnade	ཀ་ཕེབས་	ka phibs
courtyard	Hof, Innenhof	cour	སྤོང་ར་ ཁྲུམས་ར་	sgo ra khyams ra
courtyard (paved)	gepflasterter Hof	cour pavée	རྫོག་ཅལ་	rdo gcal
demolish	abreißen, einreißen, demolieren	démolir	བཤེག་པ་ གཏོར་བ་	bshig pa gtor ba
door	Tür	porte	སྤོ་	sgo
earth, soil	Erde	terre	ས་	sa
electrical wire	elektrische Leitung	câble, fil électrique	ལྷོག་གི་ཏར་	glog gi tar
electricity	Elektrizität	électricité	ལྷོག	glog
entry hall, vestibule, pronaos	Vorhalle	halle d'entrée, vestibule, pronaos	སྤོང་ཁང་	sgo khang
estate	Anwesen, Grundbesitz	domaine, tenure	ཁང་ཞིང་ གཞིས་ཀ་	khang zhing gzhis ka
floor	Fussboden	sol	ཞ་ལ་	zha la
floor, storey	Stockwerk, Geschoss	étage	ཐོག་རྩེག	thog rtseg
floor (intermediary)	Zwischengeschoss	étage (intermédiaire)	བར་ཁང་	bar khang
floor (last)	oberstes Geschoss	étage (dernier)	སྤོང་ཁང་	steng khang

English	German	French	Tibetan	Tibetan transliteration
foreman	Vorarbeiter	contremaître	ལས་དཔོན་	las dpon
fort	Festung	fort	རྫོང་ མཁར་	rdzong mkhar
fortress	Festung, Burg	forteresse	བཅོན་རྫོང་ བཅོན་ས་	btsan rdzong btsan sa
found, construct	gründen	fonder, construire	བཞེངས་	bzhengs
foundation (e.g. building)	Fundament	fondation	རྩའ་གཞི་	rmang gzhi
foundation stone	Grundstein	pierre de fondation	རྩའ་རྫོང་	rmang rdo
fumigation (purification ritual)	Räuchern (Reinigungsritual)	fumigation (rituel de purification)	བསངས་ བསང་བདུག	bsangs bsang bdug
fumigation (burner, altar, chimney)	Räuchern (Feuerstelle, Altar, Räuchergefäß)	fumigation (autel, encensoir, cheminée)	བསང་ཁང་ བསང་ཁུང་	bsang khang bsang khung bsang thab
			བསང་ཐབ་	
garland (archit.) frieze of small painted or carved circles	Girlande (Archit.) Ornamentband aus gemalten oder geschnitzten Kreisen	guirlande (archit.) frise de petits cercles dessinés ou sculptés	ཐྲེང་བ་	phreng ba
gate (main)	Tor (Haupttor)	porte	རྒྱལ་སྐོ་	rgyal sgo
geologist	Geologe	géologue	ས་གཞིས་དབྱུང་རིག་མཁས་པ་	sa gshis dpyad rig mkhas pa
geology	Geologie	géologie	ས་གཞིས་རིག་པ་	sa gshis rig pa
handicraft	Handwerk	artisanat	ལག་ཤེས་བཟོ་རིག	lag shes bzo rig
hearth, fireplace, stove	Feuerstelle, Herd	foyer	ཐབ་ཀ་	thab ka
heritage	Erbe	héritage	ནོར་སྐལ་	nor skal
hermitage 2. recluse's cave 3. solitary place	Klausen 2. Einsiedlerhöhle 3. Einsiedelei	ermitage 2. grotte d'ermitte 3. lieu de retraite	མཚམས་ཁང་ རི་རྫོང་ དཔེན་པ་	mtshams khang ri khrod dpen pa
historian	Historiker	historien	ལོ་རྒྱུས་འབྲི་མཁན་ རྒྱལ་རབས་ལ་མཁས་པ་	lo rgyus 'bris mkhan rgyal rabs la mkhas pa
history 2. chronicles 3. historical events	Geschichte 2. Chroniken 3. Historische Ereignisse	histoire 2. chroniques 3. histoire événementielle	ལོ་རྒྱུས་ རྒྱལ་རབས་ ལྷུང་རབས་	lo rgyus rgyal rabs byug rabs
house	Haus	maison	ཁང་པ་	khang pa
household	Haushalt	maisonnée	ཁྱིམ་	khyim
humidity	Feuchtigkeit	humidité	བཞུབ་ཚན་	bzha' tshan
infiltration	Eindringen, Einsickern	infiltration	སེམ་འཛུལ་	sim 'dzul
inscription, drawing, engraving	Bildinschrift	inscription, glyphe	བརྟན་རིས་	brkos ris
inscription, epigraph, engraving	Gravur, Wandinschrift	inscription, épigraphe	རྟོན་ཡིག གྲུང་ཡིག	rkos yig gyang yig
inscription (on stone)	Steininschrift	inscription (sur pierre)	རྫོ་བརྟན་ཡིག་	rdo brkos yi ge
joist	Querbalcken, Deckenbalcken	solive, lambourde	ལུས་ཤིང་	lcam shing

English	German	French	Tibetan	Tibetan transliteration
kitchen	Küche	cuisine	ཐབ་ཚང་ རུང་ཁང་	thab tshang rung khang
ladder	Leiter	échelle	སྐྱམ་འཛིག་	skas 'dzeg
landslide	Erdrutsch	glissement de terrain	ས་རུད་	sa rud
layer (wall etc.)	Schicht (Wand usw.)	couche (mur etc.)	རྩིག་མཁན་	rtsig mkhan
legacy	Erbe, Vermächtnis	patrimoine, héritage	ཐོབ་སྐྱལ་	thob skal
mason	Steinmetz, Maurer	maçon	རྩིག་བཟོ་མཁན་	rtsig bzo mkhan
measure	messen, abmessen	mesurer	ཚད་ འཇམ་བ་	tshe 'jal ba
monastery	Kloster	monastère	དགོན་པ་	dgon pa
mountain	Berg	montagne	རི་	ri
mud	Schlamm	boue	འདམ་བག་ ས་འདམ་	'dam bag sa 'dam
museum	Museum	musée	འགྲེམས་སྟོན་ཁང་	'gremis ston khang
necropolis	Nekropole	nécropole	དུར་ཁམ་	dur kha
oriel window	Erkerfenster	oriel	རབ་གསལ་	rab gsal
palace	Palast	palais	ཕོ་བླང་ གཞལ་ཡས་ཁང་	pho brang gzhal yas khang
painting, drawing, wall painting, murals	Malerei, Wandmalerei	peinture, dessin, peinture murale, fresque	ལྗེ་བས་རིས་ རི་མོ་	ldebs ris ri mo
pass	Gebirgspass	col	ལ་	la
plan (<i>traditional representation of Tibetan architectural complex</i>)	Plan (<i>traditionelle Darstellung von Gebäudekomplexen tibetischer Architektur</i>)	plan (<i>représentation traditionnelle d'un ensemble architectural tibétain</i>)	བཀོད་པ་	bkod pa
pillar, column	Pfeiler, Säule, Stütze	pilier, colonne	ཀ་བ་	ka ba
pillar (brace for, wooden support) 2. <i>sm</i> 3. wooden pole used to prop up / support / brace a pillar	Holzstütze 2. ebenso 3. Unterstützung aus Holz	pilier (étau, support en bois) 2. <i>idem</i> 3. pièce de bois servant au soutien /étagage d'un pilier	ཀ་སྐྱོར་ ཀ་རྟེན་ ཀ་སྐྱོམ་	ka skyor ka rten ka sgrom
pillar (brocade)	Stoffverkleidung	pilier (brocart)	ཀ་རྒྱན་	ka rgyan
pillar (colonnade, bunch of pillars)	Säulenreihe Säulengruppe	pilier (colonnade, groupe de piliers)	ཀ་སྐྱུངས་	ka spungs
pillar (base, plinth, pedestal)	Säulenbasis	pilier (base, assise, piédestal)	ཀ་རྟེགས་	ka stegs
			ཀ་གདན་	ka gdan
pillar (fluting)	Kanneluren	pilier (cannelure)	ཀ་སུལ་	ka sul
pillar (neck)	Säulenhals	pilier (col, gorgeron)	ཀ་སྐྱོ་	ka ske
pillar (octagonal)	oktagonale Säule	pilier (octogonal)	ཀ་བ་རྩུར་བརྒྱུད་པ་	ka ba zur brgyad pa
pillar (shaft of)	Schaft	pilier (fût)	ཀ་སྐྱོད་	ka sked
pillar (<i>piece of wood used below the main beam on top of a pillar</i>)	Holzstück zwischen Hauptbalken und Säule	pilier (<i>pièce de bois calée entre le sommet d'un pilier et la poutre qu'il supporte</i>)	ཀ་གཞུ་	ka gzhu

English	German	French	Tibetan	Tibetan transliteration
pipe	Rohr, Leitung	tuyau, tube	སྤུབས་མདོང་	sbubs mdong
plastering (on wall, stupa) 2. finger strips	Putz, Verputz 2. Fingerstreifenmuster	crépi, enduit 2. stries faites aux doigts	ཞ་ལ་ མཚུབ་ཞལ་ (spell.?)	zha la mdzub zhal (spell.?)
pole (of a tent)	Zeltstange	poteau (de tente)	ཀ་ར་	ka ra
portico (loggia)	Vorbereich	portique, loggia	རབ་གསལ་	rab gsal
prayer hall	Gebetshalle	halle de prière, salle de rassemblement	འདུའང་ ཚོགས་ཁང་	ཧྲུཀམག tshogs khang
prayer wheel	Gebetsmühle	moulin à prières	མ་ནི་འཁོར་ལོ་ མ་ནི་ཚོས་འཁོར་	ma ni ཧྲེམ་ལོ་ ma ni chos ཧྲེམ་
rampart, wall	Schutzwall, Befestigungswall	mur d'enceinte	ལྷགས་རི་	lcags ri
register, book, catalogue	Katalog	registre, catalogue	དཀར་ཆག	dkar chag
renovate	renovieren	réparer	བཟོ་བཅོས་རྒྱག་པ་	bzo bcos rgyag pa
report (working)	Arbeitsbericht	rapport (de travail)	ལས་བསྐྱེམས་	las bsdoms
residence 2. sleeping room	Wohnsitz Schlafzimmer	résidence, appartement 2. chambre à coucher	གཟིམས་འགག གཟིམས་རྩུང་	gzims shag gzims chung
restoration	Restaurierung	restauration	ཉམས་གསོ་ བསྐྱུར་གསོ་	nyams gso bskyar gso
restore	restaurieren	restaurer	ཉམས་གསོ་ ཟ෍ད་པ་	nyam gso byed pa
restorer	Restaurierer	restaurateur	བསྐྱུར་གསོ་ཟ෍ད་པོ་	bskyar gso byed po
roof	Dach	toit	ཁང་ཐོག ཐོག་ཁབས་	khang thog thog khebs
roof (Chinese type)	Pagodendach	toiture de type chinois	རྒྱ་མིངས་	rgya phings
sand	Sand	sable	ཟ෍མ་	bye ma
scree	Geröll	pierrier	ཉིགས་རྩོ་	nyigs rdo
sky-light	Oberlichte, Laterne	lucarne, lanterneau	གནས་ཁྲུང་ གནས་གཡང་	gnam khung gnam g.yang
soot, lampblack	Ruß, Rußschicht	suie	དུ་འིག	du dreg
stability	Stabilität	stabilité	བརྟན་རྒྱགས་	brtan tshugs
stabilization	Stabilisierung	stabilisation	བརྟན་པོ་བཟོ་བའི་བྱ་སྤྱོད་	brtan po bzo ba'i bya spyod
stabilize	stabilisieren	stabiliser	སྲ་བརྟན་ བཟོ་བ་	sra brtan bzo ba
stair (staircase)	Treppe, Treppenaufgang	escalier (cage d')	སྐྱས་འཛེགས་	skas 'dzegs
statue	Statue	statue	སྤུ་འཇུང་	sku ཧྲཱཱ་
stone	Stein	pierre	རྩོ་	rdo
stone pillar, stele, obelisk, erected stone	Steinpfiler, Stele, Obelisk, Menhir	pilier en pierre, stèle, obélisque, menhir	རྩོ་རིང་	rdo ring
storey	Stockwerk	étage	ཐོག་ཚེག	thog rtseg
straw, hay	Stroh	paille	སོག་མ་	sog ma
stupa	Stupa	stupa	མཚོན་རྟེན་	mchod rten
stupa (gateway)	Torstupa, Durchgangsstupa	porte stupa	རྒྱལ་སྤོང་མཚོན་རྟེན་	rgyal sgo'i mchod rten

English	German	French	Tibetan	Tibetan transliteration
team (working team)	Arbeitsgruppe, Arbeitsteam	équipe (de travail)	ལས་ཤུགས་ཚོགས་རྒྱུང་	las shugs tshogs chung
temple	Tempel	temple	ལྷ་ཁང་	lha khang
temple (main)	Haupttempel	temple (principal)	གཞུག་ལག་ཁང་	gtsug lag khang
terrace roof	Terrassendach	couverture en terrasse	ཡང་ཐོག་ ཡང་སྟེང་	yang thog yang steng
toilet	Toilette	toilette	གསང་སྟོན་	gsang spyod
tomb 2. tumulus, funerary monument, mausoleum 3. mortuary 4. grave, cemetery, charnel ground	Grabstätte 2. Tumulus, Grabdenkmal Mausoleum 3. Aufbahrungsraum 4. Grab, Friedhof	tombe 2. tumulus, monument funéraire, mausolée, 3. morgue, salle mortuaire 4. tombe, fosse, charnier	འུར་ཁང་ བང་སོ་ རོ་ཁང་ དུར་	pur khang bang so ro khang dur
tower	Turm	tour	ལྷོ་གསལ་ཁང་	lcog mkhar
victory banner (archit.)	Siegesbanner (Archit.)	bannière de victoire (archit.)	རྒྱལ་མཚན་	rgyal mtshan
village	Dorf	village	གྲོང་གསེབ་	grong gseb
wall	Wand	mur	རྩིག་པ་ ཡུང་	rtsig pa gyang
water	Wasser	eau	ཚུ་	chu
wattle and daub	Lehmflechtwerk, Pisebau, Stampfling	pisé	ཞ་ལ་	zha la
wood	Holz	bois	ཤིང་	shing
wood (birch)	Holz (Birkenholz)	bois (bouleau)	སྟག་པ་ སྟག་ཤིང་	stag pa stag shing
wood (<i>Himalayan cedar</i> , deodar)	Holz (Zedernholz)	bois (cèdre)	ཐང་ཤིང་	thang shing
wood (juniper)	Holz (Wacholderholz, Juniperus)	bois (genévrier)	ཤུག་པ་	shug pa
wood (poplar)	Holz (Pappelholz)	bois (peuplier)	སྟེར་པ་ དབྱུར་པ་	sbyar pa dbyar ba
wood (willow)	Holz (Weidenholz)	bois (saule)	ལང་མ་	lcang ma
work	Arbeit	travail	ལས་ཀ	las ka
work (report)	Arbeitsbericht	rapport de travail	ལས་བསྟོན་མཁས་	las bsdoms
worker	Arbeiter	travailleur	ལས་མི་ ལས་རྩལ་པ་	las mi las rtsol pa
working team	Arbeitsgruppe, Arbeitsteam	équipe de travail	ལས་ཤུགས་ཚོགས་རྒྱུང་	las shugs tshogs chung
whitewash, lime	Kalktünche, Kalkanstrich	chaux	ཀ་རག་ ས་དཀར་ དཀར་རྩི	ka rag sa dkar dkar rtsi
window	Fenster	fenêtre	སྐུ་ཁུང་	sge'u khung
window, (bay window), oriel	Erker, Erkerfenster, Balkon	oriel, balcon	རབ་གསལ་ སྐུ་ཁུང་འབྲུང་ཐོན་	rab gsal sge'u khung 'bur thon

DETAILED INVENTORY OF THE ICONOGRAPHICAL PROGRAMM IN THE UPPER TEMPLE

Iconographical Inventory south-eastern Wall ¹				
1		Wall-painted hanging with lion faces		གསལ་བུ་ sham bu
From left to right, top to bottom				
2		The thirty-five confession Buddhas grouped around the five family conquerors		ལུང་བཤགས་ཀྱི་སངས་རྒྱལ་མོ་ལྔ་ནི་རྒྱལ་བ་ རིགས་ལྔ་དང་མོ་མའི་འཁོར་བྱུག ltung bshags kyi sangs rgyas so lnga ni rgyal ba rigs lnga dang so so 'i 'khor drug
	a + 6	Amogasiddhi	Amogasiddhi	དོན་ཡོད་གུབ་པ་ Don yod grub pa
	b + 6	Amitābha	Amitābha	འོད་དཔག་མེད་ 'Od dpag med
	c + 6	Ratnasambhava	Ratnasambhava	རིན་ཆེན་འབྲུང་གནས་ Rin chen 'byung gnas
	d + 6	Aksobhya	Aksobhya	མི་བསྐྱོད་པ་ Mi bskyod pa
	e + 6	Vairocana	Vairocana	རྣམ་པར་ལྷུང་མཛད་ rNam par snang mdzad
3		The five family conquerors' consorts		རྒྱལ་བ་རིགས་ལྔ་ཡི་ཡུམ་ rgyal ba rigs lnga yi yum
	a	Green Tārā	Śamaya Tārā	དམ་ཚིག་སྒྲོལ་མ་ Dam tshig sgröl ma
	b	Pāṇḍaravāsīnī	Pāṇḍaravāsīnī	གོས་དཀར་མོ་ Gos dkar mo
	c	Māmaki	Māmaki	མྲ་མ་གེ། Mā ma ki
	d	Buddha Locana	Locana	སངས་རྒྱལ་སྤྲོན་མ་ Sangs rgyas spyen ma

¹ * Identity of the figure within the theme not secured, ** Identification of the iconographical figure not secured, *** Identification of the iconographical theme not secured

	e	Vajradhātviśvarī	Vajradhātviśvarī	དོན་རྗེ་དབྱིངས་ཕྱུག་མ་	rDo rje dbyangs phyug ma
4		The eight medicine Buddhas (a-d)		སྐྱེན་ཆུ་དེ་གཤེགས་བརྒྱུད་	sman bla de gshegs brgyad
	a	Sunāman *	Sunāman	མཚན་ལེགས་	mTshan legs
	b	Ratnacandra *	Ratnacandra	རིན་ཆེན་རྒྱ་བ་	Rin chen zla ba
	c	Dharmakīrtisāgaraghoṣa *	Dharmakīrtisāgaraghoṣa	ཚོས་སྐྱགས་རྒྱ་མཚོའི་དབྱངས་	Chos sgrags rgya mtsho'i dbyangs
	d	Bhaiṣajyaguru	Bhaiṣajyaguru	སངས་རྒྱས་སྐྱབ་ཆེན་	Sangs rgyas sMan bla
5		Buddha making the gesture of fearlessness (abhaya mudrā)		སྐྱབས་སྐྱོན་ཕྱག་རྒྱ་མཚན་པའི་སངས་རྒྱས་	skyabs sbyin phyag rgya mdzad pa'i Sangs rgyas
6		Padmasambhava and consorts		བད་མ་འབྲུང་གནས་དང་ཡུམ་	Pad ma 'byung gnas dang yum
	a	Padmasambhava (centre)	Padmasambhava	གུ་རུ་རིན་པོ་ཆེ་མངའ་སྐབས་གནས་	Gu ru rin po che Pad ma 'byung gnas
	b	Mandāravā (left)	Mandāravā	མན་ད་ར་བ་མེད་ཉོག་	Man da ra ba me tog
	c	Ye shes mtsho rgyal (right)		མཁའ་འཕྱོ་ཡེ་ཤེས་མཚོ་རྒྱལ་	mKha' 'gro Ye she mtsho rgyal
7		Eleven-faced Avalokiteśvara	Ekādaśamukha Avalokiteśvara	ཐུགས་རྗེ་ཆེན་པོ་བརྟུ་གཅིག་ཞལ་	Thugs rje chen po bcu gcig zhal
8		Buddha Amitābha	Amitābha	སངས་རྒྱས་འོད་དཔག་མེད་	Sangs rgyas 'Od dpag med
9		Four-armed Avalokiteśvara	Caturbhuja Avalokiteśvara	སྐྱེན་རས་གཅིགས་ཕྱག་བཞེ་བ་	sPyan ras gzigs phag bzhi pa
10		Buddha making the gesture of generosity (varada mudrā)		མཚོག་སྐྱོན་ཕྱག་རྒྱ་མཚན་པའི་སངས་རྒྱས་	mchog sbyin phyag rgya mdzad pa'i Sangs rgyas
11		Amitāyus	Amitāyus	ཚོ་དཔག་མེད་	Tshe dpag med
Lower Frieze (from left to right)					
12		The twelve deeds of Buddha Śākyamuni (a-f)		སངས་རྒྱས་མཚོག་གི་སྐྱེལ་པའི་སྐྱས་འཛིག་ རྟེན་དུ་མཚན་པ་བརྟུ་གཉིས་	sangs rgyas mchog gi sprul pa'i skus 'jig rten du mdzad pa becu gnyis
	a	Remaining in and descent from Tuṣita heavenly realm		དགབ་ལྗན་གནས་ནས་འཕོ་བ་	dga' ldan gnas nas 'pho ba
	b	Entering into Queen Māyādevī's womb		ལྷ་སམ་སུ་རྒྱགས་པ་	lhums su zhugs pa
	c	Taking birth		སྐྱ་བལྟམས་པ་	sku bltams pa
	d	Becoming skilled in worldly arts and demonstrating physical prowess		གཞོན་རྒྱའི་རོལ་ཅེད་	gzhon nu'i rol rtsed
	e	Enjoying a retinue of queens and a life of pleasures		བཞུན་མའི་འཁོར་རྒྱུས་རོལ་བ་	btsun mo'i 'khor gyis rol ba
	f	Renouncing the world		རབ་དུ་རྒྱུང་བ་	rab tu byung ba

Iconographical Inventory south-western Wall ¹				
1		Wall-painted hanging with lion faces		འཕམ་བུ་ sham bu
Left Panel				
		Meditational deities (left to right)		ཡི་དམ་ yi dam
2		Vajrabhairava and consort Vajrā Vetāli	Vajrabhairava / Vajrā Vetāli	རྫོང་མཚོ་གསལ་བྱེད་དང་རྫོང་རོ་ལངས་མ་ rDo rje 'jigs byed dang rDo rje Ro lang ma
3		Guhyasamāja and consort Śparsavajrā	Guhyasamāja / Śparsavajrā	གསང་བ་འདུམ་པ་དང་རེག་བྱ་རྫོང་མ་ gSang ba 'dus pa dang Reg bya rdo rje ma
4		Hayagrīva	Hayagrīva	རྟ་མགྲིན་ rTa mgrin
5		A pair of dGe lugs pa teachers		དགེ་ལུགས་པའི་སྐོབ་དཔོན་གཉིས་ dGe lugs pa'i slob dpon gnyis
5	a	<i>unidentified</i>		
5	b	<i>unidentified</i>		
6		Father and sons		ཡལ་སྲས་གསུམ་ yab sras gsum
6	a	Tsong kha pa (1357 – 1419) (centre)		རྗེ་རིན་པོ་ཆེ་ཙོང་ཁ་པ་བློ་བཟང་བྲགས་པ་ rJe Rin po che Tsong kha pa blo bzang grags pa
6	b	rGyal tshab rje (1364 – 1432) (left)		རྒྱལ་ཚབ་རྗེ་དར་མ་རིན་ཆེན་ rGyal tshab rje Dar ma rin chen
6	c	mKhas grub rje (1385 – 1438) (right)		mKhas grub rje dGe legs dpal bzang po
				མཁས་གྲུབ་རྗེ་དགེ་ལུགས་དཔལ་བཟང་པོ་
Central Panel				
7		Primordial Buddha	Ādibuddha Samantabhadra	ཀུན་ཏུ་བཟང་པོ་ Kun tu bzang po
8		<i>unidentified</i>		
9		Celestial nymphs		
9	a	Apsaras	apsarasah	མཚོན་པའི་ལྷ་མོ་ mchod pa'i lha mo
9	b	Apsaras	apsarasah	མཚོན་པའི་ལྷ་མོ་ mchod pa'i lha mo
10		The historical Buddha and his two main disciples		ཐུབ་པ་གནས་བཅུ་སུ་བསྐོར་བ་ Thub pa gnas bcus bskor ba
10	a	Buddha Śākyamuni (centre)	Śākyamuni	ཤཱ་ཀྱ་ཐུབ་པ་ Shākyā thub pa
10	b	Śāriputra (left)	Śāriputra	ཤཱ་རི་འི་བུ་ Shā ri'i bu
10	c	Maudgalyāyana (right)	Maudgalyāyana	མའུ་དགལ་གྱི་བུ་ Ma'u dgal gyi bu
11		The sixteen arhats or elders	sodaśa sthavirāḥ	གནས་བཅུ་དྲུག་ gnas brtan bcu drug
11	a	Gopaka *	Gopaka	མེད་བྱེད་ sBed byed
11	b	Bhadra	Bhadra	བཟང་པོ་ bZang po
11	c	Cūḍapanthaka	Cūḍapanthaka	ལམ་ཕྱོད་བསྐྱེད་ Lam phran bstan

¹ * Identity of the figure within the theme not secured, ** Identification of the iconographical figure not secured, *** Identification of the iconographical theme not secured

11	d	Bakula	Bakula	བ་ཀུ་ལ་	Ba ku la
11	e	Kanakavtsa	Kanakavtsa	གསེར་བེུ་	gSer be'u
11	f	Vanavāsin *	Vanavāsin	ནགས་ན་གནས་	Nags na gnas
11	g	Vajrīputra *	Vajrīputra	རྩོམ་མེད་	rDo rje mo'i bu
11	h	Aṅgaja	Aṅgaja	ཡན་ལག་འབྱུང་	Yan lag 'byung
11	i	Kanakabharadvāja *	Kanakabharadvāja	ལྷ་ར་ལྷ་ཚོ་གསེར་ཅན་	Bha ra dhwa dza gser can
11	j	Nāgasena *	Nāgasena	སྤྱི་ལྷོ་	Klu'i sde
11	k	Panthaka	Panthaka	ལམ་བསྟན་	Lam bstan
11	l	Piṅḍolabharadvāja	Piṅḍolabharadvāja	ལྷ་ར་ལྷ་ཚོ་བསོད་སྟོན་ལེན་	Bha ra dha dza bsod snyoms len
11	m	Ajita	Ajita	མ་མམ་པ་	Ma pham pa
11	n	Kālika *	Kālika	དུས་ལྡན་	Dus ldan
11	o	Rāhula	Rāhula	སྐྱ་གཅན་ཟིན་	sGra gcan zin
11	p	Abheda	Abheda	མི་ལྗེད་	Mi phyed
12		The two attendants			
12	a	Hwa shang (left)	Hwa shang	ལྷ་གདང་	Hwa shang
12	b	Upāsaka Dharmatrāta (right)	Upāsaka Dharmatrāta	དགེ་བསྟན་ལྷན་	dGe bsnyen Dharma
Right Panel					
		Meditational deities (left to right)		ཡི་དམ་	yi dam
13		Kālacakra and consort Viśvamāta	Kālacakra / Viśvamāta	དུས་ཀྱི་འཁོར་ལོ་དང་ལྷ་ཚོགས་ལུས་	Dus kyi 'khor lo dang sNa tshogs yum
14		Hevajra and consort Vajranairātmyā	Hevajra / Vajranairātmyā	ཤེར་རྩོམ་དང་རྩོམ་མེད་མོ་	Kye rdo rje dang rDo rje bdag med mo
15		Cakrasaṃvara and consort Vajravāhārī	Cakrasaṃvara / Vajravāhārī	འཁོར་ལོ་བདེ་མཚོག་དང་རྩོམ་མོ་	'Khor lo bde mchog dang rDo rje phag mo
16		Nāropā (1016 – 1100)	Nāropā or Nāropadā	རྣ་རོ་པ་	Nā ro pa
17		sTag tshang ras pa (1574 – 1651)		སྐྱག་ཚང་རས་པ་ཨོ་རྒྱན་དག་དབང་རྒྱ་མཚོ་	sTag tshang ras pa O rgyan Ngag dbang rgya mtsho
18		Atiśa and his two main disciples			
18	a	Atiśa (980 – 1054) (centre)	Atiśa Dipaṃkara Śrījñāna	ཇོ་བོ་ཇེ་དཔལ་ལྡན་ཨ་ཉི་ག་	Jo bo rje dPal ldan A ti sha
18	b	'Brom ston pa (1005 – 1064) (left)		འབྲོམ་སྟོན་པ་རྒྱལ་བའི་འབྲུང་གནས་	'Brom ston pa rgyal ba'i 'byung gnas
18	c	rNgog legs pa'i shes rabs (1059 – 1109) or Nag tsho the translator (1011 – 1064) (right)		རྩོག་ལོ་རྩོ་བ་ལེགས་པའི་ཤེས་རབས་སམ་ ནག་ཚོ་ལོ་རྩོ་བ་ལྷོ་ལ་ཁྲིམས་རྒྱལ་བ་	rNgog lo tsā ba legs pa'i shes rabs sam Nag tsho lo tsā ba Tshul khirims rgyal ba

Lower Frieze (left to right)					
19		The seven precious possessions of a universal monarch	sapta rājāyaratna	ཇུལ་སྲིད་རིན་ཆེན་སྣ་བདུན་	rgyal srid rin chen sna bdun
19	a	The precious general	senāpatiratna	དམག་དཔོན་རིན་པོ་ཆེ་	dmag dpon rin po che
19	b	The most precious horse	aśvaratna	རྟ་མཚོག་རིན་པོ་ཆེ་	rita mchog rin po che
19	c	The precious elephant	hastiratna	ཐུང་པོ་རིན་པོ་ཆེ་	glang po rin po che
19	d	The precious minister	pariṇāyakaratna	ཐོན་པོ་རིན་པོ་ཆེ་	blon po rin po che
19	e	The precious jewel	maṇiratna	ནོར་བུ་རིན་པོ་ཆེ་	nor bur in po che
19	f	The precious queen	raniratna or strīratna	བཅུན་མོ་རིན་པོ་ཆེ་	btsun mo rin po che
19	g	The precious wheel	cakraratna	འཁོར་ལོ་རིན་པོ་ཆེ་	'khor lo rin po che
20		The eight close sons or great bodhisattvas	aṣṭa utaputra	ཉེ་བའི་སྲས་ཆེན་བརྒྱད་	nye ba'i sras chen brgyad
20	a	Sarvanīvaraṇaviṣkambhin *	Sarvanīvaraṇaviṣkambhin	སྲིབ་པ་རྣམ་སེལ་	sGrip pa rnam sel
20	b	Avalokiteśvara	Avalokiteśvara	ཕྱུན་རས་གཟིགས་	sPyan ras gzigs
20	c	Vajrapānī	Vajrapānī	བྱག་ན་རྗེ་	Phyag na rdo rje
20	d	Mañjuśrī	Mañjuśrī	འཇམ་དཔལ་བྱངས་	'Jam dpal byangs
20	e	Ākāśagarbha *	Ākāśagarbha	ནམ་མཁའི་སྡིང་པོ་	Nam mkha'i snying po
20	f	Samantabhadra *	Samantabhadra	ཀུན་ཏུ་བཟང་པོ་	Kun tu bzang po
20	g	Maitreya *	Maitreya or Maitreynātha	བྱམས་པ་མགོན་པོ་	Byams pa mgon po
20	h	Kṣitigarbha *	Kṣitigarbha	སའི་སྡིང་པོ་	Sa'i snying po
21		The consecration-banquet scene			

Iconographical Inventory
north-western Wall¹

Iconographical Inventory north-western Wall ¹				
1		Wall-painted hanging with lion faces		གསལ་བུ་ sham bu
From left to right, top to bottom				
2		Group of seventeen Buddhas		
2		Seven universal Buddhas or seven heroic Buddhas ***		sangs rgyas rab bdun nam sangs rgyas dpa' bo dbun
2	a		རྣམ་པར་གཞིགས་	rNam par gzigs *
2	b		གཏུག་ཏྲོར་ཅན་	gTsugs tor can *
2	c		ཐམས་ཅད་སྐྱོབ་	Thabs cad skyob *
2	d		འཁོར་བ་འཇིག་	'Khor ba 'jigs *
2	e		གསེར་ཐུབ་	gSer thub *
2	f		འོད་སྤང་	'od srung *
2	g		ཤུག་ཐུབ་པ་	Shākya thub pa *
		Buddhas of the ten directions and three times ***		phogs bcu dus gsum gyis sangs rgyas
2	h		དཀོན་མཚོག་འབྲུང་གནས་	dKon mchog 'byung gnas *
2	i		མྱ་ངན་མེད་པ་	Mya ngan med pa *
2	j		རིན་ཆེན་འོད་འཕྲོ་	Rin chen 'od 'phro *
2	k		རྒྱལ་པོའི་དབང་པོ་	rGyal pa' dbang po *
2	l		པ་དམོ་དམ་པའི་དཔལ་མངའ་	Pa dmo dam pa' dpal mnga' *
2	m		ཉི་མ་སྐང་པའི་དཔལ་	Nyi ma snang ba' dpal *
2	n		གདུགས་མཚོག་དམ་པ་	gDugs mchog dam pa *
2	o		ཉིང་འཛིན་རྒྱང་པོ་དཔལ་མངའ་	Ting 'dzin glang pod pal mnga' *
2	p		པད་མའི་དཔལ་ཉིད་	Pad ma' dpal nyid *
2	q		དཀའ་བའི་དཔལ་ཅན་	dKa' ba' dpal can *
3		A pair of dGe lugs pa teachers		དགེ་ལུགས་པའི་སློབ་དཔོན་གཉིས་
3	a	<i>unidentified</i>		
3	b	<i>unidentified</i>		
4		The six ornaments and the two excellent ones		རྒྱན་དུག་མཚོག་གཉིས་
4	a	Nāgārjuna	Nāgārjuna	སྤྲུ་སྐྱབ་
4	b	Āryadeva	Āryadeva	འཕགས་པ་ལྷ་
4	c	Asaṅga	Asaṅga	ཐོགས་མེད་

¹ * Identity of the figure within the theme not secured, ** Identification of the iconographical figure not secured, *** Identification of the iconographical theme not secured

4	d	Vasubandhu	Vasubandhu	དབྱིག་གཉེན་	dByig gnyen
4	e	Dignāga	Dignāga	ཕྱོགས་ཀྱི་གླང་པོ་	Phyogs kyi glang po
4	f	Dharmakīrti	Dharmakīrti	ཚོས་ཀྱི་གྲགས་པ་	Chos kyi grags pa
4	g	Guṇaprabha	Guṇaprabha	ཡོན་ཏན་འོད་	Yon tan 'od
4	h	Śākyaprabha	Śākyaprabha	ཤུག་འོད་	Shākya 'od
5		bKa' brgyud pa lineage		བཀའ་བརྒྱུད་པའི་སྐབས་རྒྱུད་པ་	bKa' brgyud pa'i bla ma rgyud pa
5	a	Vajradhara	Vajradhara	རྗེ་འཆང་	rDo rje 'chang
5	b	Tilopa (988 – 1069)	Tilopa	ཏི་ལོ་པ་	Ti lo pa
5	c	Nāropā (c. 1016 – 1100)	Nāropā	ནྟ་རོ་པ་	Nā ro pa
5	d	Mar pa lo tsā ba (1012 – 1097)		མར་པ་ལོ་ཙྰ་བ་ཚོས་ཀྱི་སྐོ་གྲོས་	Mar pa lo tsā ba chos kyi blo gros
5	e	Mi la ras pa (1040 – 1123)		ཇེ་བཙུན་མི་ལ་རས་པ་	rJe btsun Mi la ras pa
5	f	sGam po pa (1079 – 1153)		སྐམ་པོ་པ་བསོད་ནམས་རིན་ཆེན་དུགས་པོ་ལྷ་རྗེ་	sGam po pa bSod nams rin chen Dwags po lha rje
5	g	Ras chung pa (1085 – 1161)		རས་ཚུང་པ་རྗེ་རྗེ་གྲགས་པ་	Ras chung pa rDo rje grags pa
5	h	Phag mo gru pa (1100 – 1170)		ཕག་མོ་གུ་པ་རྗེ་རྗེ་རྒྱལ་པོ་	Phag mo gru pa rDo rje rgyal po
5	i	gLing chen ras pa (1128 – 1188)		གླིང་ཆེན་རས་པ་བད་མ་རྗེ་རྗེ་	gLing chen ras pa Pad ma rdo rje
6		Prajñāpāramitā	Prajñāpāramitā	ཡུམ་ཆེན་མོ་འཕེལ་ཕྱིན་ནམ་	Yum chen mo 'am Sher phyin ma
7		Maitreya	Maitreya	རྒྱལ་བ་བྱམས་པ་	rGyal ba Byams pa
8		Uṣṇīṣavijayā	Uṣṇīṣavijayā	གཙུག་ཏོར་རྣམ་རྒྱལ་མ་	gTsuṅ tor mnam par rgyal ma
9		A pair of 'Brug pa bKa' brgyud pa teachers		འབདུག་པ་བཀའ་བརྒྱུད་པའི་སྐོབ་དཔོན་གཉིས་	'Brug pa bka' brgyud pa'i slob dpon gnyis
9	a	<i>unidentified</i>			
9	b	<i>unidentified</i>			
10		Sitātapatrā	Sitātapatrā	གདུགས་དཀར་	gDugs dkar
11		Mañjuśrī	Mañjuśrī	འཇམ་བའི་དབྱང་	'Jam pa'i dbyang
12		Jānguli	Jānguli	དུག་སེལ་མ་	Dug sel ma
13		A pair of 'Brug pa bKa' brgyud pa teachers		འབདུག་པ་བཀའ་བརྒྱུད་པའི་སྐོབ་དཔོན་གཉིས་	'Brug pa bka' brgyud pa'i slob dpon gnyis
13	a	<i>unidentified</i>			
13	b	<i>unidentified</i>			
14		Nīla Simhavatrā	Nīla Simhavatrā	སེག་གེ་གདོང་མ་སྐོན་མོ་	Seng ge gdong ma sngon mo
15		Vajrapāṇi	Vajrapāṇi	ཕྱག་ན་རྗེ་རྗེ་	Phyag na rdo rje
16		The eight medicine Buddhas (e-h)		སྐྱེན་སྐྱེད་པའི་གཞེགས་བརྒྱད་	sMan bla de gshegs brgyad
16	e	Asokottama *	Asokottama	མྱ་ངན་མེད་མཚོག	Mya ngan med mchog
16	f	Śākyamuni	Śākyamuni	ཤུག་ཐུབ་པ་	Shākya thub pa

16	g	Suvarṇabhadravimala *	Suvarṇabhadravimala	གསེར་བཟང་དྲི་མེད་	gSer bzang dri med
16	h	Abhijñarāja	Abhijñarāja	མངོན་མཁྱེན་རྒྱལ་པོ་	mNgon mkhyen rgyal po
17		White Tārā	Sita Tārā	སྒོལ་དཀར་	sGrol dkar
18		Green Tārā	Śyāma Tārā	སྒོལ་ལུང་	sGrol ljang
19		Parnāśabarī	Parnāśabarī	རི་ཁྲོད་ལོ་མ་གྱོན་མ་	Ri khrod lo ma gyon ma
20		The twelve deeds of Buddha Śākyamuni (g-1)		སངས་རྒྱལ་མཚོག་གི་སྤུལ་འདི་སྤུལ་འདི་ག་ ཉེན་དུ་མཛད་པ་བཅུ་གཉིས་	sangs rgyas mchog gi sprul pa'i skus 'jig rten du mdzad pa bcu gnyis
20	g	Practicing asceticism		དཀའ་བ་སྤྱད་པ་	dka' ba spyad pa
20	h	Reaching the point of enlightenment		བྱང་ཆུབ་སྤྱིང་ཡོར་གཤེགས་པ་	byang chub snying por gshegs pa
20	i	Defeating Māra's hosts		བདུད་བཅུལ་བ་	bdud btul ba
20	j	Attaining perfect enlightenment		མངོན་པར་རྫོགས་པར་སངས་རྒྱལ་པ་	mngon par rdzogs par sangs rgyas pa
20	k	Turning the wheel of doctrine		ཚོས་ཀྱི་འཁོར་ལོ་བསྐོར་བ་	chos kyi 'khor lo bskor ba
20	l	Departing for the ultimate peace of parinirvāna		སྤྱ་ངན་ལས་འདས་པ་	mya ngan las 'das pa

Iconographical Inventory North-eastern Wall ¹				
1	Wall-painted hanging with lion faces		ཤམ་བུ་	sham bu
Left Panel				
2	Vajrasattva	Vajrasattva	དོ་རྩེ་སེམས་དཔལ་	rDo rje sems dpa
3	Green-Blue Vajravīdāraṇa	Śyāmanīla Vajravīdāraṇa	དོ་རྩེ་རྩམ་འཛོམས་ལྷ་རྩོན་	rDo rje rnam 'joms ljang sngon
4	Akṣobhya	Akṣobhya	མི་འཇུགས་པ་	Mi 'khrugs pa
5	Red Mahākāla **	Rakta Mahākāla	མགོན་དམར་	mGon dmar
6	Pañjara Mahākāla	Pa ṅjara Mahākāla	ཀུར་གྱི་མགོན་པོ་	Gur gyi mgon po
7	Four armed Mahākāla	Caturbhūja Mahākāla	མགོན་པོ་བྱུག་བཞི་པ་	mGon po phyag bzhi pa
8	Mañjuśrī Nāgarākṣa	Mañjuśrī Nāgarākṣa	འཇམ་དཔལ་རྒྱ་གར་ལྷ་	'Jam dpal nā ga rakṣa
9	Brahmanarūpa Mahākāla	Brahmanarūpa Mahākāla	མགོན་པོ་བླ་མ་ཟེའི་གཞུགས་ཅན་	mGon po bram ze'i gzugs can
10	Six-armed Mahākāla	Ṣadbhūja Mahākāla also known as Sarvaviḡhnavināyaka Mahākāla	མགོན་པོ་བྱུག་དྲུག་པ་འཇམ་མགོན་པོ་འབར་ཆད་ ཀུན་སེམ་	mGon po phyag druk pa 'am mGon po bar chad kun sel
11	Dhūmavarṇa Krodhā Ucchuṣma **	Dhūmavarṇa Krodhā Ucchuṣma	ཁོ་བ་སྤེ་བཞེགས་དུད་ཁ་	Khro bo sme brtsegs dud kha
12	Yama Dharmarāja and consort Cāmuṅḡā	Dharmarāja Karmayama / Cāmuṅḡā	གཤེན་རྗེ་ཚོས་རྒྱལ་དང་	gShin rje Chos rgyal dang Tsā mundi
13	Mahākāla's four lieutenants and retinue (left to right)			
13 a	Kṣetrapāla	Kṣetrapāla	ཕྱེ་ཏུ་བླ་པ་	Kṣe tra pā la
13 b	Jinamitra	Jinamitra	རྩི་ན་སི་ཏུ་	Dzi na mi tra
13 c	Takkirāja	Takkirāja	ཏཱ་ཀི་རྩ་རྩ་	Takki rā dza
13 d	Trakṣad	Trakṣad	ཏྲ་ཀྲ་དང་	Trakṣad
13 e	Śrī Devī	Mahākāli Rematī	དཔལ་ལྷ་ན་ལྷ་མོ་འཇམ་བདུད་མོ་རེ་མ་ཏི་	dPal ldan lha mo 'am bDud mo re ma ti
13 f	Śaṅkhapāli Devī **	Śaṅkhapāli Devī	ལྷ་མོ་དུང་སྔོང་མ་	Lha mo dung skyong ma
Central Panel above door				
14	Wealth deities		རྒྱ་ནོར་གྱི་ལྷ་རྩམས་	rgyu nor gyi lha rnam
14 a	Six-armed Vasudhārā *	Sadbhūja Vasudhārā	ནོར་རྒྱན་པ་ཕྱུག་དྲུག་པ་	Nor rgyun ma phyag drug ma
14 b	Vasudhārā from the dhāraṇī *	Vasudhārā	གཞུངས་ལས་བྱང་འའི་ལྷ་མོ་ནོར་རྒྱན་པ་	gZungs las byung ba'i lha mo nor rgyun ma
14 c	Jambhala	Jambhala	རྩམ་པ་	Dzambha la
14 d	Vasudhārā	Vasudhārā	ནོར་རྒྱན་པ་	Nor rgyun ma
14 e	Mahāpita Vaiśravaṇna	Mahāpita Vaiśravaṇna	རྩམ་སྲས་སེར་ཚེན་	rNam sras ser chen

¹ * Identity of the figure within the theme not secured, ** Identification of the iconographical figure not secured, *** Identification of the iconographical theme not secured

14	f	Kṛṣṇa Jambhala	Kṛṣṇa Jambhala	རྒྱལ་ནག་པོ་	Dzambha la nag po
15		The guardian kings of the four directions	Lokapāla, dikpāla, Cāturmahārājika	ལྷ་གསུམ་རྒྱུད་རྒྱལ་པོ་ལས་རྒྱལ་ཆེན་ཕྱེ་བཞི་	phyogs skyong rgyal po 'am rGyal chen sde bzhi
15	a	Dhṛtarāṣṭra	Dhṛtarāṣṭra	ཡུལ་འཁོར་སློང་ངས་ཡུལ་འཁོར་སུང་	Yul 'khor skyong ngam Yul 'khor srung
15	b	Virūpākṣa	Virūpākṣa	ལྷ་ན་མི་བཟང་	sPyan mi bzang
15	c	Virūḍhaka	Virūḍhaka	འཕག་སྤེམ་པོ་	'Phag skyes po
15	d	Vaiśravaṇa	Vaiśravaṇa	ནམ་ཐོས་སྤམ་	rNam thos sras
16		The three forefather Dharma kings of Tibet		ཚོས་རྒྱལ་དབོན་རྣམ་གསུམ་	chos rgyal mes dbon rnam gsum
16	a	Srong btsan sgam po (centre)		ཚོས་རྒྱལ་སྲོང་བཅན་སྤམ་པོ་	chos rgyal Srong btsan sgam po
16	b	Khri srong lde btsan (left)		ཁྲི་སྲོང་ལྷེ་བཅན་	Khri srong lde btsan
16	c	Khri ral pa can (right)		ཁྲི་རལ་པ་ཅན་	Khri ral pa can
17		Śāntarakṣita (725–788) *	Śāntarakṣita	སློབ་དཔོན་ཞི་བ་འཚོ་	slob dpon Zhi ba 'tsho
18		<i>unidentified</i>			
19		The equestrian scene			
19	a	Human female rider			
19	b	Autochthonous warrior deity of West Tibet		མེས་བུ་ཞེས་པའི་གུ་གེ་ཡུལ་ལྷ་	Mes ba'u zhes pa'i gu ge yul lha
19	c	Autochthonous warrior deity of West Tibet		མེས་བུ་ཞེས་པའི་གུ་གེ་ཡུལ་ལྷ་	Mes ba'u zhes pa'i gu ge yul lha
19	d	Autochthonous warrior deity of West Tibet		མེས་བུ་ཞེས་པའི་གུ་གེ་ཡུལ་ལྷ་	Mes ba'u zhes pa'i gu ge yul lha
19	e	Human female rider with child			
19	f	Human female rider			

Right Panel					
20		Five dGe lugs pa teachers		དགེ་ལུགས་པའི་སྐོབ་དཔོན་ལྔ་	dGe lugs pa'i slob dpon lnga
20	a	Phun tshogs rgya mtsho *		ཕུན་སྐོར་ལ་འབྲམས་པ་ཕུན་ཚོགས་རྒྱ་མཚོ་	Brag sgo rab 'byams pa Phun tshogs rgya mtsho *
20	b	mKhar rdo bzod pa rgyal mtsho (1672 1749) *		མཁར་རྫོང་བཟོད་པ་རྒྱལ་མཚོ་	mKhar rdo bzod pa rgyal mtsho *
20	c	sGrub khang pa dge legs rgya mtsho (1641 1713)		སྐུ་བཀའ་པ་དགེ་ལེགས་རྒྱ་མཚོ་	sGrub khang pa dge legs rgya mtsho
20	d	Ngag dbang blo bzang rgya mtsho (1617 1682) *		ངག་དབང་སྐོབ་བཟང་རྒྱ་མཚོ་སྐུ་མེད་ལྔ་པ་	Ngag dbang blo bzang rgya mtsho sku phreng lnga pa *
20	e	Pañ chen Blo bzang ye shes (1663 1737) *		པཎ་ཚེན་སྐོབ་བཟང་ཡེ་ཤེས་སྐུ་མེད་ལྔ་པ་	Pañ chen Blo bzang ye shes mtsho sku phreng lnga pa *
21		Vajrapāṇi	Vajrapāṇi	བྲག་ན་རྫོང་ཇེ་	Phyag na rdo rje
22		Wish-fulfilling gem white Mahākāla	Cintāmaṇi Sita Mahākāla	མགོན་དཀར་ཡིད་བཞེན་རྫོང་བྲ་	mGon dkar yid bzhin nor bu
23		The glorious queen Śrī Devī	Śrīmatī Pārvatī Rājīnī	དབལ་ལྷ་ན་དམག་རྫོར་རྒྱལ་མོ་	dPal ldan dmag zor rgyal mo
24		The goddesses of the four seasons		དུས་བཞིའི་རྒྱལ་མོ་འམ་དུས་བཞིའི་ལྷ་མོ་	dus bzhi'i rgyal mo am dus bzhi'i lha mo
24	a	The spring goddess (missing)		དེའི་དུས་རྒྱུ་རྒྱལ་མོ་འམ་ལྷ་མོ་	dPyid gyi rgyal mo am lha mo
24	b	The summer goddess (missing)		དཡར་དུས་རྒྱུ་རྒྱལ་མོ་འམ་ལྷ་མོ་	dYar gyi rgyal mo am lha mo
24	c	The autumn goddess		སྟོན་དུས་རྒྱུ་རྒྱལ་མོ་འམ་ལྷ་མོ་	sTon gyi rgyal mo am lha mo
24	d	The winter goddess		དགུན་དུས་རྒྱུ་རྒྱལ་མོ་འམ་ལྷ་མོ་	dGun gyi rgyal mo am lha mo
25		Śrī Devī's other attendants		དབལ་ལྷ་ན་ལྷ་མོའི་བཞོན་གཞན་	dPal ldan lha mo'i 'khor bzhan
25	a	Makaramukhī (missing)	Makaramukhī / Makaravaktrā	རྒྱ་སྤྲིན་མོ་	Chu srin mo
25	b	Siṃhamukhī	Siṃhamukhī	སིང་གོ་དོང་མ་	Seng ge dong ma
26		The five sisters of longevity (from left to right)		ཚེ་རིང་མཚེད་ལྔ་	tshe ring mched lnga
26	a	mThing gi zhal bzang ma (missing)		མཐིང་གི་ཞལ་བཟང་མ་	mThing gi zhal bzang ma (missing)
26	b	Cod paṅ mgrin bzang ma (missing)		ཚོད་པཎ་མགྲིན་བཟང་མ་	Cod paṅ mgrin bzang ma (missing)
26	c	bKra shis tshe ring ma		བཀྲ་ཤིས་ཚེ་རིང་མ་	bKra shis tshe ring ma
26	d	Mi g.yo blo bzang ma		མི་གཡོ་རྫོ་བཟང་མ་	Mi g.yo blo bzang ma
26	e	gTad dkar 'gro bzang ma		གཏྲང་དཀར་འགྲོ་བཟང་མ་	gTad dkar 'gro bzang ma

BIBLIOGRAPHY

- BERESFORD, Brian, C. (2002): *The Confessions of Downfalls: The Confession Sutra and the Vajrasattva Practice*, Library of Tibetan Works and Archives, New-Delhi, 92 p.
- BLYTHE MILLER, Willa (2005): The Vagrant Poet and the Reluctant Scholar: A Study of the Balance of Iconoclasm and Civility in the Biographical Accounts of the Two Founders of the 'Brug pa bka' brgyud Lineages, in *Journal of the International Association of Buddhist Studies*, Vol. 28, No. 2, pp. 369-410
- BMTPC (2003): *Vulnerability atlas of India*, 2nd ed., Building Materials and Technology Promotion Council, Ministry of Housing & Urban Poverty Alleviation, Government of India
- BRAUEN, M. (1979): The PHA-SPUN of Ladakh, in *Tibetan Studies in Honour of Hugh Richardson*, Proceedings of the International Seminar on Tibetan Studies, edited by Michael Aris and Aung San Suu Kyi, Oxford, pp. 53-58
- BRAUEN, M., WILSON, M. (2000): *Deities of Tibetan Buddhism: The Zurich Paintings of the Icons Worthwhile to See*, Boston
- BROWN, E.T. (1981): *Rock characterization, testing and monitoring, ISRM suggested methods*, published for the Commission on Testing Methods, International Society for Rock Mechanics, Pergamon Press, Oxford
- CHOS DUNG DKAR PO (2010): Sakya Literary Magazine (Sa skya rtsom rig dus deb), Vol. 6, Dehradun
- DARGYAY, Eva K. (1987): The Dynasty of Bzang-la (Zanskar, West-Tibet) and its Chronology: A Reconsideration, in *Journal of the Tibet Society*, Silver on LAPIS, Twentieth Anniversary Special, pp. 13-32
online access: http://www.dspace.cam.ac.uk/retrieve/521975/JTS_SL_02.pdf
- DAVIDSON, Ronald M. (2002): *Indian Esoteric Buddhism; A Social History of the Tantric Movement*, Columbia University Press, New-York, 247 p.
- DENWOOD, Philip (2008): The Tibetans in the West, Part I, in *Journal of Inner Asian Art and Archaeology*, Vol. 3, pp. 7-21
- DE ROSSI FILIBECK, E. (2002): A Descriptin of Spyi ti by J. Gergan, in *Territory and Identity in Tibet and the Himalayas*, edited by Katia Buffetrille and Hildegard Diemberger, PIATS 2000, Leiden-Brill, pp. 313-324
- DUNG DKAR, blo bzang, phrin las (1995): *Dung dkar tshig mdzod chen mo*, Beijing, repr. 2002
- FENNER, Todd (1996): The Place of the rGyud bzhi in Tibetan Medical literature, in *Tibetan Literature: Studies in Genre*, edited by J.I. Cabezon and R.R. Jackson, Snow Lion Publication, pp. 552
- FRANCKE, A. H. (1907): *A History of Western Tibet*, Pilgrims Book Pvt.Ltd., Delhi, repr. 1999
(1914): *Antiquities of Indian Tibet, part I: Personal narrative*, Calcutta, India
(1914): *Antiquities of Indian Tibet, part II: The Chronicles of Ladakh and Minor Chronicles*, New Delhi, repr. 1992
- GERGAN, J. (1976): (YO SEB DGE RGAN) *Bla dwags rgyal rabs 'chi med gter*, edited by bSod nams sKyabs ldan dGe rgan, New Delhi-Sterling
- GOLDSTEIN, M.C. (2010): Tibetan Buddhism and Mass Monasticism, in Herrou, A. and Krauskopff, G. (ed.), *Des moines et des moniales de part le monde: La vie monastique dans le miroir de la parenté*, Toulouse

- GU GE, Tshe ring rGyal po (2006): *mNga' ris chos 'byung gangs ljongs mdzes rgyan zhes bya ba bszugs so*, Bod ljong mi dmangs dpe skrun khang, Lhasa, 485 p.
 (2011): *Mural Paintings in Wa-chen Cave in Western Tibet (mNga' ris rtswa mda' rdzong khongs wa chen phug pa'i ldebs ris sgyu rtsal)*, Bod ljong mi dmangs dpe skrun khang, Lhasa, 147 p.
- GUPTA, H.K. (1993): Seismic Hazard assessment in the Alpine belt from Iran to Burma, *Annali di Geofisica*, XXXVI, pp. 61-82
- HEIMBEL. J. (2011): Biographical Sources for Researching the Life of Ngor chen Kun dga' bZang po (1382- 1456), in *Revue d'Études Tibétaines*, No. 22, Novembre
 online access: http://himalaya.socanth.cam.ac.uk/collections/journals/ret/pdf/ret_22_03.pdf
- HELLER, Amy (1994): Early Ninth Century Images of Vairochana from Eastern Tibet, in *Orientalia*, 25 (6), pp. 74-79
 (2001): Indian Style, Kashmiri Style: Aesthetics of Choice in Eleventh Century Tibet, in *Orientalia*, 32 (10), pp. 18-23
 (2004): The Lhasa gtsug lag khang: Observations on the Ancient Wood Carvings, in *Tibet Journal*, 29 (3), pp. 3-24, online access: <http://www.asianart.com/articles/heller2/index.html>
 (2006): Recent Findings on Textiles from the Tibetan Empire, in *Central Asian Textiles and Their Contexts in the Early Middle Ages*, Riggisberger Berichte 9. Regula Schorta, ed. Riggisberg: Abegg-Stiftung, pp. 175-188
 (2007): Lions and Elephants in Tibet, Eighth to Ninth Centuries, in *Journal of Inner Asian Art and Archaeology*, Vol. 2, edited by Lilla Russell-Smith and Judith A. Lerner, Turnhout, pp. 59-67
 (2010): Two Early Tibetan Ritual Diagrams for Cakra Meditations, in *The Tibet Journal, The Earth Ox Papers, Proceedings of the International Seminar on Tibetan and Himalayan Studies*, edited by R. Vitali, Dharamsala, pp. 59-70
 (2013): A 15th century Thangka of Bhaiṣajyaguru: Reflections on the Historical Significance of the Medicine Buddha Cycles in Murals Paintings of Western Tibet, in *Journal of Tibetology*, No. 8, Center for Tibetan Studies, Sichuan University, Chengdu, in press
- HINÜBER, Oskar von (2003): The magnificent bronze of Nandivikramadityanandi: A delight for the beholder, a worry for the epigraphist, in *Orientalia*, 34 (4), pp. 35-39
 (2004): *Die Palola Sahis: Ihre Steininschriften, Inschriften auf Bronzen, Handschriftenkolophone und Schutzzauber, Materialien zur Geschichte von Gilgit und Chilas, Antiquities of Northern Pakistan: reports and studies*, Vol. 5., Philipp von Zabern, Mainz, 215 p.
 (2007): Three New Bronzes from Gilgit, in *Annual Report of the International Research Institute for Advanced Buddhism at Soka University for the Academic Year 2006*, pp. 39-43
 online access: http://www.freidok.uni-freiburg.de/volltexte/6754/pdf/Hinueber_Three_bronzes.pdf

- HODGE, Stephen (2003): *The Mahā-Vairocana-Abhisambodhi Tantra with Buddhaguhya's Commentary*, Curzon Studies in Tantric Traditions, Routledge, London & New York, 584 p.
- HOWARD, Neil (1995): The Fortified Places of Zanskar, in *Recent Research on Ladakh 4 & 5, Proceedings of the Fourth and Fift International Colloquia on Ladakh*, edited by Osmaston and Denwood, Motilal Banarsidass, New Delhi, pp.79-99
- JAHODA, C. (2007): Socio-economic organisation of a village communities and monasteries in Spiti, H.P., India: the case of religious administration unit (chos gzhis), in *Discoveries in Western Tibet and the Western Himalayas; Essays on History, Literature, Archaeology and Art*, edited by Heller, A., Orofino, G., PIATS 2003, Brill's Tibetan Studies Library, Vol. 10/8, Leiden, pp. 215-240
- (2008): Political space and socio-economic organisation in the lower Spiti Valley (early nineteenth to late twentieth century), in *Journal of the International Association of Tibetan Studies*, IV, pp.1-34
- (2009): Spiti and Ladakh in the 17th – 19th Centuries: views from the periphery, in *Mountains, Monasteries, and Mosques; recent research on Ladakh and the Western Himalayas*, Proceedings of the 13th Colloquium of the International Association for Ladakh Studies, edited by Bray, J. and de Rossi Filibeck, E., Rome, pp. 45-59
- KARMAY, Samten G. (1980): An Open Letter by Pho-brang Zhi-ba-'od to the Buddhists in Tibet, in *The Tibet Journal*, 5/3, Dharamsala, pp. 3-28
- KHOSLA, Romi (1979): *Buddhist Monasteries in the Western Himalaya*, Bibliotheca Himalayica, Series III, Vol. 13. Kathmandu: Ratna Pustak Bhandar
- KLIMBURG-SALTER, Deborah E. (1997): *Tabo, a Lamp for the Kingdom: Early Indo-Tibetan Buddhist Art in the Western Himalaya*, Skira Editore Milan, 256 p.
- (2005): *Tabo Monastery. Art and History with an Interview of Geshe Sonam Wangdu by Peter Stefan*, Austrian Science Foundation, Vienna
- LADAKH CHRONICLES: La dwags rgyal rabs, Bod ljongs mi dmangs dpe skrun khang, Lha sa, p. 106, reprint 1987
- LAURENT, Lobsang Nyima (2013): lHa bla ma Zhi ba 'od's Eighth Century Bronze from Gilgit, in *Revue d'Études Tibétaines*, online journal hosted by Yale and Cambridge Universities, No. 26, April, pp.195-214
online access: http://himalaya.socanth.cam.ac.uk/collections/journals/ret/pdf/ret_26_06.pdf
- LINDQUIST, E. S. (1994): *The Strength and Deformation Properties of Melange*, Ph.D. Dissertation, Department of Civil Engineering, University of California at Berkeley
- LUCZANITS, Christian (2004): *Buddhist Sculpture in Clay. Early Western Himalayan Art, late 10th to early 13th centuries*, Serindia Publications, Chicago
- MARTIN, E. (1977): Some Improvements in Techniques of Analysis of Paint Media, in *Studies in Conservation*, Vol. 22, No. 2, Maney Publishing, pp. 63-67, online access: <http://www.jstor.org/stable/1505703>

- MCCLEARLY, R.M., VAN DER KUIJP, L.W.J. (2008): *The Formation of The Tibetan State Religion: The Geluk School 1419 – 1642*, CID working paper no 154, Center for International Development at Harvard University, online access: <http://www.hks.harvard.edu/centers/cid/publications/faculty-working-papers/cid-working-paper-no.-154>
- MEDLEY, E.W. (1994): *The Engineering Characterization of Melanges and Similar Block-in-Matrix Rocks*, Ph.D. Dissertation, Department of Civil Engineering, University of California at Berkeley
- MOLNAR, P. and LYON-CAEN, H. (1989): Fault plane solutions of earthquakes and active tectonics of the Tibetan Plateau and its margins, in *Geophysical Journal International*, 99, pp. 123-153
- MOORCROFT, W. and TREBECK G. (1841): *Travels in the Himalayan Provinces of Hindustan and the Panjab; in Ladakh and Kashmir; in Peshawar, Kabul, Kunduz and Bokhara; from 1819 to 1825*, Vol. II., London
- NEUMANN, Helmut and Heidi (2012): Wall Paintings of Pang gra phug: Augusto Gansser's Cave in *The Arts of Tibetan Painting*, edited by Amy Heller, online access: <http://www.asianart.com/articles/neumann/index.html>
- NI, J. and BARAZANGI, M. (1984): Active tectonics of the Western Tethyan Himalaya above the underthrusting Indian Plate: The upper Sutlej river basin as a pill-apart structure, in *Tectonophysics*, Vol. 112, pp. 277-295
- OLIVIER, L. (2010): *Le sombre abîme du temps: Mémoire et archéologie*, Paris
- OSTO, Douglas (2009): Proto-Tantric Elements in The Gaṇḍavyūha sūtra, in *Journal of Religious History*, Vol. 33, No. 2, June, pp. 167-177, online access: <http://enlight.lib.ntu.edu.tw/FULLTEXT/JR-MAG/mag204407.pdf>
- PAL, Pratapaditya (1973): *Bronzes of Kashmir: Their Sources and Influences*, Royal Society for the Encouragement of Arts, Manufactures and Commerce, Journal, pp. 726-749
- (1975): *Bronzes of Kasmir*, Akademische Druck- u. Verlagsanstalt, Graz, 255 p.
- (2003): *Himalayas: An Aesthetic Adventure*, with contributions to Amy Heller, Oskar von Hinüber and Gautama V. Vajracharya, Art Institute of Chicago, in association with University of California Press, Chicago-Berkeley-Ahmedabad, 308 p.
- PEKING BTSAN 'GYUR, no. 3489: *rNam par snang mdzad kyi sgrub pa'i thabs kyi cho ga*, by Jayaprabha/rGyal ba'i 'od, Vol. 77, pp. 358-368
- PETECH, Luciano, (1977): *The Kingdom of Ladakh: c. 950 – 1842 A.D.*, Serie orientale Roma, ISMEO Rome, 191 p.
- (1997): Western Tibet: Historical Introduction, in D. E. Klimburg-Salter, *Tabo. A Lamp for the Kingdom: Early Indo-Tibetan Buddhist Art in Western Himalaya*, Milan, pp. 229-255
- PHARTIYAL, B., SHARMA, A., SRIVASTAVA, P., RAY, Y. (2009): Chronology of relict lake deposits in the Spiti River, NW Trans Himalaya: Implications to Late Pleistocene–Holocene climate-tectonic perturbations, in *Geomorphology*, No. 108, pp. 264–272, online access: <http://www.sciencedirect.com/science/article/pii/S0169555X09000658>

- 'PHRIN LAS, mThar phin, (2001): *rMad byung zhang zhung gi 'bri rtsal, Masterpieces throughout the Ages: A Selected Collection of Ngari Ancient Frescoes of Tibet, China*, Bod ljong mi dmangs dpe skrun khang, Lha sa, 219 p.
- RECLUS, E. (1891): *The Earth and Its Inhabitants. Asia. Vol. III. India and Indo-China*. New York, D. Appleton and Co.
- SEEBER, L. and AMBRUSTER, J.G. (1981): Great detachment earthquakes along the Himalayan Arc and long-term forecasting, in *Earthquake Prediction: An International Review, Maurice Ewing Ser.*, vol. 4, edited by W. Simpson and G. Richards, AGU, Washington, D. C., pp. 259–277
- SCHRAMM, H.P., HERING, B. (1995): *Historische Malmaterialien und ihre Identifizierung*, Stuttgart
- SCHROEDER, Ulrich von (1981): *Indo-Tibetan Bronzes*, Visual Dharma Publications LTD, Hong Kong, 576 p.
 (2001): *Buddhist Sculptures in Tibet. Vol. One: India & Nepal; Vol. Two: Tibet & China*, Hong Kong: Visual Dharma Publications, Ltd., 675 p.
 (2008): *108 Buddhist Statues in Tibet*, Serindia Publications, Chicago and Visual Dharma Publications, Ltd., Hong Kong, 212p.
- SCHWIEGER, Peter, (1996): *Stag-tshang Ras-pa's Exceptional Life as a Pilgrim*, in *Kailash-Journal of Himalayan Studies*, Vol. 18, No. 1-2, pp. 81-107, online access: http://himalaya.socanth.cam.ac.uk/collections/journals/kailash/pdf/kailash_18_0102_04.pdf
- SHUTTLEWORTH, H. Lee (1929): lHa-lun Temple, Spyi-ti, with a preface by A.H. Francke, in *Memoirs of the Archaeological Survey of India*, No. 39. Calcutta: Government of India, Central Publication Branch, repr. 1998
- SNELGROVE, D.L. (1957): *Buddhist Himalaya: Travels and Studies, in quest of the origins and nature of Tibetan religion*, Oxford
- SNELGROVE D.L., SKORUPSKI T. (1980): *The Cultural Heritage of Ladakh*, Volume 2, Warminster, Wiltshire, England, Aris&Phillips Ltd.
- STEINKELLNER, Ernst (1995): *Sudhana's Miraculous Journey in the Temple of Ta pho. The inscriptional text of the Tibetan Gandavyuhasutra, edited with introductory remarks*, Serie Orientale Roma 76, Rome
 (1996): *A Short Guide to the Sudhana Frieze in the Temple of Ta pho*, published on the Occasion of the Monastery's Millenium, Arbeitskreis für tibetische und buddhistische Studien, Universität Wien, Vienna
- THAKUR, Laxman S. (1997): Tibetan Historical Inscriptions from Kinnaur and Lahul-Spiti: A Survey of Recent Discoveries, in *Proceedings of the 7th Seminar of the International Association of Tibetan Studies*, Vol. 2, Graz, pp. 967-979
 (2001): *Buddhism in the Western Himalaya*. Oxford University Press, New Delhi
- TROPPER, Kurt (2008): *The Founding Inscription in the gSer khan of Lalung (Spiti, Himachal Pradesh). Edition and Annotated Translation*, Dharamsala, Library of Tibetan Works and Archives
- TUCCI, Giuseppe, GHERSI, Captain E. (1935): *Secrets of Tibet, Being the Chronicle of the Tucci's Scientific Expedition to Western Tibet (1933)*, translated from the Italian edition by Mary A. Johnstone, Cosmo Publications, New Delhi, 210 p., repr. 1996

- TUCCI, Guiseppe (1933): *Rin-chen-bzan-po and the Renaissance of Buddhism in Tibet around the Millennium*, Indo-Tibetica II, New Delhi, repr. 1988
 (1935): *The temples of western Tibet and their artistic symbolism: the monasteries of Spiti and Kunavar*, Indo-Tibetica III.1, New Delhi, repr. 1988
- VAIDŪRYA SER PO (1698): *dGa'ldan chos'byung Vaidūrya ser po*, by Sang rgyas rgya mtsho, Krung go bod kyi shes rig dpe skrun khang, Lha sa, 524 p., repr. 1987
- VITALI, Roberto (1996): *The Kingdoms of Gu.ge Pu.hrang: According to mNga'ris rgyal.rabs by Gu.ge mkhan.chen Ngag.dgang grags.pa*, Dharamsala, 642 p.
 (1999): *Records of Tho.ling: A literary and Visual Reconstruction of the "Mother" Monastery in Gu.ge*, Dharamsala, 226 p.
 (2000): *A Short Guide to Key Gonpa: Entitled The Mirror that Sheds Light on the Centre of the Mandala, in Tashi Tsering (ed.), sPyi ti dkyil dgon nor bu dge 'phel gyi byung ba brjod pa'i rab byed 'phags nor bdun ldan zhes bya ba bzhugs so*, Key Monastery, H.P, pp. 77-94
 (2003): *A Chronology (bstan rtsis) of events in the history of mNga'ris skor gsum (tenth-fifteenth centuries)*, in *The History of Tibet, II, The Medieval Period: c.850-1895. The Development of Buddhist Paramountcy*, ed. Alex McKay, London-New York, pp. 53-89
- WEINBERGER, Steven Neil (2003): *The Significance of Yoga Tantra and the Compendium of Principles (Tattvasaṃgraha Tantra) within Tantric Buddhism in India and Tibet*, PhD Dissertation for the Degree of Doctor in Philosophy, University of Virginia, online access: www3.nccu.edu.tw/~ckeng/doc/weinberger.pdf
- WORLD MONUMENTS WATCH (2005): *100 Most Endangered Sites 2006*. Watch Catalog 2005, p. 34
 online access: http://www.wmf.org/sites/default/files/wmf_publication/Watch_Catalog_2006.pdf,
 also see: <http://www.wmf.org/project/dhangkar-gompa>
- YIN, A. (2005): *Cenozoic tectonic evolution of the Himalayan orogen as constrained by along-strike variation of structural geometry, exhumation history, and foreland sedimentation*, in *Earth-Science Review* 76, pp. 1-131, online access: <http://www.sciencedirect.com/science/article/pii/S0012825205000565>
- YONTEN DARGYAY SORENSON, P. K. (2008): *Play of the Omniscient, Life and Works of Jamgön Ngawang Gyaltshan, An Eminent 17th-18th Century Drukpa Master*, National Library & Archives of Bhutan, Thimpu, 294 p.
- ZHANG, P., YANG, Z. X., GUPTA, H. K., BHATIA, S. C., SHEDLOCK, K. M. (1999): *Global Seismic Hazard Assessment Program (GSHAP) in continental Asia*, in *Annals of Geophysics*, Vol 42, No 6, pp.1167-1190,
 online access: <http://www.annalsofgeophysics.eu/index.php/annals/article/view/3778>

PICTURE INDEX

- Fig. 05: View of the monastery complex and the old village. LUCZANITS Christian, New York, 1991 (photographed), photo no. CL91 59,95 (WHAV)
- Fig. 06, 109, 269: The picturesque village of Dunkar, Spiti. Samuel Bourne, 1866 (photographed), albumen print from wet collodion glass negative, Museum number: 53:093
VICTORIA AND ALBERT MUSEUM, London
online access: <http://collections.vam.ac.uk/item/O107719/the-picturesque-village-of-dunkar-photograph-bourne-samuel/>
- Fig. 07, 109, 267: Spiti: Village of Dunkar. Francis Frith, 1850s to 1870s (photographed), whole-plate albumen print from wet collodion glass negative, Museum number: E.208:3316-1994
VICTORIA AND ALBERT MUSEUM, London
online access: <http://collections.vam.ac.uk/item/O217649/photograph-francis-frith/>
- Fig. 11: Building structures around the gateway stupa. LUCZANITS Christian, New York, 1991 (photographed), photo no. CL91 62,25 (WHAV)
- Fig. 17: Lion corbel in the temple of Sumda Chung. LUCZANITS Christian, New York, 2009 (photographed), photo no. CL09 2907
- Fig. 150: View at Dunkar. Francis Frith 1850s to 1870s (photographed), whole-plate albumen print from wet collodion glass negative, Museum number: E.208:3318-1994
VICTORIA AND ALBERT MUSEUM, London
online access: <http://collections.vam.ac.uk/item/O217651/photograph-francis-frith/>
- Fig. 198: Buddha and Adorants on the Cosmic Mountain, c. 700 India: Kashmir, 675-725 Bronze with silver and copper inlay. 13-1/4 x 9-1/2 x 4-3/4 in. (33.7 x 24.1 x 12.1 cm).
THE NORTON SIMON FOUNDATION, Pasadena, Picture number: F.1972.48.2.S.
- Fig. 199: Buddha Śākyamuni delivering the first sermon in the Deer Park of Sārnāth North-Western India: Patola-Shahi of the Gilgit Valley. SCHROEDER Ulrich von, 1993 (photographed), 7th Century Potala Collection: Li ma lha khang: inventory no 1383.
- Fig. 205: Historical portrayals of the ancient monastery and the surrounding buildings.
RECLUS, E. (1891): *The Earth and Its Inhabitants. Asia. Vol. III. India and Indo-China*, New York, D. Appleton and Co., face between p. 70 and 71;
online access: <http://archive.org/details/universalgeograp08recl>
KHOSLA, Romi (1979): *Buddhist Monasteries in the Western Himalaya*, Bibliotheca Himalayica, Series III, Vol. 13. Kathmandu: Ratna Pustak Bhandar, picture annex fig. 145

- Fig. 208: Regional geology of the Himalayas. YIN, A. (2005): Cenozoic tectonic evolution of the Himalayan orogen as constrained by along-strike variation of structural geometry, exhumation history, and foreland sedimentation, in *Earth-Science Review* 76, pp. 13-14, online access: <http://www.sciencedirect.com/science/article/pii/S0012825205000565>
- Fig. 209: Geomorphic classification of the Spiti valley. PHARTIYAL, B., SHARMA, A., SRIVASTAVA, P., RAY, Y. (2009): Chronology of relict lake deposits in the Spiti River, NW Trans Himalaya: Implications to Late Pleistocene–Holocene climate-tectonic perturbations, in *Geomorphology*, No. 108, p. 265, online access: <http://www.sciencedirect.com/science/article/pii/S0169555X09000658>
- Fig. 210: Earthquake hazard map of India. The map is based on digitised data of SOI, GOI; Seismic zones of India Map IS: 1983–2002, BIS, GOI. BMTPC (2003): *Vulnerability atlas of India- 2nd ed.*, Building Materials and Technology Promotion Council, Ministry of Housing & Urban Poverty Alleviation, Government of India
- Fig. 211: Seismic hazard map of Asia. ZHANG, P., YANG, Z. X., GUPTA, H. K., BHATIA, S. C., SHEDLOCK, K. M. (1999): Global Seismic Hazard Assessment Program (GSHAP) in continental Asia, in *Annals of Geophysics*, Vol 42, No 6, p. 1189, online access: <http://www.annalsofgeophysics.eu/index.php/annals/article/view/3778>
- Fig. 270: Dangkhari village from the east. LUCZANITS Christian, 1991 (photographed), New York, photo no. CL91 62,24 (WHAV)
- Fig. 338: View of the temple in Lalung. PECNIK Marianne, 2002 (photographed), FWF-Project archive, TU Graz

INDEX OF PHOTOGRAPHS WITH INITIALS

CA	Carmen AUER
DB	Dieter BAUER
G&S	Maria GRUBER and Kathrin SCHMIDT
HN	Holger NEUWIRTH
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