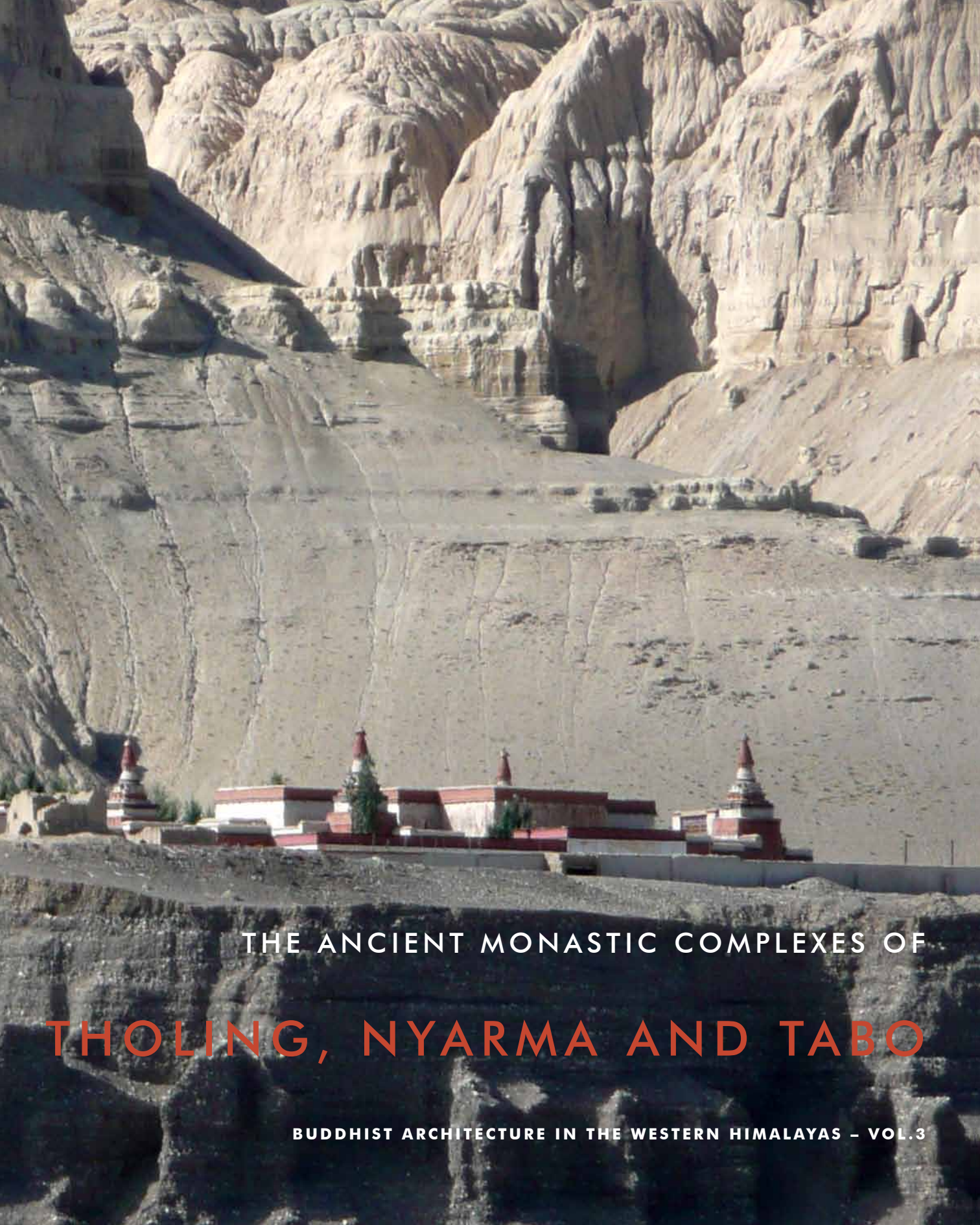

THE ANCIENT MONASTIC COMPLEXES OF THOLING, NYARMA AND TABO

BUDDHIST ARCHITECTURE IN THE WESTERN HIMALAYAS – VOL.3

THE ANCIENT MONASTIC COMPLEXES OF

THOLING, NYARMA AND TABO

BUDDHIST ARCHITECTURE IN THE WESTERN HIMALAYAS – VOL. 3

Graz University of Technology – Faculty of Architecture
Institute of Architectural Theory, Art History and Cultural Studies
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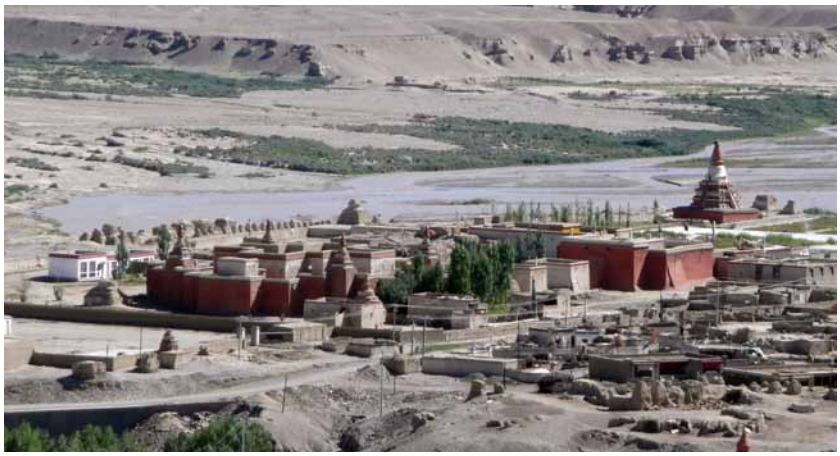


Fig. 01 The ancient monastic complex of Tholing as seen from the south. Neuwirth 2007.

Fig. 02 The ruins of the monastic complex of Nyarma as seen from the northeast. Auer 2003.

Fig. 03 The ancient monastic complex of Tabo as seen from the northwest. Neuwirth 2002.

Holger Neuwirth

PREFACE

The area defined as the Western Himalayas currently comprises parts of China (Tibet Autonomous Region/Ngari), Northern India (Himachal Pradesh, Jammu and Kashmir), Pakistan (Baltistan) and Northwest Nepal (Dolpo and Mustang). Due to the history of this region, its division into several different, partly antagonistic political units and the inaccessibility of the region, evidence of culture in the early period is only sparsely documented.

For analogous reasons, this extended region has witnessed different waves of cultural confrontation and change throughout history. Political dominance has shifted from one region to another, but economic interdependence and ethnic and religious relationships have, over the centuries, contributed to an ever-changing cultural dialectic. At the beginning of the Buddhist period, the westernmost parts of this region served as a corridor for cultural exchange between China and India. As Tibet became an important political power from the late 8th century and on – known as the Ancient Tibetan Monarchy or the First Diffusion of Buddhism – the Western Himalayas again were used as a corridor for communication, cultural exchange and military conquest.

With the Second Diffusion of Buddhism in Tibet, political power shifted toward the western borders of the Tibetan cultural world, with the capital first being located in Purang and then in Tholing and Tsaparang. The kingdom extended from modern Ladakh to the boundaries of Mustang and modern Ngari – including Spiti, Lahaul – and at least the upper regions of Kinnaur and Ladakh. Although this kingdom lasted only a 100 years at the height of its powers, a fusion of Tibetan, North Indian (Greater Kashmir), Chinese Central-Asian and local elements created a distinctive culture during that time, the impact of which was felt beyond the kingdom's borders for many centuries. Seen from another perspective, the Western Himalayas can also be considered as a boundary region; the westernmost boundary of Tibetan culture, the north-western boundary of Indian culture and the south-western boundary of the Chinese cultural sphere.[1]

The third volume of the series entitled Buddhist Architecture of the Western Himalayas, published by the TU Graz University Press, presents the monuments of the monasteries in Tholing, Nyarma and Tabo. These three monasteries were founded from the turn of the 10th to the 11th century and are a decisive testimony to the early development of the Kingdom of Guge.

1 PETECH 1997: 229-255.

Fig. 04 Map of the Western Himalayas with the dominion of the ancient Kingdom of Purang and Guge. © Neuwirth & Auer, TU Graz 2020.

All three monasteries are situated in open, fertile valley plains without significant fortifications. This shows an essential difference to monasteries founded later, which have an increasingly castle-like character in less exposed locations. Tholing is located in the Ngari province of Western Tibet, near the border to India, and was the main monastery of the Kingdom of Guge because of its secular and religious importance. Topographically, the plain is bordered by an ascending ridge of hills and the deep, vast riverbed of the Sutlej River to the north. Nyarma is located in the wide plain of the Upper Indus River valley in Ladakh. The valley plain is oriented on either side of the river from the southeast to the northwest, while a pond and the rising mountain slopes border the area on the northern side. Tabo monastery is located in the Spiti Valley of Himachal Pradesh, just 150 kilometres northwest of Tholing. The valley of the Spiti River runs along the south side of the valley and, behind it, the mountain range rises steeply.

While only an impressive field of ruins reminds visitors of Nyarma's former monastery complex, and some monuments in Tholing´s monastery broke down during the Cultural Revolution, Tabo is the only one of these three monasteries to have been used without interruption to this day. Accordingly, the state of preservation in the buildings is quite different today.

PROJECT BACKGROUND AND METHODOLOGY

Since 1998, research projects have been carried out at the Graz University of Technology with the aim to document and investigate the architectural heritage of the Western Himalayas. These research projects have mainly been funded by the Austrian Science Fund (FWF).[2] In trying to successfully address the challenges that arose in these projects, it was our role as experts to observe and analyse physical structures and environments and to put the primary focus "on what can be seen and touched".[3]

While these various projects were carried out, the collected data were continuously published on our website, making them openly available for the use of the worldwide scientific community.[4] In 2012 we initiated the process of publishing the comprehensive architectural data in the series entitled Buddhist Architecture of the Western Himalayas with the Graz University of Technology Press. The first two volumes were published in 2013 and 2015,[5] and the third volume is herewith presented. Further volumes shall include the research results that continue to be obtained.

In this regard, the principal methodology applied follows that which was adopted in 1995 in Denmark in the context of the InterSAVE cooperation project.[6] This methodology consists of the following phases:
Phase I involved the preliminary research, including the collection and analysis of the historical background. During this phase, the publications of Francke, Tucci and Snellgrove were of great relevance as well as the long-lasting collaboration with Christian Luczanits.[7]

Phase II continued with field research in which selected monuments were measured and surveyed by using various technical aids. The focus was placed on the site-layout, building forms and dimensions, the construction methods applied and the building materials used. In addition, assessments were made of the different damages to the buildings. Of particular importance was the "time factor", especially given the frequent and ongoing changes in these areas. The main causes for such frequent and ongoing changes are natural disasters, the lack of maintenance, social change and tourism as well as inappropriate methods of restoration.

2 FWF – Austrian Science Fund, Internet sources.
3 LARSEN & SINDING-LARSEN 2001: 10.
4 BUDDHIST ARCHITECTURE IN THE WESTERN HIMALAYAS, Internet sources.
5 NEUWIRTH & AUER 2013 and 2015.
6 INTER SAVE 1997, Internet sources.
7 LUCZANITS, Internet sources.

Phase III included the publication and dissemination of the collected data. The scientific analysis was additionally complemented by the use of methodology for conservation and restoration based on the sixteen guidelines laid down in the Venice Charter of 1964.[8]

Since the availability of textual or pictorial sources of information about the architecture in this context is generally scarce, the buildings themselves serve as the most reliable sources of information. Accordingly, field research is essential in that it forms the basis for documentation, analysis and sustainable restoration of the monastery complexes.

The documentation of the monastery complex in Tholing is based on its state of preservation in 2007. During our journey across Western Tibet from Lhasa to Tholing, we had the opportunity to visit important monasteries in Central Tibet such as those in Samye, Shalu, Sakya and Kojarnath. While Carmen Auer and I surveyed the monastery complex of Tholing, we were decisively supported (in establishing contact with the monastery officials) by the employees of the I.+B. Baechi Foundation, Amalia Sandri and Mathias Kilchhofer, who were working on the restoration of the White Temple at that time.[9]

I visited the ruin field of the monastery in Nyarma in 2000, 2003, 2004 and 2009 and digitally surveyed this site together with Carmen Auer in 2003 and 2004. Sonam Rigdin from the Nyarma Gompa Society provided valuable help and supported our work on the site. When conducting another visit in 2009 with Dieter Bauer, Dagmar Ley and Christian Luczanits, we noted that the site had been complemented with the new buildings that had been erected in the meantime.

The monastery in Tabo was digitally surveyed in 2002 during a two-month field research period with Hubert Feiglsdorfer, Marianne Pecnik. Interdisciplinary help was also provided during this survey by Anton Reithofer from the Department of Remote Sensing and Photogrammetry at the Graz University of Technology. We owe special thanks to the former Abbot Geshe Sonam Wangdu for providing support during this stay. In 2003 and 2010, additional data were collected in Tabo together with Carmen Auer.

8 ICOMOS. International Council on Monuments and sites, Internet sources.
9 I.+B.BAECHI FOUNDATION, Internet sources.

ACKNOWLEDGEMENTS

My thanks go to all those who have supported this project in a generous way. I would like to thank all the research assistants who have accompanied me over the years as part of the project and have been involved in the preparation of the results presented in this book: Birgit Androschin, Gernot Angerer, Carmen Auer, Dieter Bauer, Dagmar Ley, Bettina Paschke, Erich Rieger, Martina Rössl, Heinrich Sickl and Claudia Wrumnig.

My special thanks are given to Christian Luczanits, who has accompanied us and has provided his expertise in research projects and field research since 1999. Personally, I would like to emphasize my fruitful collaboration with Carmen Auer, who has actively participated with me on numerous research projects and research trips since 2002. She is not only the co-author and co-editor of this book series, but has also been in charge of the layout for our publications. The wonderfully illustrative spatial representations of the documented buildings are made possible thanks to our long-time colleague Dieter Bauer. Furthermore, I would like to thank Yannick Laurent for the constructive cooperation since our first joint field research in Dangkhar in 2010.

Regarding the historical photographic material, the Tucci Picture Archive in Rome was a valuable source for photos of Tholing and Tabo, which we are allowed to reprint here. In this context, we would like to thank Oscar Nalesini, who was responsible for carefully processing and maintaining the archive. The photos from the 1980s that Manfred Gerner kindly made available to us, the photos by Christian Luczanits and those obtained from the WHAV (the Western Himalaya Archive Vienna) from 1993 were also a valuable addition to this publication.

Rostam Neuwirth and Guo Jingrong from the University of Macau provided valuable support in terms of researching Chinese source material. I would also like to thank the Faculty of Architecture of the Graz University of Technology and the Institute for Architectural Theory, Art and Cultural Studies, who host us and support us in many bureaucratic matters. I sincerely thank the employees at the TU Graz University Press, who provided us with a great deal of support in the realisation of the print version, the printing and distribution of this book.

Last but not least, I would like to thank the Austrian Science Fund FWF, whose funding programmes in basic research have given us the opportunity to engage intensively in topics like these for many years.

HISTORICAL BACKGROUND

Fig. 05 Portrait of the Great Translator Rinchen Zangpo, 15th-16th century, Khardzong Cave, West Tibet (Ngari Prefecture, PRC). Courtesy of the Pritzker Art Collaborative, Chicago, 2012.

HISTORICAL BACKGROUND

Yannick Laurent (EPHE, Paris)

IN THE TIME OF THE GREAT TRANSLATOR RINCHEN ZANGPO

THE FOUNDATION PERIOD OF THOLING, NYARMA AND TABO MONASTERIES

> *"The river bed is here a scorching waste of rocks and dust about a mile wide. Fantastic precipices bound the view on all sides. The monastery of Toling stands opposite, on a shelf overlooking the Satlej. Its long crimson walls, set off by a few brilliant poplars in full leaf, its rows of white pure chortens, and high above, its gold roof sparkling in the haze, struck just that crowning note of unreality which the whole scene demanded. On the plateau I had had the sensation, common in Tibet, of wandering in another world. At Toling I thought that I was dreaming as well; and if Rinchen [Zangpo] himself, in black and yellow satin, had appeared then and there, grappling with his dragon on the bank of the river, I doubt whether I, or any of us, for that matter, would have been surprised."*
>
> *George Malcolm Young (1912)* [10]

Around the turn of the first millennium, the Indo-Tibetan regions of the Western Himalayas experienced an unprecedented cultural development and societal transformation. This movement, which would impact the people and their environment for many centuries to come, translated into the establishment of major religious sites across the land. One man in particular was to be involved in the process and would upstage the many actors who strived to transform Western Tibet into a flourishing Buddhist kingdom. Rinchen Wangchuk, better known as the Great Translator Rinchen Zangpo (*Lochen*), was born in 958 at a time when Tibet is often said to have been shrouded in darkness (Fig. 05). Less than half a century later, however, this situation would change when a dynasty of devout rulers, Tibetan translators, and Indian pundits engineered what became known as 'the later dissemination of Buddhism' among Tibetan historians. Many prominent scholars, such as Tucci and Davidson, have hailed this period as a Tibetan renaissance for its dissemination of ideas, spectacular artistic flowering, and the socio-political transformations that resulted, anchoring key societal and cultural components more broadly and permanently within Tibetan and Himalayan societies.[11]

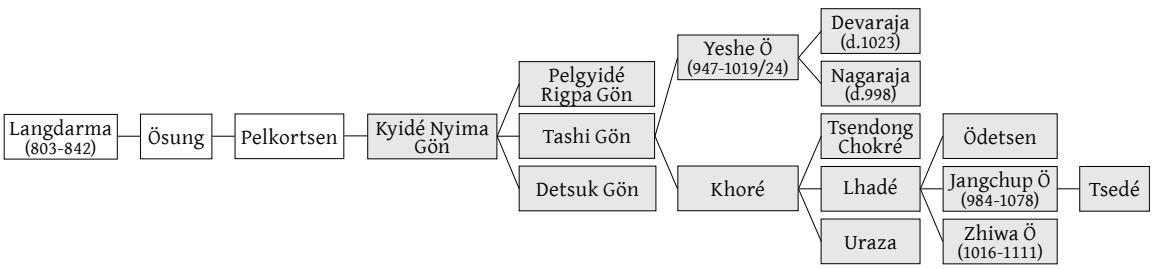
10 YOUNG 2007: 108.
11 TUCCI 1988a; DAVIDSON 2005.

Fig. 06 Patriline of Western Tibetan Dynasty (Kingdom of the Three Dominions of Upper Tibet, 10th-11th centuries). Laurent 2020.

In the process, Rinchen Zangpo became the emblematic figure of this Buddhist revival. The Tibetan literary tradition has it that Rinchen Zangpo founded religious edifices on one hundred and eight sites across the Western Himalayas; a suspiciously high yet saintly number in the eyes of the Buddhist world. According to an early hagiographical narrative titled *A Chain of Crystal Pearls*, the earliest temples attributed to Rinchen Zangpo were founded under the aegis of Western Tibetan royalty.[12] The story recalls that King Lhadé requested Rinchen Zangpo to establish the main temple of Khorchak in Purang, while the royal monk Yeshe Ö enjoined him to found the Twelve Subdivisions Temple of Tholing in Guge, and the site of Nyarma in Ladakh. The text asserts that the foundations of all three monuments were laid in a single day, sometime in the year 996. Significantly, this particular year also coincided with the founding date of Tabo Monastery in Spiti, another monumental project which would be credited, rightly or wrongly, to the Great Translator Rinchen Zangpo in the course of time. The third volume of this series is thus dedicated to the Buddhist architecture in the Western Himalayas and presents architectural and artistic documentation of all major temples founded at Tholing, Nyarma and Tabo. The establishment of these Buddhist monasteries in the last years of the tenth century and subsequent architectural development help illustrate one of the most glorious periods of Tibetan history.

In 842, the last ruler of a once mighty Tibetan Empire was murdered in retribution for his prior withdrawal of state patronage from Buddhist institutions and the subsequent dismantlement of monastic communities. Following the assassination of Langdarma (803–842), the empire collapsed and Tibet sank into chaos. However, this period of social and political fragmentation did not spur the complete extinction of Buddhism, which survived in the western and eastern borderlands of the Tibetan plateau.

12 SNELLGROVE AND SKORUPSKI 1980: 83–116.



A new religious impetus soon came from Western Tibet where descendants of the old Tibetan monarchy had sought asylum. Around 910, Kyidé Nyima Gön established a small but rapidly growing polity. He conquered the regions of Guge, Purang, and Ladakh within a couple of years resulting in the creation of the Kingdom of the Three Dominions of Upper Tibet (Fig. 04). After the king's death, the kingdom was divided between his three sons in the second quarter of the tenth century. As far as we know from extent sources, it is commonly held that Pelgyidé Rigpa Gön inherited Ladakh; Tashi Gön received Guge and Purang; and Detsuk Gön took Spiti, Kinnaur, Lahaul, and Zanskar (Fig. 06). By the third quarter of the tenth century, Tashi Gön's elder son, Yeshe Ö (947–1019/24), had reunited most of the former territories upon his ascension to the throne, setting the stage for a revitalization of Buddhism.

It was around this time that the young Rinchen Wangchuk was ordained, taking the name in religion Rinchen Zangpo (Fig. 07). In 975, at the age of seventeen and on his own initiative, Rinchen Zangpo set out for India in order to learn Sanskrit and study Buddhism.[13] After seven years spent in Kashmir, he then continued his journey to Eastern India where he acquired and translated a large body of Buddhist literature. Sometime before Rinchen Zangpo's return to Tibet in 987, King Yeshe Ö issued a grand decree exhorting the people of the kingdom to embrace Buddhism. In many ways, the issuance of his decree can be considered to mark the beginning of the later dissemination of Buddhism. It was rapidly followed by his *Religious Declaration* that gave precedence to religion over secularism. The new decree instructed the people to espouse Buddhist ethics and prioritise adherence to the new tantras.

13 GANGNEGI 1998: 45.

Fig. 07 'Bird-faced son of Ngari' aka Rinchen Zangpo, 15th-16th century, h. 45cm, Khartse Monastery, West Tibet (Ngari Prefecture, PRC). Courtesy of the Pritzker Art Collaborative, Chicago, 1999.

Reflecting on that period, a fifteenth-century chronicle titled the *Royal Succession of Ngari* describes a changing society. A passage asserts that all laymen and clerics were asked to protect the stability of the Buddhist doctrine.[14] With this goal in mind, the people of the kingdom had to show deference to Buddhist teachings and written commentaries, and respect all ordained monks and scholars. Vernacular knowledge such as medicine, hippology, and military know-how was to be imported from abroad. Furthermore, men were requested to be able to use a bow and arrow, to run, jump, exercise, swim, ride a horse, and to learn how to write, read, count. To guard against foreign incursions, people were exhorted to display strength and courage in the defence of their homeland.

From this time onwards, the rulers of West Tibet not only became avid patrons but also religious monarchs. In 989, Yeshe Ö abdicated the throne in favour of his brother Khoré and became a monk. Combining political legitimacy and religious piety, the cult of divine kingship was perfected by Western Tibetan rulers who, from then onwards, were known as divine lords (*lhatsun*) and/or monks of royal descent (*lha lama*). Thus "for the first time in Tibetan history", remarked Snellgrove, "an aristocratic family appears in the dual role of head of state and religious head, sharing these functions between them".[15]

Amongst Yeshe Ö's policy measures was also a *Refutation of Unorthodox Tantras* decree. This ordinance was an attempt to curtail misconceived religious activities.[16] Judging from the corrective actions promulgated in this document, some tantric rituals and practices performed in Central and West Tibet were deemed disruptive to social order for their promotion of the so-called 'liberation rites' for ritual murder – possibly including human sacrifices – and by encouraging sexual practices among different social strata as a means of salvation. A year before his death in 1024, Yeshe Ö issued yet another edict ordering two hundred bright young men from the regions of Guge, Purang, Ladakh, and Spiti to take holy orders and become the torchbearers of his missionary project.

14 VITALI 1996: 55, 110–111.
15 SNELLGROVE 1987: 472.
16 KARMAY 1998a.

As mentioned, Rinchen Zangpo returned to West Tibet aged twenty-nine in 987. He then spent the following years continuing the translation of Sanskrit Buddhist works into Tibetan. Meanwhile the monk-king Yeshe Ö moved the capital of the kingdom to the Luminous Plain of Tholing. Within a few decades, the site of Tholing had assumed the role of religious capital and cultural centre of the region. Texts composed in the seventeenth century report a prophetic tale, according to which a Tibetan king whose name ends in Ö and a bird-faced cleric were predestined to identify the site for the construction of a brand-new religious edifice.[17] The *modus operandi* of the foundation act was intriguing to say the least: it was believed that King Yeshe Ö and the bird-faced monk Rinchen Zangpo had determined the location of the new temple by throwing a wooden *gandi* high (*tho*) into the sky. The projectile glided (*ding*) through the air for a while before landing on the exact location at Tholing (*Thoding*) where the new temple had to be erected. A *gandi* beam is a percussion instrument used in Tibetan Buddhism to summon monks to prayers and atonement liturgies conducted indoors, akin to the semantron of the Orthodox church (Fig. 08).[18] In form, the *gandi* is usually a thick, octagonal piece of wood, slightly longer than an arm span. In flying to the site of Tholing, it symbolically 'calls' the king and his monks to worship. The narrative thus harks back to the reinstatement of religious orthodoxy and monastic life by Yeshe Ö and Rinchen Zangpo.

17 VITALI 2012: 116; VAN DER KUIJP 2015.
18 SOBKOVYAK 2015.

Fig. 08 Detail of a wall-painting showing a monk striking a *gandi* beam on the roof of a red temple (Tholing?), Maitreya Temple, Tabo Monastery, Spiti (H.P., India). Widorn 2004, WHAV (VW32,31).

Originally comprised of eighty monks, the ordained residents of Tholing Monastery were expected to adhere to strict sets of rules and monastic regulations. With Rinchen Zangpo assuming the positions of head abbot, tantric master, and court chaplain, Yeshe Ö for his part laid down the economic provisions to support the monks. According to *The Royal Succession of Ngari*, the intended provisions of the community, the donation practices, the monks' attire, and the basic amenities were placed under the supervision of Tholing Monastery. In this context, one thousand loads and ten measures of seeds, salt, and other rations would be set aside from fields, pasture, and newly established ecclesiastical estates for the benefit and enjoyment of the monastic community. These regulatory dispositions, which entailed a form of feudal serfdom system, were laid down as irrevocable "for as long as the sun and the moon would preserve their course".[19] Established in the year 996, the main temple at Tholing was known under two different names, namely the Twelve Subdivisions Temple or the Glorious Matchless Self-Perfected Temple (Fig. 09). It was completed in 1028 during the reign of King Lhadé, Yeshe Ö's nephew. From this time onward, the new monastic complex was to remain one of the most prestigious monasteries in Tibet. It would be compared to the Indian learning centre of Nalanda and described as the 'Bodhgaya of Tibet' in late Tibetan sources.[20]

Throughout this period, Western Tibetan rulers ensured the sustainability of their dominions through deft exploitation of pastoral activities and economic resources, most notably gold mining and panning, without which a revival of Buddhist activities and cultural patronage would have been next to impossible. Numerous literary accounts tell how the precious metal

19 VITALI 1996: 56, 111.
20 VITALI 2012: 96–101, 114–27.

Fig. 09 The Twelve Subdivisions Temple also known as the Glorious Matchless Self-Perfected Temple. Spatial representation: Neuwirth & Auer, TU Graz 2020.

flowed from the Himalayas towards the Indo-Gangetic plain through the hands of Tibetan disciples and pilgrims. Gold was lavishly offered to the Buddhist shrines of India, while gold donations were made to Buddhist masters in exchange for teachings and tantric empowerments. The proverbial appetite for this precious metal by Indian masters was soon matched by some of their Tibetan counterparts. Drokmi Shakya Yeshe (992?– 1043/72), for example, was one of the most expensive Tibetan teachers in the eleventh century. He was reputed to demand a fortune in gold in order for him to bestow esoteric teachings obtained in India. Likewise, his disciple Marpa the Translator (1012?–1097) travelled back and forth between Tibet, the Kathmandu valley, and North-Eastern India thanks to the large quantities of gold offered by his followers and patrons. Indeed, the precious metal played an exceptional role in the transmission of esoteric literature into Tibet, with devout Tibetan disciples often willing to pay cash on the nail. An apocryphal tale, which inadvertently confuses the royal monk Yeshe Ö with his nephew King Lhadé, narrates how the king of Guge was being held captive by Muslim Qarakhanid Turks until a ransom equivalent to his weight in gold was paid. The legend has it that the Tibetan monarch urged his heirs to refuse to pay the ransom – and thus Yeshe Ö would have allegedly died by the hands of his captors – instead advising them to use the gold in order to invite the famous Bengali scholar Atisha (982–1055?) to Tibet. The authenticity of this tale is challenged by a relatively early text stating that Yeshe Ö lived out his days in Tholing where he eventually died of old age.[21]

Fig. 10 The Golden Temple of Tholing. Spatial representation: Neuwirth & Auer, TU Graz 2020.

The advantageous position of Western Tibet at the crossroads of Inner Asia proved to be vital to the success of this period. The Kingdom of the Three Dominions of Upper Tibet was part of an important nexus of trade routes connecting the Indian subcontinent to the city-states of the Silk Roads in the north. Monastic complexes established along these routes ensured the safe journey of merchants, craftsmen, and missionary monks. They provided safe havens for long distance caravans against marauding brigands, offering basic amenities, clerical assistance, and banking facilities to travellers. As was often the case in Asia, the growth of trade was co-emergent with the strategic location of monasteries. As a result, the establishment of religious complexes and translation centres across the kingdom not only enabled the dissemination of Buddhism but also contributed to the economic development and pacification of the region.

21 VITALI 1996: 113; GANGNEGI 1998: 41.

From around the end of the first millennium onwards, the expansion of Islam and the progressive decline of Indian Buddhist institutions must also account for the transmission of ideas and renewed interest in esoteric Buddhism. After the fall of the Indian Pala and Sena dynasties, the Ghurids from Central Afghanistan began their conquest of India in 1175. Buddhist religious centres such as Nalanda and Odantapuri, which had already suffered from a decline of patronage, were eventually devastated by Sultan Mu'izz-ud-din Muhammad (1149–1206) and his lieutenant Muhammad Khalji (d.1206); the latter even contemplated invading Tibet before he died in 1206. The iconoclastic suppression of Buddhist monasteries in North-Eastern India was carried on until 1235, and only the Kashmir region managed to retain its Buddhist milieu until the end of fourteenth century.

During this period, Tibet maintained close cultural links with India until at least the beginning of the fourteenth century. Tibetan masters and pilgrims were frequently drawn towards the Buddhist sites of northern India. Several of them sojourned in Bodhgaya to receive teachings despite the recuring threat of Islamic raids. Devout Tibetan monks financed renovation work of the holy seat and occasionally assumed the abbotship of the Mahabodhi Temple.[22] Meanwhile on the Tibetan plateau, Buddhist literati grew increasingly convinced that they were the Buddha Shakyamuni's designated heirs. The intensive literary production carried out in their homeland also favoured the emergence of cosmological narratives in which the Land of Snows was unexpectedly recast as a Buddhist repository and promised land.

22 HUBER 2008; VITALI 2010.

Fig. 11 Detail of a column capital showing a seated bodhisattva inside a lotus medallion, late 10th - early 11th century, Shelkar, Upper Kinnaur (H.P., India). Laurent 2016.

In so doing, the conversion of Tibet to Buddhism in the seventh century was revisited by Tibetan authors, now promoting the glorification of the old Tibetan monarchy and the restoration of a golden age.[23]

As is well known, the later dissemination of Buddhism also prompted an unprecedented artistic efflorescence. Tenuous archaeological evidence shows that Buddhism had already been introduced in the Western Himalayas prior to the formation of the Kingdom of the Three Dominions in the tenth century.[24] Large monastic centres and religious buildings established under royal patronage were now influenced by a new visual grammar. The surviving monuments from this period display a profusion of woodcarvings, murals, clay sculptures, and painted ceilings (Fig. 11). A variety of iconographical themes and images began to reflect the ubiquitous influence of esoteric Buddhism, apparent despite the suspicions of the ruling elite regarding the abuses and excesses of antinomian forms of Tantra. In this respect, Kashmir, which had been a repository for Shaivism and esoteric Buddhism since the eighth century, served as a conduit for the transmission of both tantric literature and art into Western Tibet.

As it turned out Rinchen Zangpo departed for Kashmir soon after the establishment of the new monastic complex of Tholing only to return in 1001. He was then accompanied by thirty-two Kashmiri artists and craftsmen who had been summoned to work at the newly founded temples of the kingdom. The name of at least one of them is preserved in the literary tradition, in which it is recounted that the Indian artist Bhidhaka was commissioned to make a statue of Avalokiteshvara the size of Rinchen Zangpo's father (Fig. 12).[25] Similarly, The *Royal Succession of Ngari* maintains that two hundred and twenty-three artists were involved in the construction of the Golden Temple at Tholing (Fig. 10). The passage reports that the provenance of its main icon was India.[26] The chronicle does not specify whether Indian artists created the altar image *in situ*, nor does it tell if the sculpture had been brought all the way from the workshops of the Gangetic plain. This account, however, would seem to suggest that the impact of Indian aesthetics went beyond the obvious influence of Kashmir alone.[27]

Fig. 12 Avalokiteshvara, Kashmir, late 10th century, h. 180 cm, Khatse Monastery, West Tibet (Ngari Prefecture, PRC). Courtesy of the Pritzker Art Collaborative, Chicago, 1999.

23 DAVIDSON 2004.
24 LUCZANITS 2004: 25–27.
25 PRITZKER 2000.
26 VITALI 1999: 30–31.
27 HELLER 2001.

Fig. 13 An 8th-century Buddha statue from Gilgit, northern Pakistan, bearing the name of the royal monk and translator Zhiwa Ö (1016–1111) in Tibetan script, Dangkhar, Spiti (H.P., India). Laurent 2010.

With the transplantation of Indo-Kashmiri imagery into Tibet, Buddhist artworks produced by foreign artists were held in high regard. Within an aesthetic of devotion, portable metal statuary in particular was much sought after by the royal house of the kingdom. Acting as devout patrons and agents of cultural development, several members of the royal family began to collect Buddhist sculptures from Kashmir and neighbouring regions, including antiques (Fig. 13).[28] These sacred objects were carefully engraved with epigraphs bearing the name of their Tibetan owners, among which are included Yeshe Ö's son, prince Nagaraja (d.1026), King Jangchup Ö (984–1078), the royal monk Zhiwa Ö (1016–1111), and his nephew King Tsedé. A biographical account of Yeshe Ö's life composed in the fifteenth century even goes as far as saying that the future king had studied the sciences of manufacture aged ten, reaching the highest degree of perfection in the making of sacred Buddhist images.[29] On a more concrete level, the text goes on to provide a glimpse into the economy in the crafts industry. Insisting on the scrupulous observance of iconometry, a passage details how much painters and sculptors were remunerated for their work. For instance, a painter who carried out his work with due diligence would receive his wage on the fifteenth day of the month at the time of the esoteric consecration of the paintings. Should he be careless, one third of the wage would be deducted and go towards religious services. Likewise, metal and clay sculptors responsible for sloppy workmanship would see a fourth of their wages levied for the sake of the church.

28 LAURENT 2013; LINROTHE 2014.
29 GRAGS PA RGYAL MTSHAN 2013: 6.

However, the payment of wages was also established on basis of artistic and technical difficulties. A sculptor would get three times his normal wage for a gilded portrait wearing full monastic robes. Bedecked statues and multi-armed deities, on the other hand, would bring him six and twelve times his wage respectively. Centuries later, the monastery of Tholing was still praised as an important centre for the production of portable metal images, which were by then referred to as 'Tholingma'.

Paralleling the transmission of texts based on Yogatantra teachings, the monuments erected during this pivotal period were focused to a great extent on representations of Buddha Vairocana as their main devotional image. Three different forms of this cosmic Buddha are found in the early Tibetan Buddhist art of the Western Himalayas; namely Vairocana in a meditative poise, Mahavairocana, and four-fold depictions of Vajradhatu Vairocana (Fig. 14).[30] These artistic preferences were not just dictated by the diffusion of related texts but may also have reflected concerns about political legitimacy. In effect, the artistic programme of these early temples often appeared congruent with the divine status of Western Tibetan rulers. In accordance with the artistic representations of Vairocana in vogue at the time, Rinchen Zangpo translated several commentaries on the *Sarvatathagatatattvasamgraha*, a seventh century Indian Buddhist text which played an essential role in the diffusion of esoteric literature in South-East Asia and Tibet.[31] In 1006, the Great Translator received his full ordination at the age of forty-eight, after which most sources suggest he remained in Guge until the end of his life – although a few mention a third journey to India. Among his many translations and editorial activities, he is credited with the introduction of the Chakrasamvara Tantra to Tibet and also actively promoted the esoteric teachings of the Yogatantra and Niruttarayoga traditions. The intellectual enterprise carried out at centres such as Tholing and Tabo involved the close collaboration of Indian scholars, Tibetan translators, and copyists, who would often travel back and forth between Kashmir, Bengal, and West Tibet. Rather than starting from a clean slate, the literary movement engineered by Rinchen Zangpo and his disciples also included the revision of existing scriptures and earlier translations which had reached Tibet during the previous centuries.

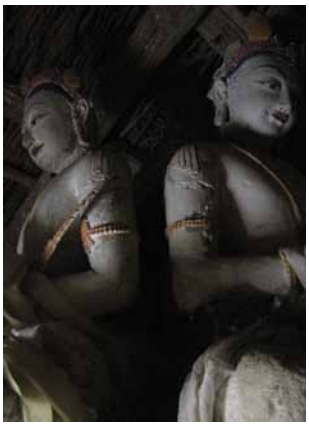


Fig. 14 A monumental four-fold image of Vajradhatu Vairocana plunged in semi-darkness, 11th century, Lhalung, Spiti (H.P., India). Laurent 2010.

30 LUCZANITS 2004: 201–209.
31 WEINBERGER 2003.

Rinchen Zangpo was eighty-four years old when Atisha Dipamkarashrijnana set foot in the capital of the kingdom in 1042 at the behest of King Jangchup Ö (984–1078) (Fig. 15). The contribution of Atisha, the legendary Buddhist scholar from Bengal, to the cultural history of the period soon came to epitomize the later dissemination of Buddhism.[32] The collaboration between Atisha and Rinchen Zangpo, as depicted in the Tibetan literary tradition, was one of master and disciple, and further occasionally portrays the old Tibetan translator as mildly provincial. Initially impressed with his hosts, Atisha soon realized that his zealous Tibetan disciples were practicing numerous tantric rituals without realizing the essence of a single one of them. While revising esoteric literature with local translators on the one hand, Atisha was simultaneously requested to propagate traditional Mahayana views. He thus composed his famous *Lamp for the Path to Awakening*, accompanied by its own commentary. The text quickly achieved a high degree of success, enabling the emergence of a soteriological literary genre called the *Graded Path (Lamrim)*. For this reason, the later Kadampa and Gelukpa schools of Tibetan Buddhism will often tend to overstress the role played by the Indian pundit. Yet Atisha's vaunted status within Tibet is not a matter of unanimous consensus. As a matter of fact, Davidson notes that "the early textual record actually depicts Atiśa as something of a pawn in the hands of Tibetan teachers".[33] In 1045, Atisha requested that Rinchen Zangpo accompany him to Central Tibet, but the Great Translator declined due to his age. During his travels, the Indian master and his supporters were not always received with all due honours, and their safety and livelihood depended much on the support of local rulers. The Bengali scholar sometimes encountered scepticism, if not hostility, and was even prevented from teaching a section on monastic discipline by his own Tibetan disciples, who at the time followed a different textual tradition.[34]

The adoption and adaptation of esoteric Buddhism in the late tenth century was thus a vast intellectual and religious enterprise which continued during much of the eleventh and twelve centuries. In 1076, a religious council was held in Tholing for more than a year, involving the participation of foreign scholars, Tibetan masters and translators. Among the latter group, some one hundred and twenty-one participants were not even natives of West Tibet. Yet, doctrinal standardisation was never completely achieved.

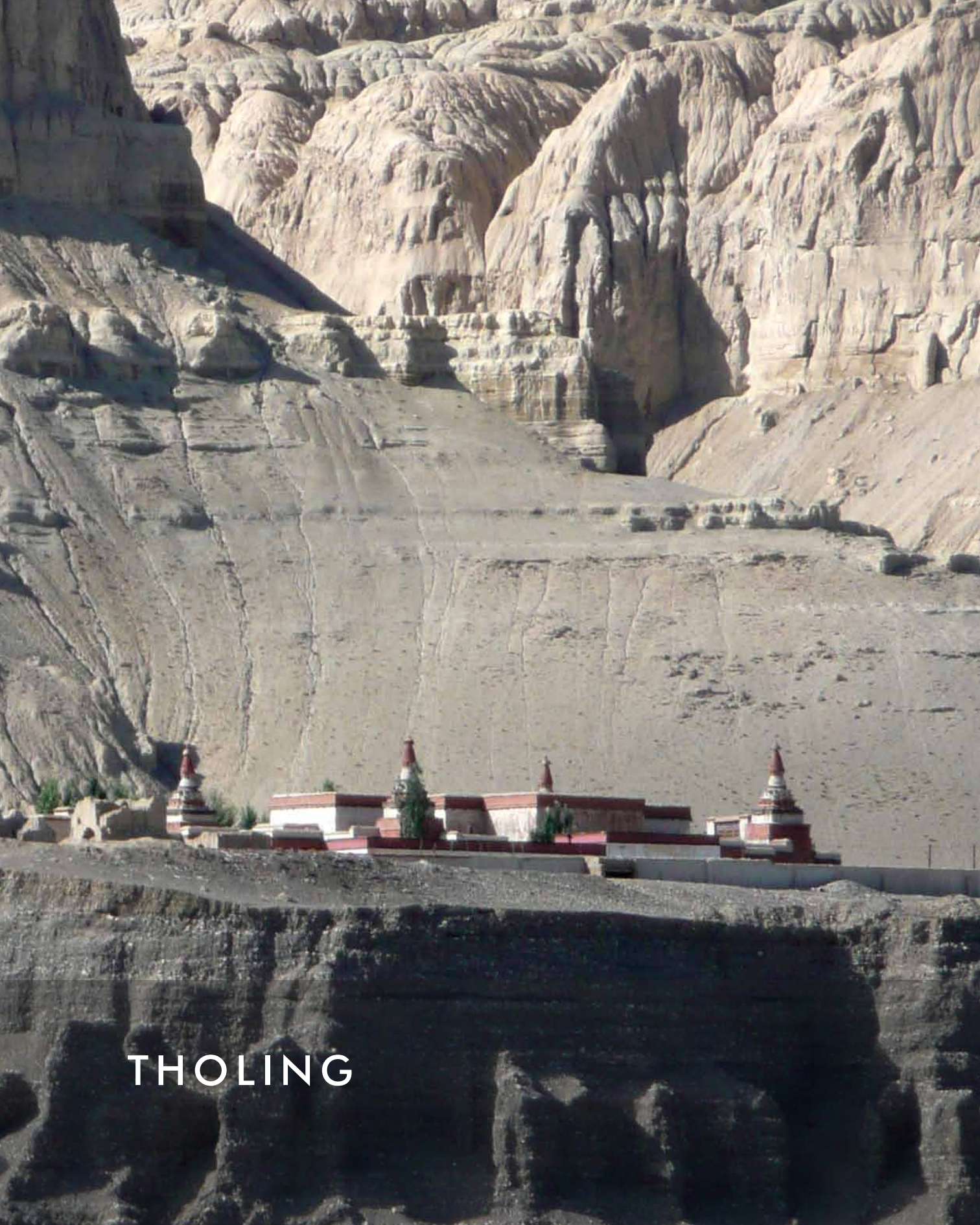
32 EIMER 1978; EIMER 1979; ROESLER 2019: 1145–1158.
33 DAVIDSON 2005: 111.
34 DAVIDSON 2005: 110.

In 1092, the royal monk and translator Zhiwa Ö (1016–1111) made public a list of seventy-two works, both old and new, which were being regarded as apocryphal and corrupted. Most of the proscribed texts were largely concerned with aspects of the now old tradition of Tibetan Buddhism (*Nyingma*). In the footsteps of Yeshe Ö's previous ordinance proscribing certain religious practices, the decree was issued "out of kindness to the Buddhists and Vajrayana practitioners of the kingdom of Tibet".[35] Notwithstanding the pious and altruistic motivations of its Western Tibetan patrons, the search for religious legitimacy, doctrinal consistency and orthopraxis would soon result in a proliferation of religious figures and schools. Zhiwa Ö's decree significantly concluded that the Tibetans had produced too many tantric rituals; a situation that could only lead to evil rebirths and more sufferings. These lines, addressed by the royal monk to the new Buddhist communities of Tibet, would seem to capture this particular moment where the need for political legitimacy and the search for religious orthodoxy coalesced in a form of sectarianism that can arguably be viewed as the foundation of Tibetan Buddhism.

In this brief introduction, I have merely sketched in broad strokes nearly two centuries of intensive religious, artistic and political activities. In this narrative, the Great Translator Rinchen Zangpo was a pioneer, whose own inspirations coincided with the establishment of a kingdom ruled by a lineage of devout rulers and royal monks. His association with some of the key figures of the time, such as the monk-king Yeshe Ö and the Indian scholar Atisha, should not obscure the fact that most of Rinchen Zangpo's life was spent in a solitary pursuit of knowledge and spiritual realisation. As an industrious translator, relentless disciple and teacher, Rinchen Zangpo embodies the grit and audacious spirit of the mountain people. When Atisha left Tholing, the Great Translator soon retired at Khatse where he spent the last years of his life in seclusion until he died in 1055, aged ninety-seven. While traditional Tibetan historians would take hold of his life and embellish his achievements with tales of his magical prowess and the construction of a myriad of religious edifices, in reality, Rinchen Zangpo's contributions to the history of Tibetan Buddhism were nothing short of miraculous.

Fig. 15 The long-lasting influence of Atisha Dipamkarashrijnana (982–1054) in Tibet is evidenced by this 18th-century portrait of the Indian pundit, Dangkhar, Spiti (H.P., India). Laurent 2010.

35 KARMAY 1998b: 38.



THOLING

Fig. 16 The village of Tholing with the ancient monastery situated on a flat plain on the south bank of the Sutlej River Auer 2007.

THE MONASTIC COMPLEX OF THOLING

Carmen Elisabeth Auer

TOPOGRAPHY AND LOCATION

Tholing is located in Ngari in the western part of the Tibet Autonomous Region, about 150 kilometres southeast of Tabo in Northern India. The road from Lhasa to Tholing leads through the high mountain ranges of the Western Himalayas at an altitude of 5,200 –5,500 metres. The village is located 3,700 metres above sea level on the south bank of the Sutlej River, which formed an impressive wide valley.

The settlement with about 600 residents is situated on a flat plain and extends over about 1.3 square kilometres, flanked by mountains ranges to the south. In the last decades, many new buildings were constructed around the monastery, whereby the appearance of the place has changed considerably. The monastic area is located on the northern end of the town, while the recently established buildings dominate the south. Today, the village has well-developed new streets, hotels, a post office, as well as office and telecommunication facilities.

The road into the village leads directly along the enclosed monastery area, which is easy to identify, especially due to the size and shape of the Main Temple. The structures of the older settlement were located on the south side of the monastic area and consisted of relatively small, single-storey mud brick buildings which, according to the topography, were arranged around courtyards. At the time of our visit in 2007, this village structure still existed.

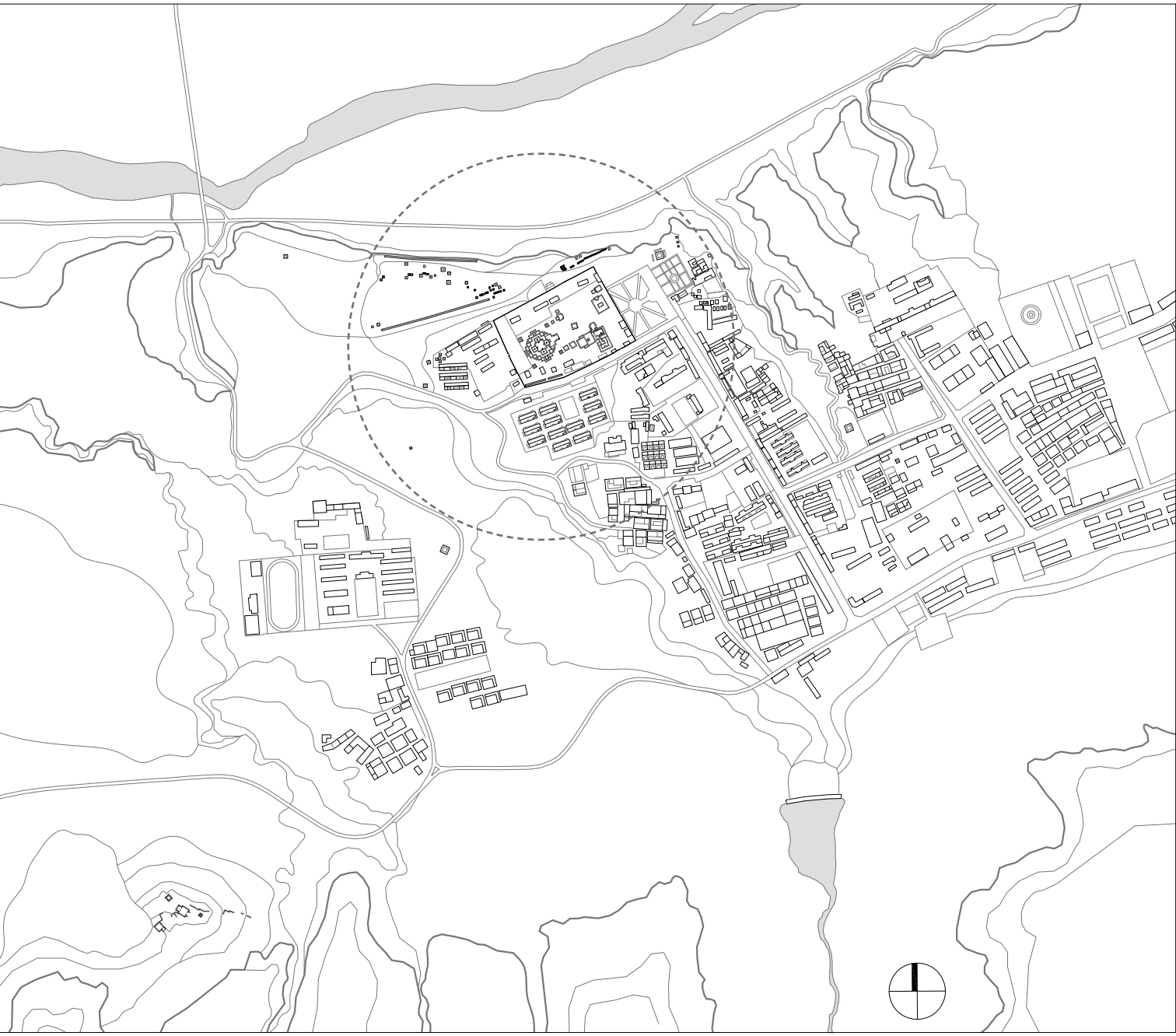
In the course of the extension of the access road, which connects the new bridge across the Sutlej with the main road of Tholing today, the old village buildings were removed. These were replaced by multi-storey residential buildings that were erected on the site. In addition, the extension of the road changed the course of the enclosure wall on the south side of the temple area.

Fig. 17 South-western view of the settlement, as seen from the adjacent mountain range. Auer 2007.

Fig. 18 Northern view of the monastery with the Main Temple on the right and the Red Temple on the left. Auer 2007.

Fig. 19 On the north and northwest side of the monastery, an impressive number of chörten rows and chörten groups are preserved in front of the river valley. Neuwirth 2007.

Fig. 20 The monastery complex of Tholing, as seen from the river valley, with the Main Temple on the right and the White Temple on the left. Auer 2007.



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THE SACRED COMPOUND

The sacred compound (Tib. *chos'khor*) of Tholing is situated in the northwestern part of the settlement, on a plateau above the Sutlej River, not far from the ridge of the river bank. Today, the main road which leads to the village passes the monastery directly on its southeast side.
The monastery was founded in the year 996 by Yeshe-Ö, the King of Guge. For several centuries, this monastery represented the centre of Tibetan Buddhism in the Kingdom of Guge and remained a thriving religious centre in the 13th and 14th century, retaining its indigenous artistic tradition even under Central Tibetan influence. The ruling elite of the later Kingdom of Guge (1400–1630) made Tholing a centre for the newly established Gelugpa School.[36]

Photographs of the area taken in the 1930s during the Tucci expedition by Eugenio Ghersi show that, at that time, no houses or village structures obviously existed around the monastery. On the other hand, the density of buildings within the monastery walls once was much higher. The former number of chörten which can be found around the site is also remarkable. Today, they are mainly preserved on the north and northwest side of the monastery, next to the river valley, and some have also survived between the newly built houses in the settlement. Three of the large chörten that have the characteristic four stairways on each side, and which are located outside the enclosure of the monastery, are still preserved today. They can be found at different distances to the northeast (100 metres), southeast (390 metres) and southwest (320 metres).[37]

36 VITALI 2003: 53-89.
37 Tucci describes four of these chörten during his visit: *"Outside the enclosure, at the four angles, but at unequal distances, are four great Labàb chortèn (Lha babs mc'od rten), that is to say chortèn which carry on their four sides four staircases; (...). According to what the monks tell us, in the chortèn at the north-west angle would have been preserved the relics of Rin c'en bzań po."* TUCCI & GHERSI 1935: 158; HELLER 2006: 44-49.

Fig. 21 Overleaf: Site plan of Tholing, based on the situation in 2018. The monastery is located on the northwest side of the village. The main square with the directly connected main road lies to the east of the monastery. The access road, which connects the new bridge across the Sutlej with the main road of Tholing today, leads directly along the monastery area. © Neuwirth & Auer, TU Graz 2020.

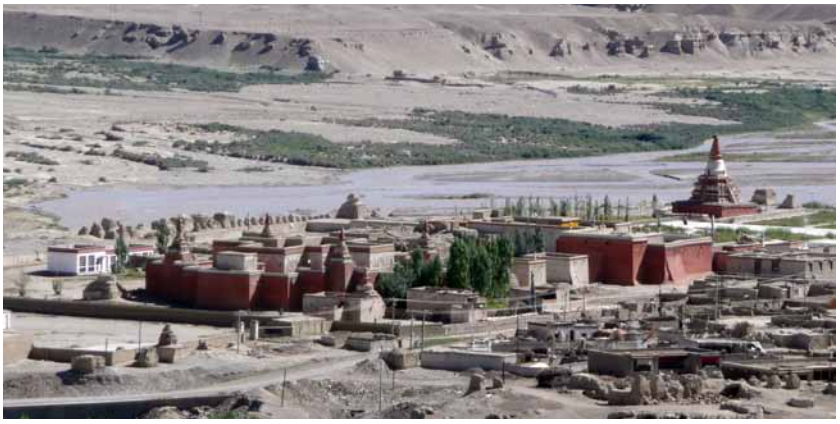
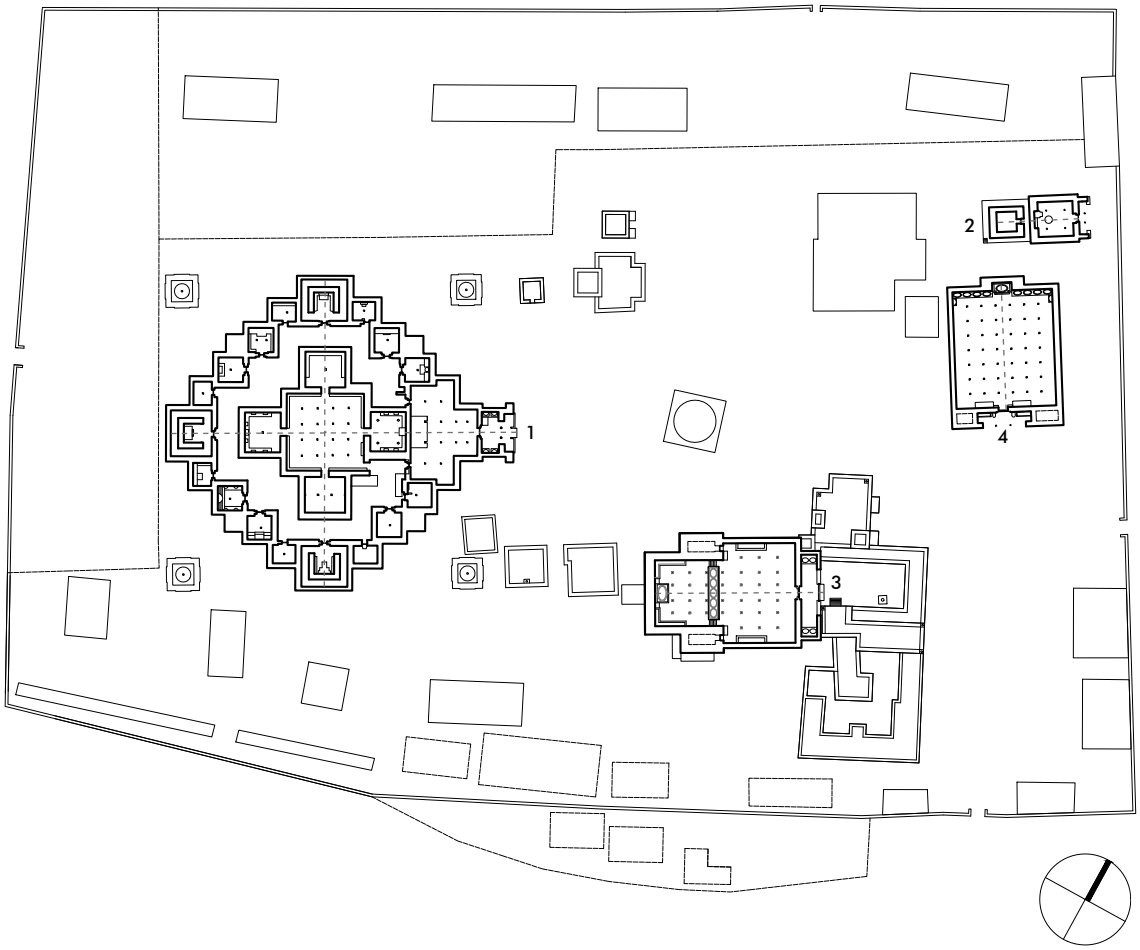
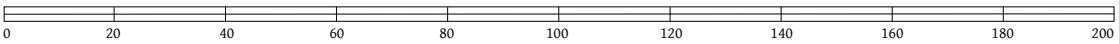


Fig. 22 Southwest view with the Main Temple on the left, and the Red Temple on the right. In the background, the large chörten in the northeast of the walled enclosure is visible. Auer 2007.



1 **THE MAIN TEMPLE** – The Glorious Matchless Self-Perfected Temple (Tib. *dPal dpe med lhun gyis grub pa'i gtsug lag khang)*
2 **THE GOLDEN TEMPLE** (Tib. *gser khang*)
3 **THE RED TEMPLE** (Tib. *'du khang 'dzam gling rgyan*)
4 **THE WHITE TEMPLE** (Tib. *lha khang dkar po*)



The Tholing temples were partially destroyed in the course of the Cultural Revolution between 1966 and 1976. The preserved buildings were listed by the Cultural Relics Bureau of the Autonomous Region of Tibet in 1996. As a result, efforts were made to secure the substance, and restorations were carried out. Today, the extensive complex consists of four temples from different periods and a large number of ruined structures, which are surrounded by a wall that encloses an almost rectangular area of 28,212 square metres. The enclosure measures up to 200 metres along the north-west running wall and 145 metres along the north-east running wall.

Four entrances are located at the cardinal directions of the enclosing wall, but they are not arranged symmetrically. The northeast and southeast portal lead to an open space in front of two of the preserved temples: The Red and the White Temples. A smaller portal gives access from the northwest side to the chos-´khor, and another one has been located on the southwest side since 2012. This didn't exist when we visited the site in 2007. Ghersi´s pictures from 1933 also show an entrance on the southwest side of the wall, in front of the rear side of the Main Temple, which was probably located a little more southward

The Main Temple (1) is a central building which is found on the western side of the enclosed area and dominates the ensemble both due to its size and its complexity. The basic idea of this ensemble corresponds to a mandala. The Main Temple is oriented along a northeast-southwest axis, so the vestibule opens to the northeast. Its main axis deviates 29° counter-clockwise from due east.

The Red Temple (3) is located 28.50 metres east of the Main Temple. Its orientation corresponds exactly to that of the Main Temple, and its vestibule also faces northeast. An open courtyard and a complex of adjoining rooms extend in front of the vestibule today.

The White Temple is found 16.70 metres northeast of the Red Temple and, respectively, 79 metres from the Main Temple (4). It is oriented along a northwest-southeast axis, so the vestibule faces southeast. The main axis deviates 59° clockwise from due east and this orientation is consequently almost orthogonal to the orientation of the Main Temple.

The remains of the Golden Temple (2) are located immediately behind and 6.20 metres away from the back wall of the White Temple. Today, it consists of a small, single-storey room with a separate temple built in front of it and only 1.00 metre away from the east side. Both entrances are oriented toward the northeast as are the entrances of the Main Temple and the Red Temple.

Fig. 23 Overleaf: Site plan of the monastic complex with the floor plans of the preserved temples of Tholing, in between small chapels and ruins of former buildings are located. The surrounding wall shows the border of the area after the straightening in the course of the road extension. The dashed lines show the previous course of the wall and some structures next to the southeast wall that were demolished. New residence buildings were erected in the northwest periphery. © Neuwirth & Auer, TU Graz 2020.

Fig. 24 One of the monumental chörten which were erected outside the monastery of Tholing. E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 25 The sacred compound of Tholing seen from the southwest mountain range. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 26 The portal in the surrounding wall on the southwest side of the Main Temple. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 27 The open space in front of the vestibule of the Main Temple. The former central lantern with a golden roof can be identified on the roof of the Main Temple. Govinda expedition 1947-49. Li Gotami, in GOVINDA 1969: 368.

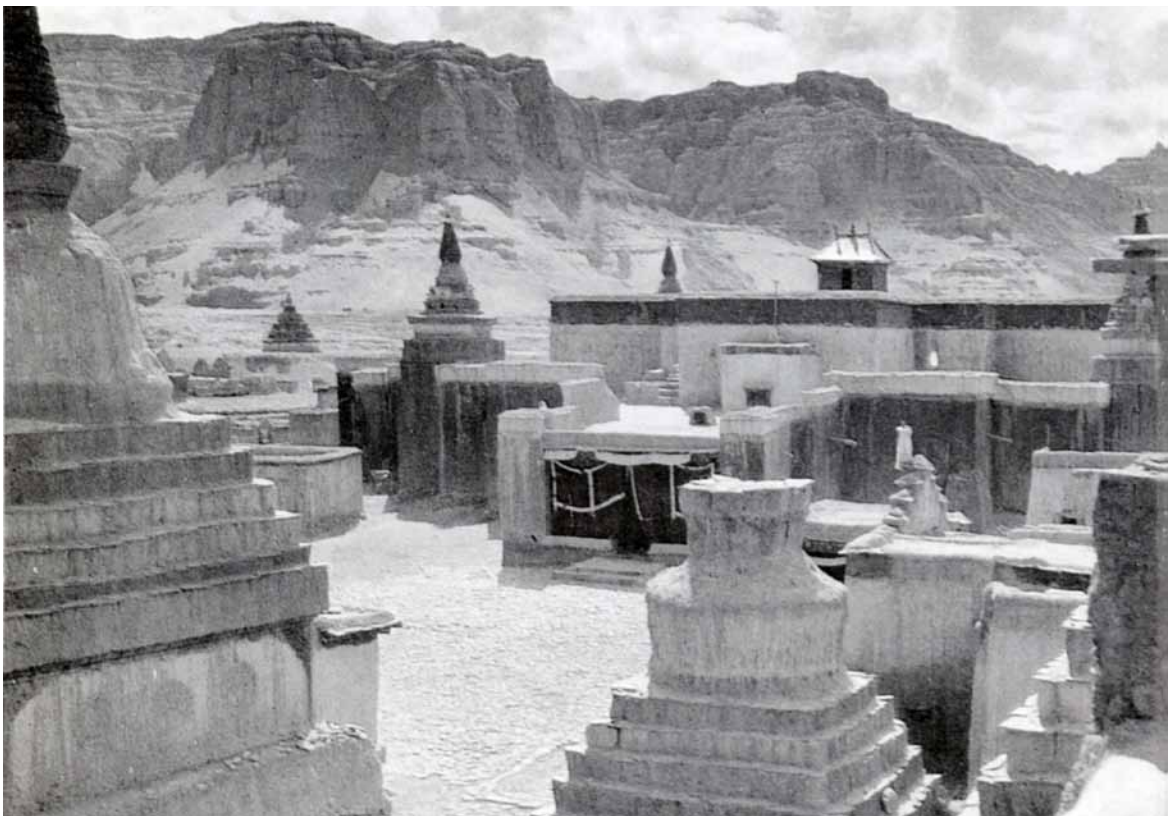


Fig. 28 The buildings inside the chos-´khor, which give a clear impression of the former density of the entire complex. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

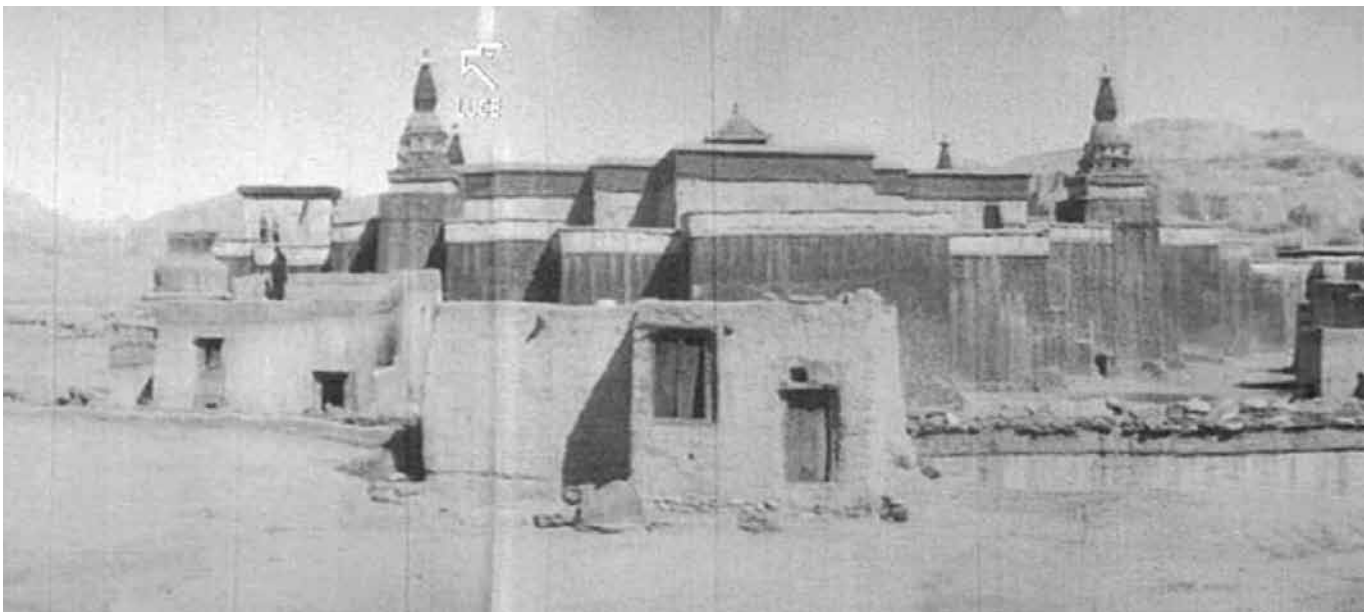


Fig. 29 West view of the Red Temple. In the front, you can see the northern façades of the Main Temple. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

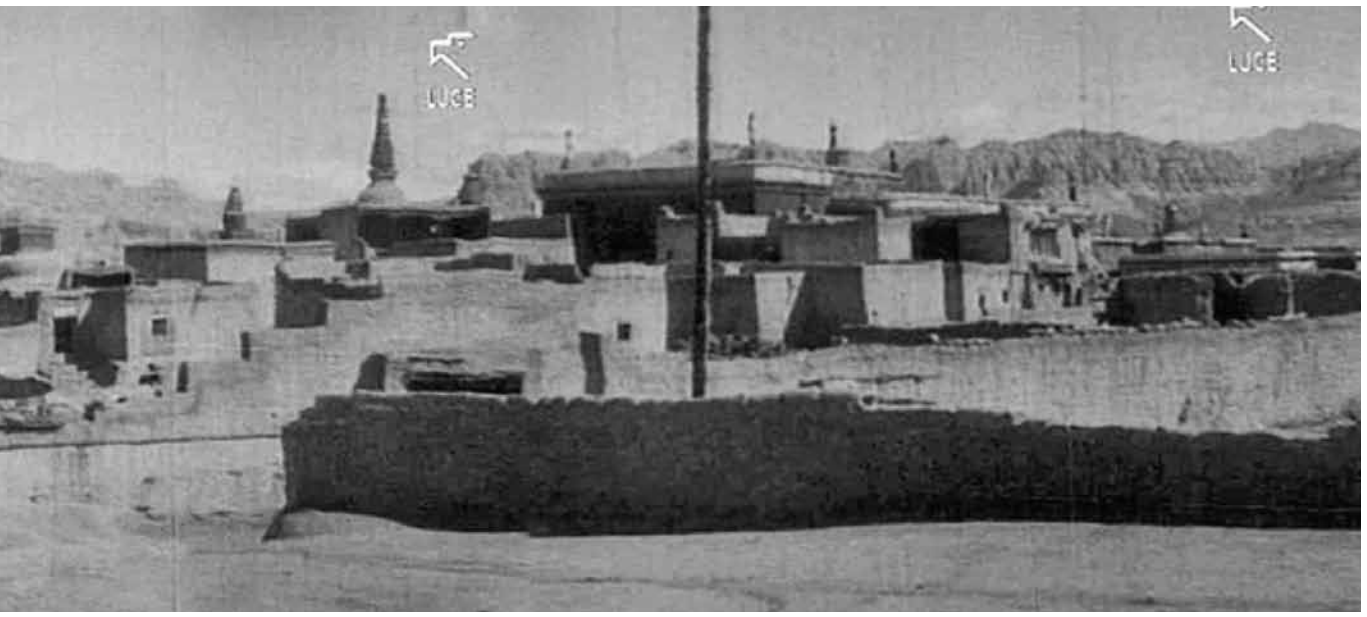


Fig. 30 South view of the monastery of Tholing. Left: the Main Temple. Right: the Red Temple, partly hidden behind the residential buildings. Photomontage from Ghersi´s documentary film, Istituto Luce 1934. In NALESINI 2019: 263.

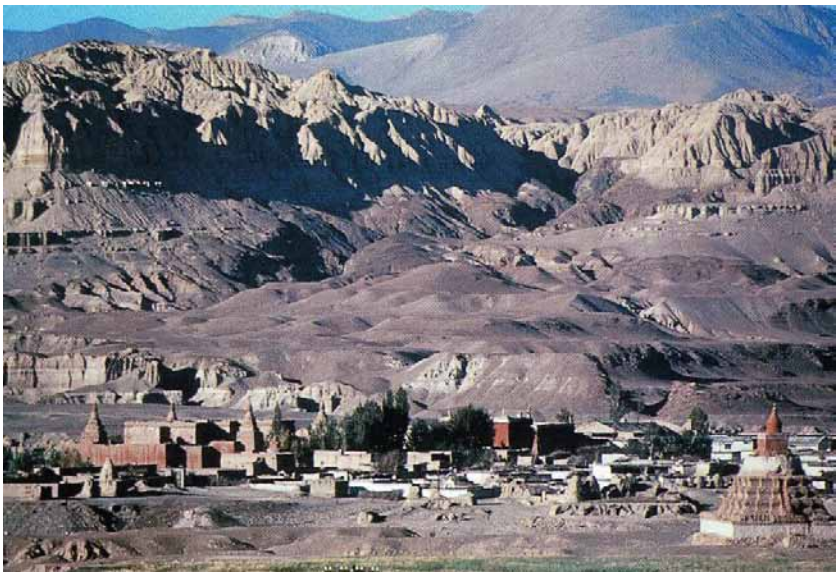


Fig. 31 General view of the monastic complex, as seen from southwest. Luczanits 1993.

Fig. 32 The Main Temple from southwest. Between 1980 and 1993, hardly any changes can be seen in the buildings from the outside, but one can assume that above all the inner structure has suffered from the exposure. Luczanits 1993.

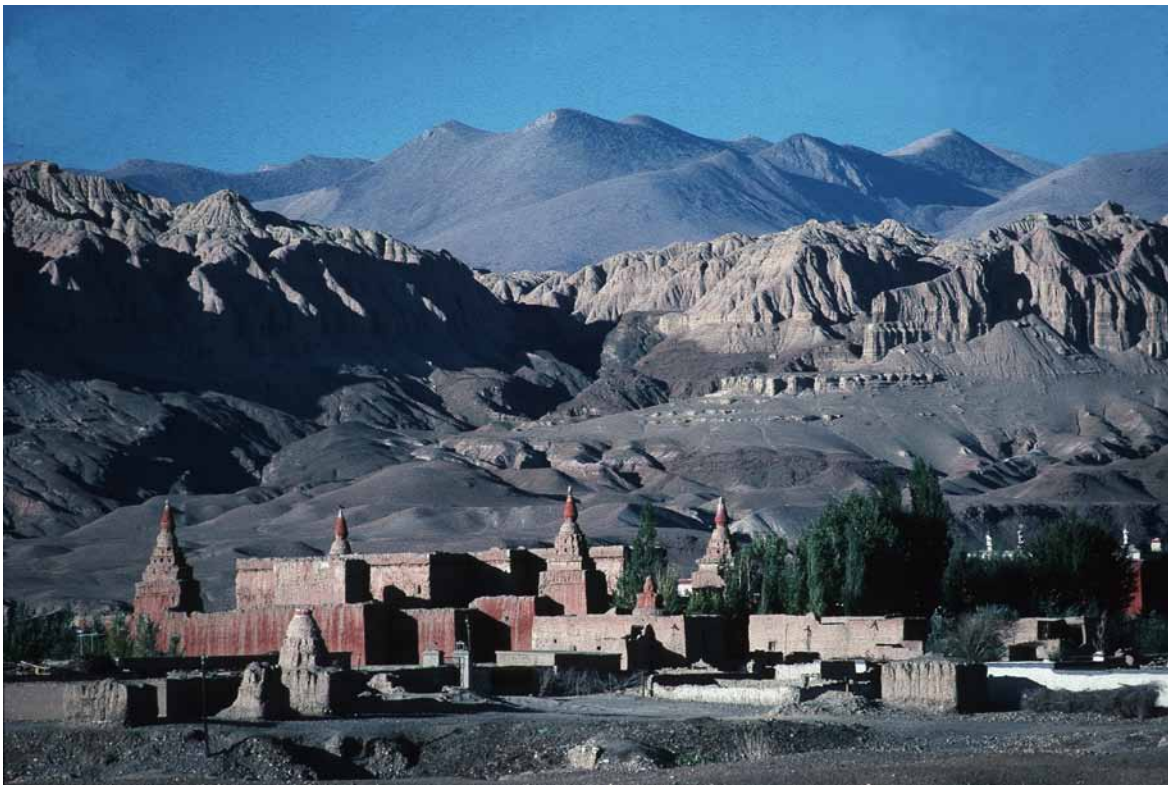


Fig. 33 The Main Temple of Tholing, as seen from southwest, where today the main road passes. Gerner 1980.

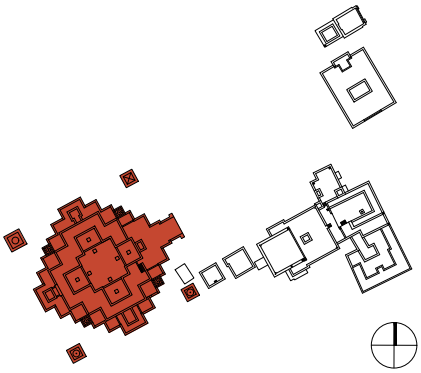
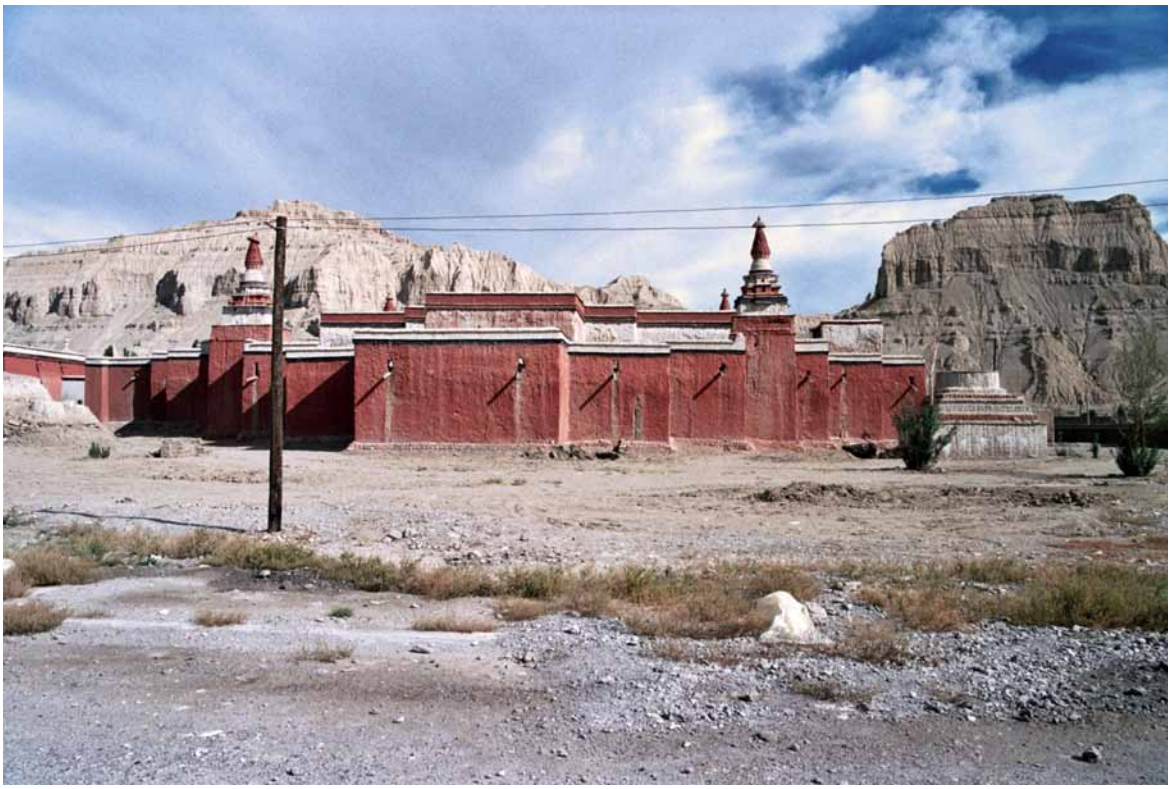


Fig. 34 North-western view of the Main Temple with the higher walls of the white-washed inner core and the red painted outer ring of chapels with the four tower-like chörten at the corners of the building. Neuwirth 2007.



THE MAIN TEMPLE

The earliest building at Tholing was established on the Luminous Plain (Tib. *thang gi 'od*) in 996. The identity of the founders could be revealed thanks to early written sources which explains how the royal monk Yeshé Ö established the Tholing monastery with the help of the Great Translator Rinchen Zangpo. In the dragon year of 1028, the consecration of the *Glorious Matchless Self-Perfected Temple* was performed by carrying out an ostentatious ceremony; this was four years after Yeshé Ö died of old age.[38]

The Main Temple of Tholing (Tib. *dPal dpe med lhun gyis grub pa'i gtsug lag khang)* has an exceptional size and architectural design. The layout is organised around a central cruciform chapel composed of five rooms. An unroofed corridor that encloses the core of the edifice allows access to a ring of seventeen separate chapels, which are arranged symmetrically around the centre. In parallel with the height of the rising walls, the two parts of the complex also contrast with each other in colour: The walls of the higher inner core are painted white, and those of the lower, outer chapel ring are painted red, while the colour changes accordingly to red or white in the area of the attic.

The main axis of the building is oriented from southwest to northeast, so the vestibule faces northeast. Four red chörten were erected at the intermediate points of the central axes and structurally connected to the ring of chapels. Facing the same direction, four larger but lower white chörten were erected outside the temple. If one encloses the outer façade with a square, the sides of which run in parallel to the main axes, the position of the four white chörten can be exactly determined.

The picture and film documents of the Tucci expedition in 1933 and the Govinda expedition in 1947-49 show the Main Temple before its destruction in the course of the Cultural Revolution between 1966 and 1976. Photo material from the 1980s and 1990s show the temple in a ruinous state and exposed to the weather; the wall paintings and interior decoration had largely disappeared or had already been severely damaged. A restoration project sponsored by the Cultural Relics Bureau of the Autonomous Region of Tibet took place from 1994 to 1999.[39] In the course of the project, the chapels were excavated, the preserved brickwork were supplemented and the pillars, ceilings and roof areas were newly erected.

38 VITALI 1999: 101-107.
39 For a description of the pre-restoration condition of the temples see LUCZANITS 1996: 76-77.

Fig. 35 The north-eastern view of the Main Temple with its entrance. Auer 2007.

Fig. 36 The eastern view of the Main Temple. Behind the vestibule, which faces to the northeast, the whitewashed attic above the roof of the inner structure is visible. Auer 2007.

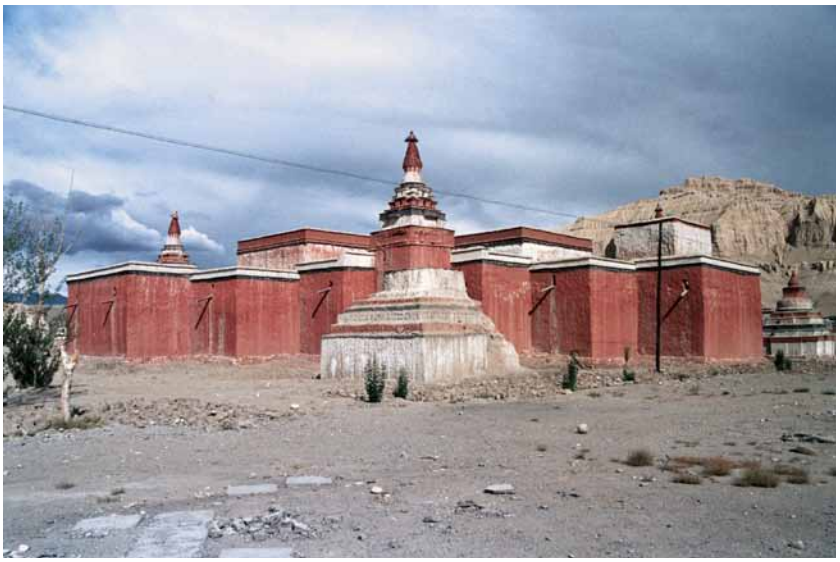
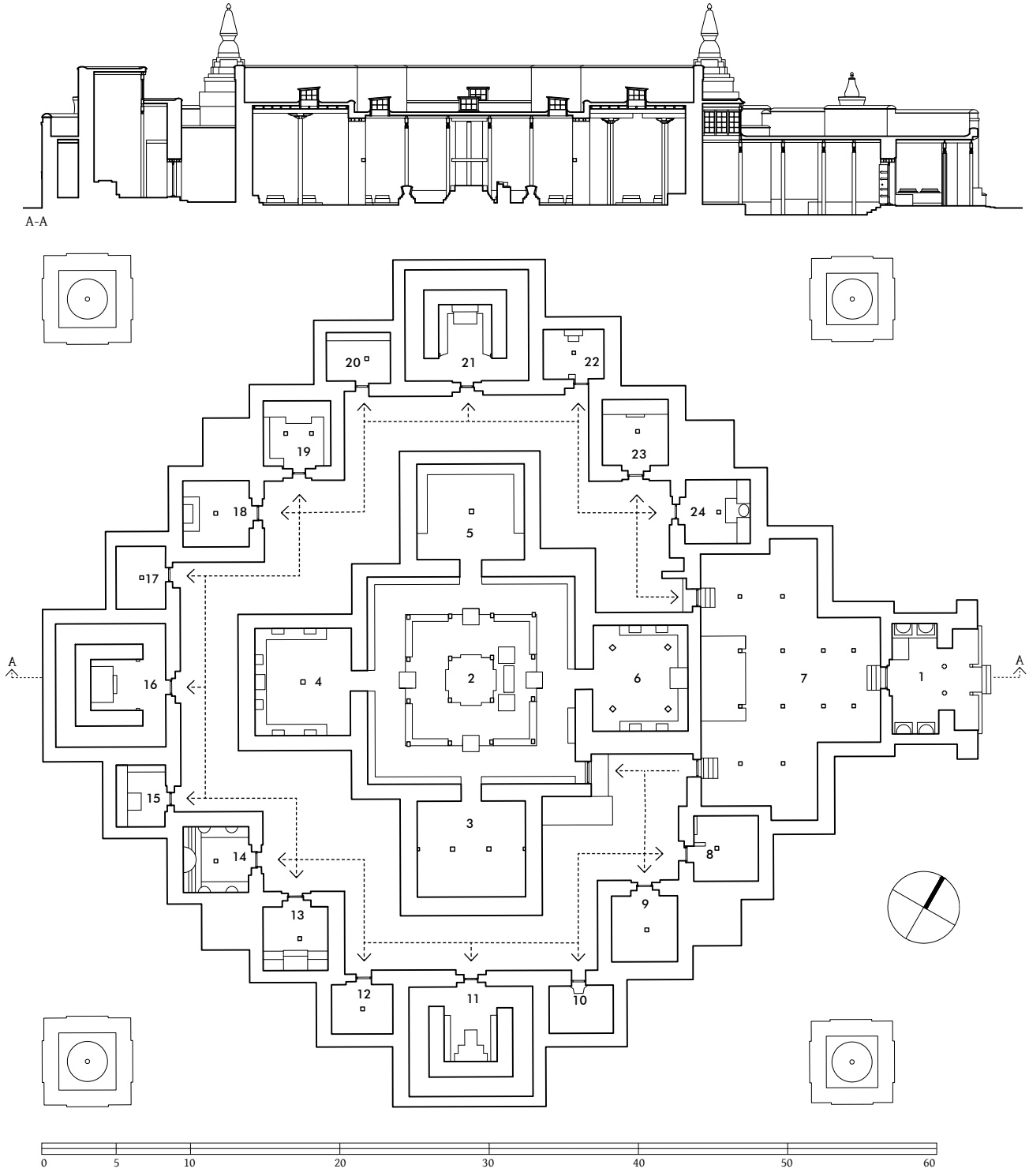


Fig. 37 The north-western view of the Main Temple with the remains of one of the four chörten, which were erected at the intermediate cardinal directions outside the structure. Neuwirth 2007.

Fig. 38 The west part of the Main Temple with its two chörten on the northwest and southwest side. Neuwirth 2007.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The dimensions of the Main Temple are remarkable. The complex comprises a total of 24 rooms, which consist of five chapels in the inner core, 17 circularly arranged chapels, an assembly hall and a vestibule. The main axis of the temple measures 62.66 metres, and the axis orthogonal to this main axis is 56.77 metres long. The wall thicknesses of the rising walls vary between 0.90 and 1.40 metres. The entrance to the temple faces northeast, where an open vestibule with a width of 7.40 metres and a depth of 5.71 metres leads into the temple. Lateral wall pillars and two additional pillars are found in the front area, through which the vestibule can be entered . Gatekeeper pedestals have been preserved on both side walls. The entrance door to the assembly hall is located in the middle of the southwest wall.

The front part of the assembly hall is 8.38 metres wide and expands in the rear part to a width of 18.90 metres, while its total depth is 12 metres. The ceiling of this hall is supported by 12 pillars, which are positioned in two rows in the front part and then into four rows in the back part of the room. At the rear of the hall, a figure pedestal is situated. Two doors are located to the right and left of the pedestal, which lead to the inner circumambulation path. This circumambulation path is in the form of an unroofed corridor, providing access to the central cruciform structure as well as to the seventeen separate chapels, which are arranged around the centre. The width of the corridor varies between 3.68 and 5.95 metres.

The entrance to the inner cruciform building part is located in the east corner of the central room. The inner room has a side length of 13.90 metres and forms the inner centre of the structure. A total of sixteen pillars, organised in four rows of four pillars each, support the wooden ceiling of the room. At one time, a central lantern with a golden roof provided interior lighting, and a four-fold Vairocana sculpture was once placed in the centre, but only the cross-shaped throne remains to this day.[40] Today, the central room is lit by four symmetrically arranged skylights, which are located in front of the entrances to the four side chapels. These four chapels are arranged along the main axes of the central room. Each of the chapels is 7.20 metres wide and 6.40 metres deep. Benches and pedestals, upon which the figures were once placed, have been preserved along the walls. The construction of the supports and wooden beams is designed differently in each of the side chapels. In the northwest and southwest chapels, the ceiling construction is supported by only one central pillar. In the southeast chapel, two pillars are positioned in a middle row. In the northeast chapel, two rows of two pillars support the ceiling. In the ceiling of each chapel, there is a central skylight which allows light to enter the room.

Fig. 39 Overleaf: The ground plan with the corresponding longitudinal section of the Main Temple showing the room structure of the five chapels in the inner core and the 17 circularly arranged chapels as well as the assembly hall and the vestibule. The plan of a central cruciform chapel composed of five rooms corresponds to the later tradition, which attributes these rooms to the five Tathāgatas of the Yogācāra tradition with Vairocana residing in the centre, Akṣobhya in the east, Ratnasaṃbhava in the south, Amitābha in the west, and Amoghasiddhi in the north. Likewise, the inner chapels, the 17 outer chapels once encompassed a great variety of images and were often the religious loci of a particular cult devoted to a Buddha, a Bodhisattva, or a deity. The longitudinal section is assigned to it. © Neuwirth & Auer, TU Graz 2020.

1 sGo.khang
2 rNam.par snag.mdzad lha.khang
3 Mi.skyod.ba lha.khang
4 Rin.ʼbyung lha.khang
5 Ód.dpag.med lha.khang
6 Don.yod grub.pa lha.khang
7 ʼdu.khang Thub.dbang bDud. ʼdul.ma
8 ʼJigs.byed lha.khang
9 lTung.bshags lha.khang
10 lha.khang bKra.shis ód.ʼbar
11 sMan. lha.khang
12 Thugs.rje lha.khang
13 sGrol.ma lha.khang
14 rGyal.ba Rigs.Inga lha.khang
15 bSrung.ma.khang
16 Byams.khang
17 Phyag.rdor lha.khang
18 Byams.pa ngal.gso lha.khang
19 Bla.ma lha.khang
20 Yum.chen.mo lha.khang
21 Tshe.dpag.med lha.khang
22 ʼJigs.brgyad lha.khang
23 gSung.chos lha.khang
24 ʼJam. dbyangs lha.khang

Denotation according to VITALI 1999: Plate VII.

40 This former lantern can still be identified on photographs of Li Gotami Govinda (see Fig. 27).

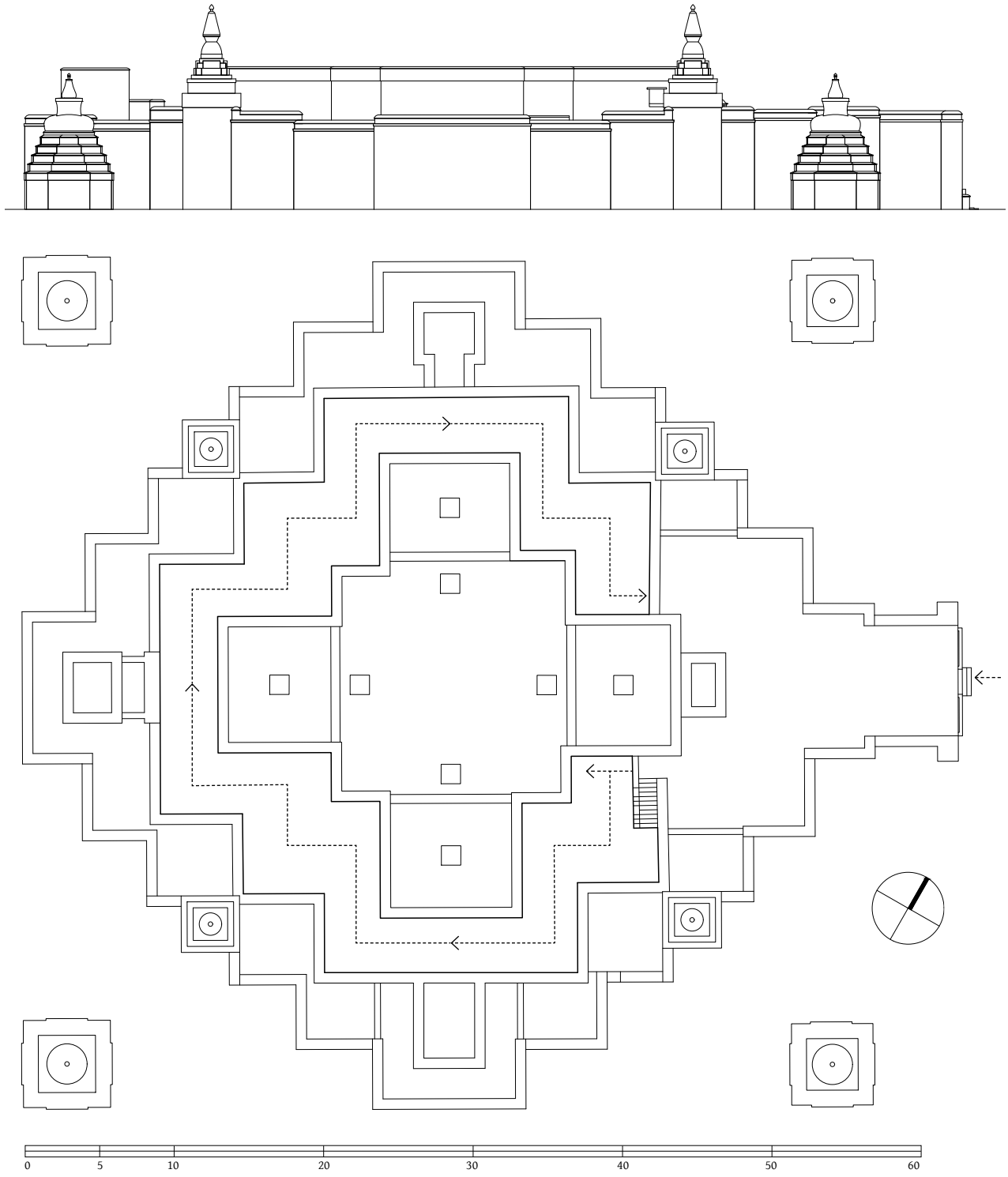
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Fig. 40 Overleaf: The southeast elevation of the Main Temple. Below the roof plan of the Main Temple, showing the unroofed corridor between the inner core, the circularly arranged outer chapels, as well as the renewed skylights on the roofs. © Neuwirth & Auer, TU Graz 2020.

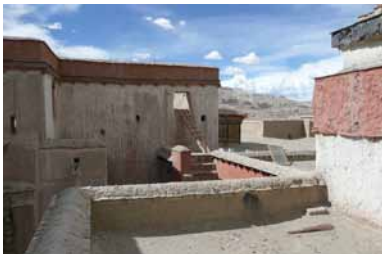


Fig. 41 Left: The south-eastern part of the corridor with the entrances into one of the seventeen chapels, which are arranged around the centre. Right: The southern part of the corridor with the entrance to the south-western chapel in the rear. Auer 2007.

Fig. 42 Left: The eastern part of the roof with the wall opening, which gives access to the roof above the central complex. Right: Southern part of the roof with one of the chörten in the corner above the chapel ring and the higher lantern above the chapel opposite the vestibule. Auer 2007.

Fig. 43 Left: The unroofed corridor between the inner core and the seventeen circularly arranged chapels, where the door of the assembly hall is located. The staircase next to it leads to the roof above. Right: The entrance to the central room of the cruciform structure, which forms the core of the complex. Auer 2007.

Fig. 44 The assembly hall of the Main Temple after the excavation of the original floor level before the restoration. On the rear wall, halos and beam holes allow clear conclusions to be drawn about the size of the main figure and the height of the lantern and ceiling construction. Zong Tong-Chang, in NAMGYAL 2001: 78.

Fig. 45 Central core of the structure with the remains of the throne before the restoration. The parts of the pedestals on the side walls and in the centre of the temple that were buried under the layer of earth, show both well-preserved reliefs and parts of the former painting. Zong Tong-Chang, in NAMGYAL 2001: 85.

Fig. 46 The remains of the cross-shaped throne that once placed a four-fold Vairocana sculpture in the centre. The original position of the wooden pillars in the Main Temple cannot be reconstructed from the few photos available, as no traces of the pillars can be seen. The basis on which the construction was positioned during the restoration remains uncertain as well. Zong Tong-Chang, in NAMGYAL 2001: 85.

The sizes of and the equipment in the outer chapels vary. The three chapels located along the main axes are the largest, with dimensions of 8.30 metres wide and 7.40 metres deep. Two smaller chapels were attached to each side of these larger chapels, with widths ranging from 4.20–4.30 metres and depths, from 3.20–3.30 metres. In between these three groups and the assembly hall, two approximately square, smaller chapels are found, with side lengths ranging between 4.30 and 4.50 metres in each of the four middle sections. Some of the smaller chapels have a pillar that supports the ceiling, and one ceiling is supported by two pillars.

The three large chapels in the main directions are supported by inner walls, forming an ambulatory around the centre. The chapel on the southwest side, which is positioned opposite the vestibule, is equipped with a lantern suspended above the ceiling. This lantern consists of a brick top in the roof area and is, therefore , higher than the other two.

Fig. 47 Left: The former interior decoration in the north-west main chapel (No 21). Four Bodhisattvas flanking the central Amitayus on each side. Above: the four Bodhisattvas on the right. Below: the four Bodhisattvas on the left. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 48 Right: The central image of Amitayus in the north-west main chapel (No 21). The composition corresponds to 13th century depictions in the painting (see Luczanits 2004: 281-288). Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

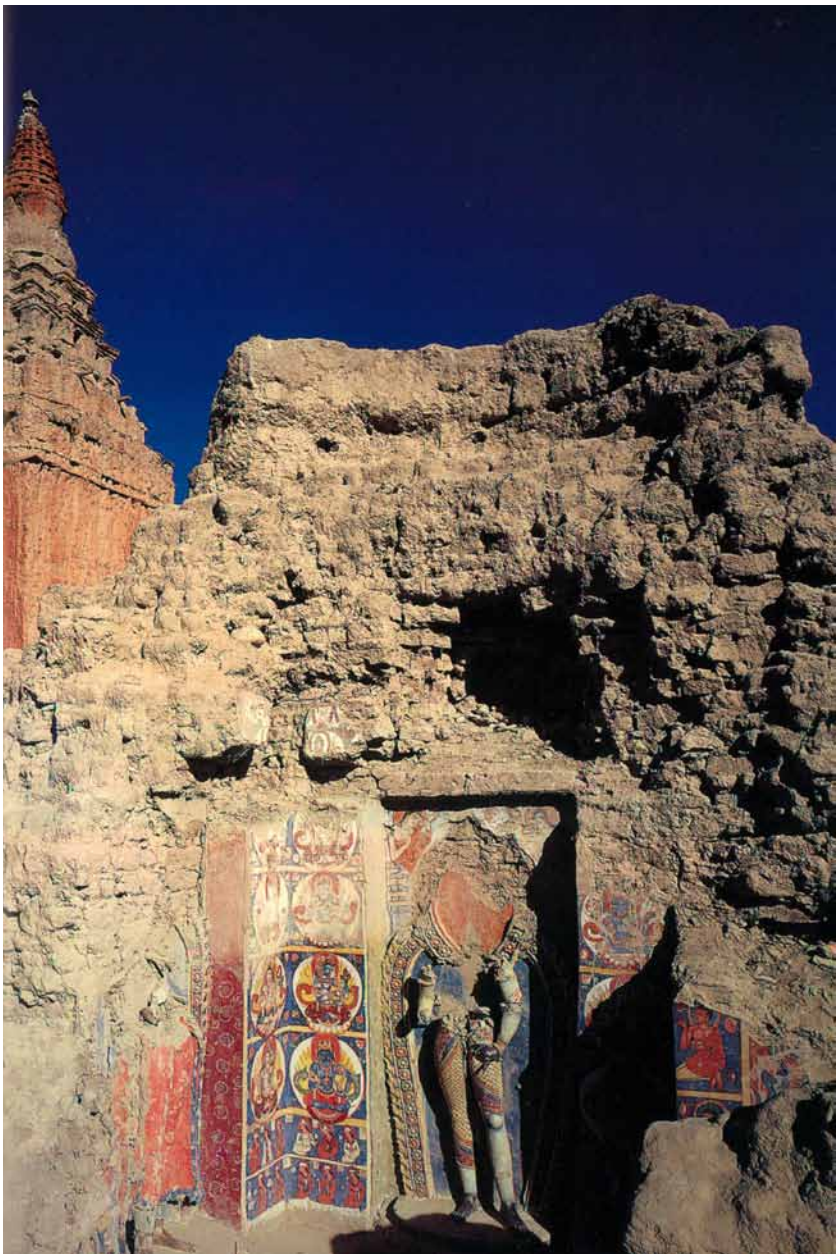


Fig. 49 Interior of the north-west chörten outside the Main Temple. In the course of the renovation, the chörten was closed again. Zong Tong-Chang, in NAMGYAL 2001: 127.

Two of the four chörten which were erected at the intermediate cardinal points have distinctive, artistic features, suggesting that these structures were created in the early construction period. Today, remnants of wall paintings show that the artistic compositions in these chapels were not only realised at different times but were also subject to restoration work during the 13th to the 16th centuries.[41]

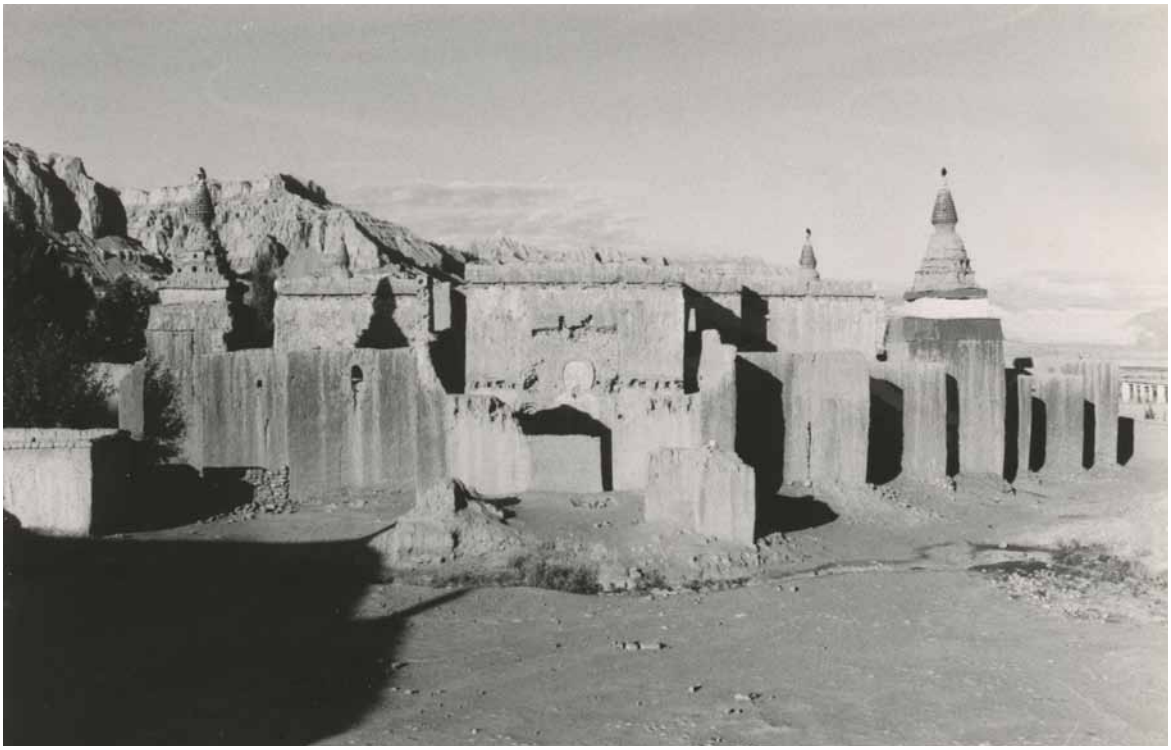
The different heights of the various spatial zones within the temple, which range from 6.60 meters to 9.60 meters, including the attics, are clearly visible from the outside and reflect the iconographic hierarchy of the interior. Based on the building survey, the original support positions and the geometric principles of the structure could be examined (see page 351 and page 369).

41 LUCZANITS 1996: 76-77 and 2004: 30-32.

Fig. 50 The remains of two standing images in the niches of the north-west chörten. The gilded image of Buddha Sakyamuni on the left and the Bodhisattva Vajrasattva in the niche to his right reveal numerous technical details. Zong Tong-Chang, in NAMGYAL 2001: 128-129.

Fig. 51 View of the mandala-shaped Main Temple in a ruinous condition before its restoration. Behind the chörten, you can see the raised lantern wall of the main chapel of the outer ring to the southwest. Luczanits 1993.

Fig. 52 Northeast view of the Main Temple with the fragments of the assembly hall and the vestibule. The beam holes in the wall show traces of the construction above the vestibule. Luczanits 1993.



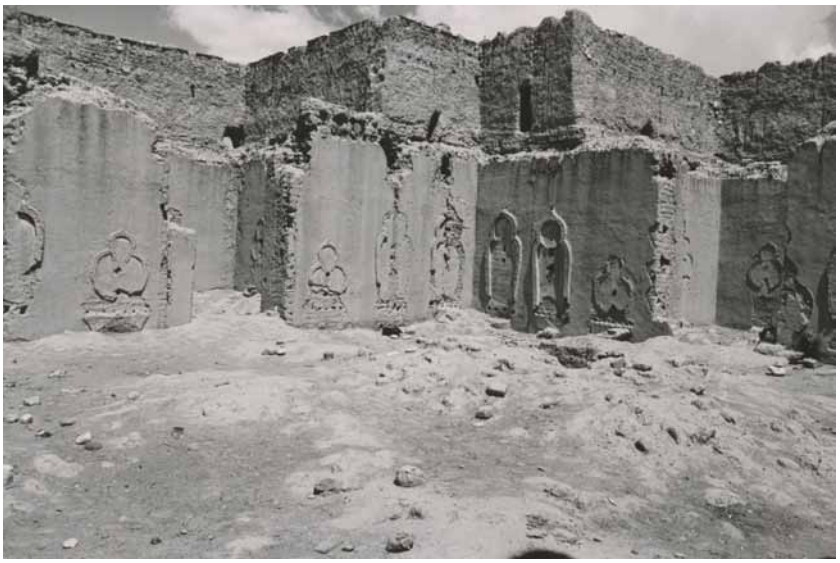


Fig. 53 The central room of the Main Temple with the entrance in two of the four main chapels. The different wall surfaces and the beam holes show the previous construction of the ceilings. The floor was buried up to one metre high before it was uncovered. Luczanits 1993.

Fig. 54 One of the side walls in the central room with the remains of the halos and pedestals. Six figures were positioned on each wall, so 24 figures in total were arranged along the side walls of the room. In the middle, the remains of the central throne are visible, which were uncovered during the later excavations. Luczanits 1993.

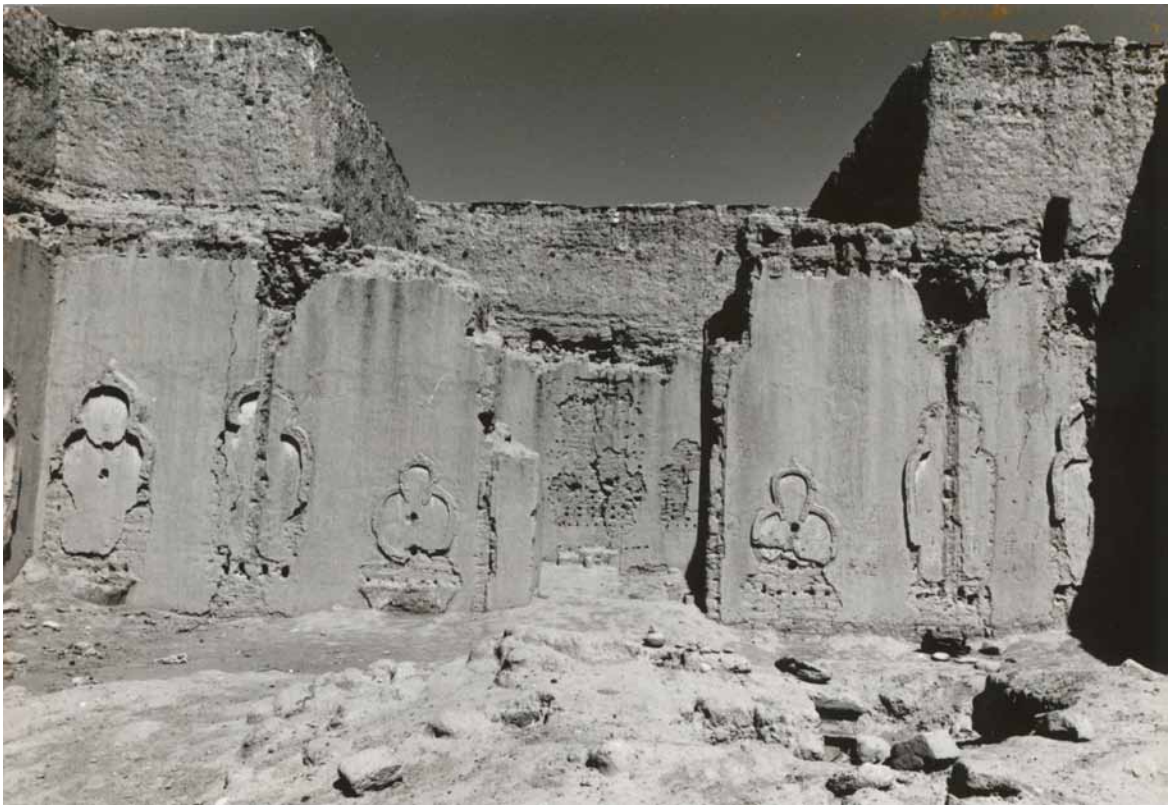


Fig. 55 Spatial representation of the Main Temple. Bird´s eye view from the northwest and south. © Neuwirth & Auer, TU Graz 2020.

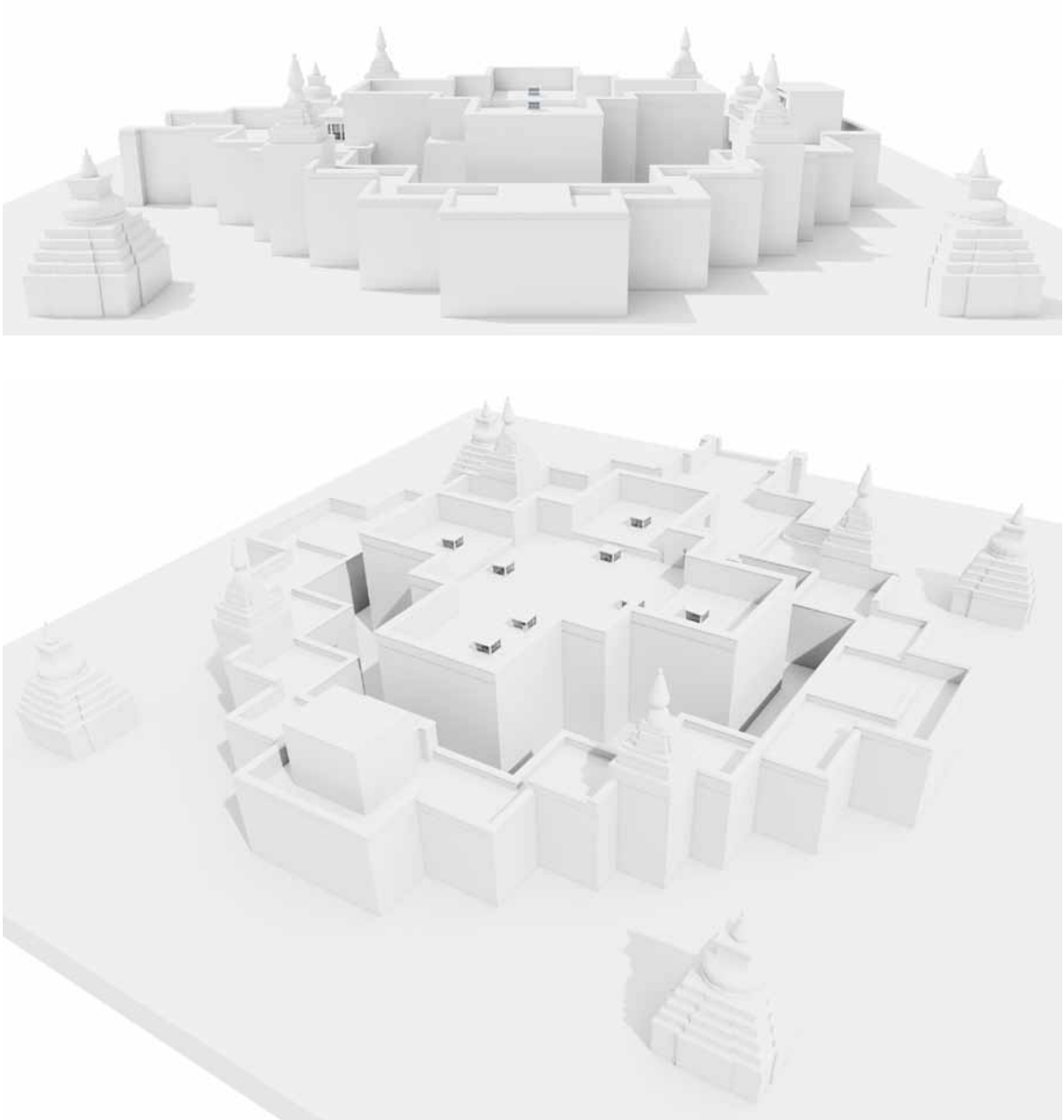


Fig. 56 Frontal view from the northeast and bird´s eye view from north. © Neuwirth & Auer, TU Graz 2020.

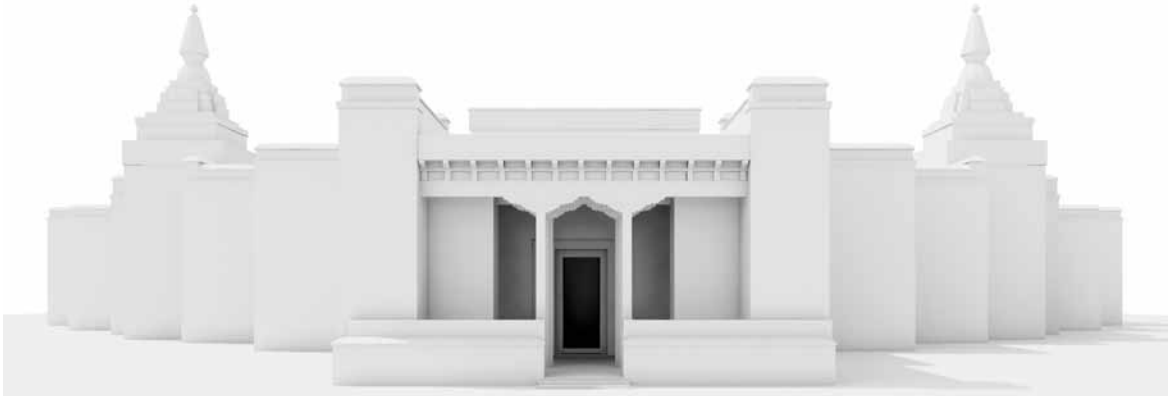
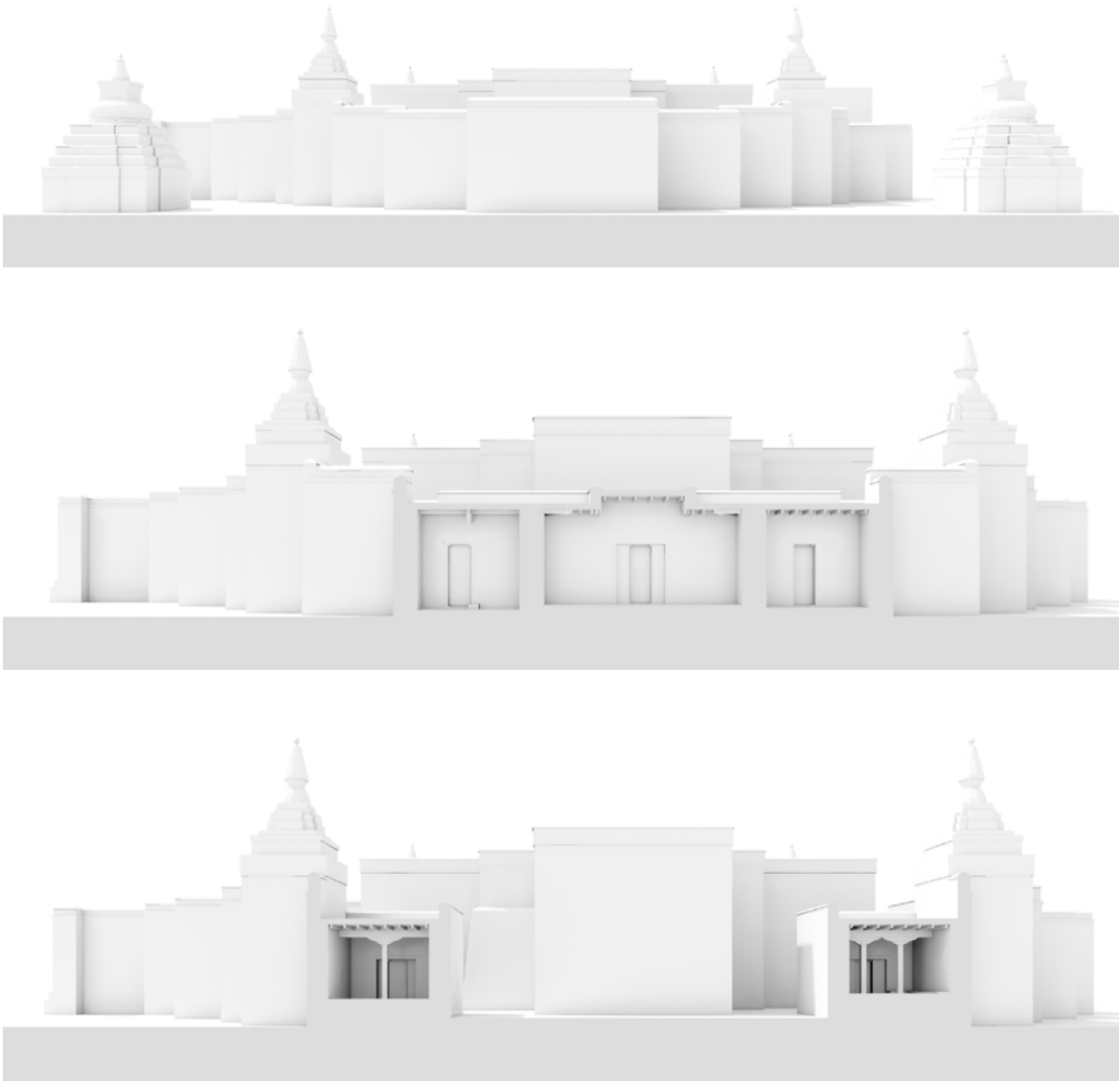


Fig. 57 Spatial representation of the Main Temple. Above: the northwest elevation. Below: two longitudinal sections of the outer ring of chapels. © Neuwirth & Auer, TU Graz 2020.



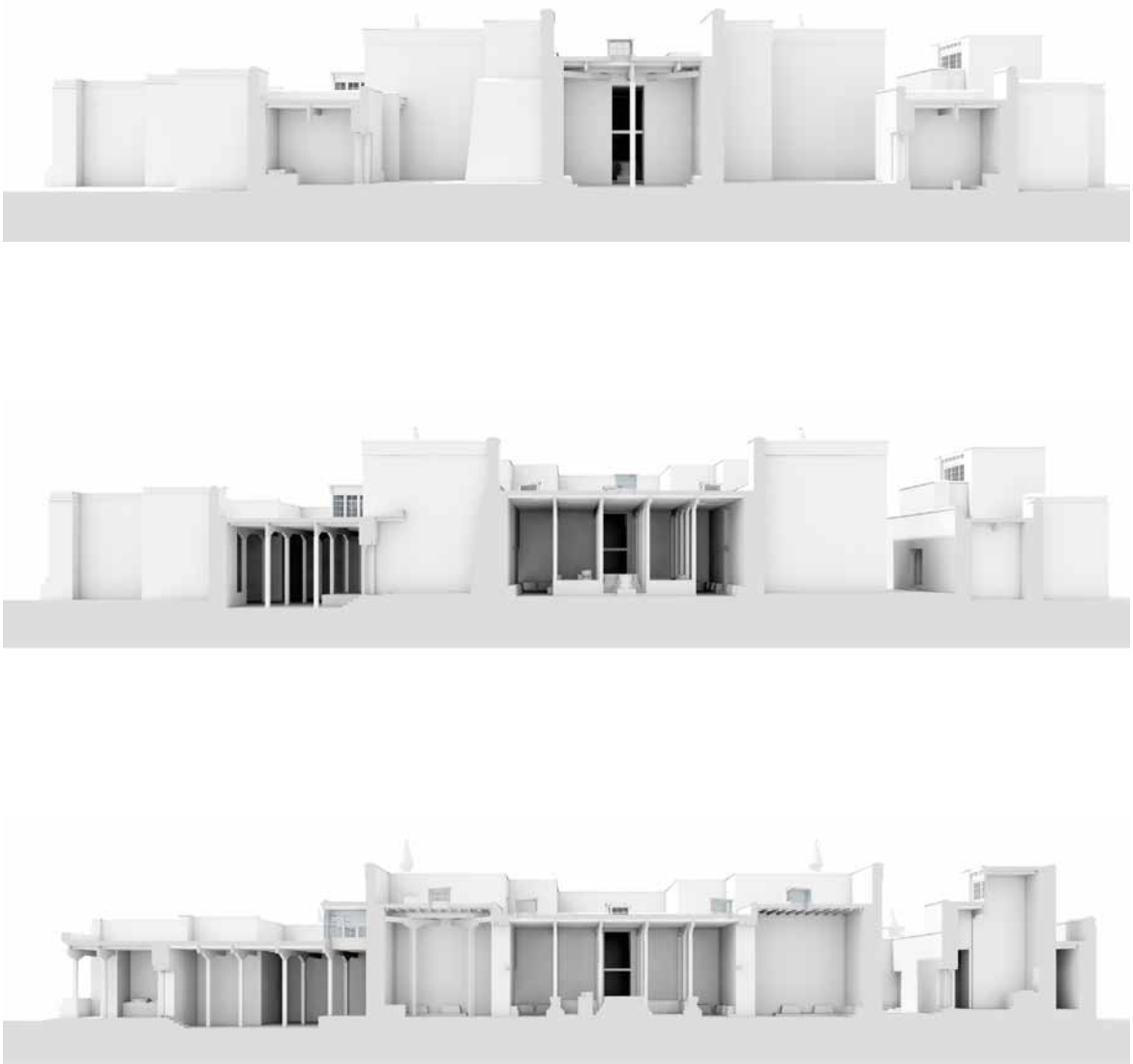
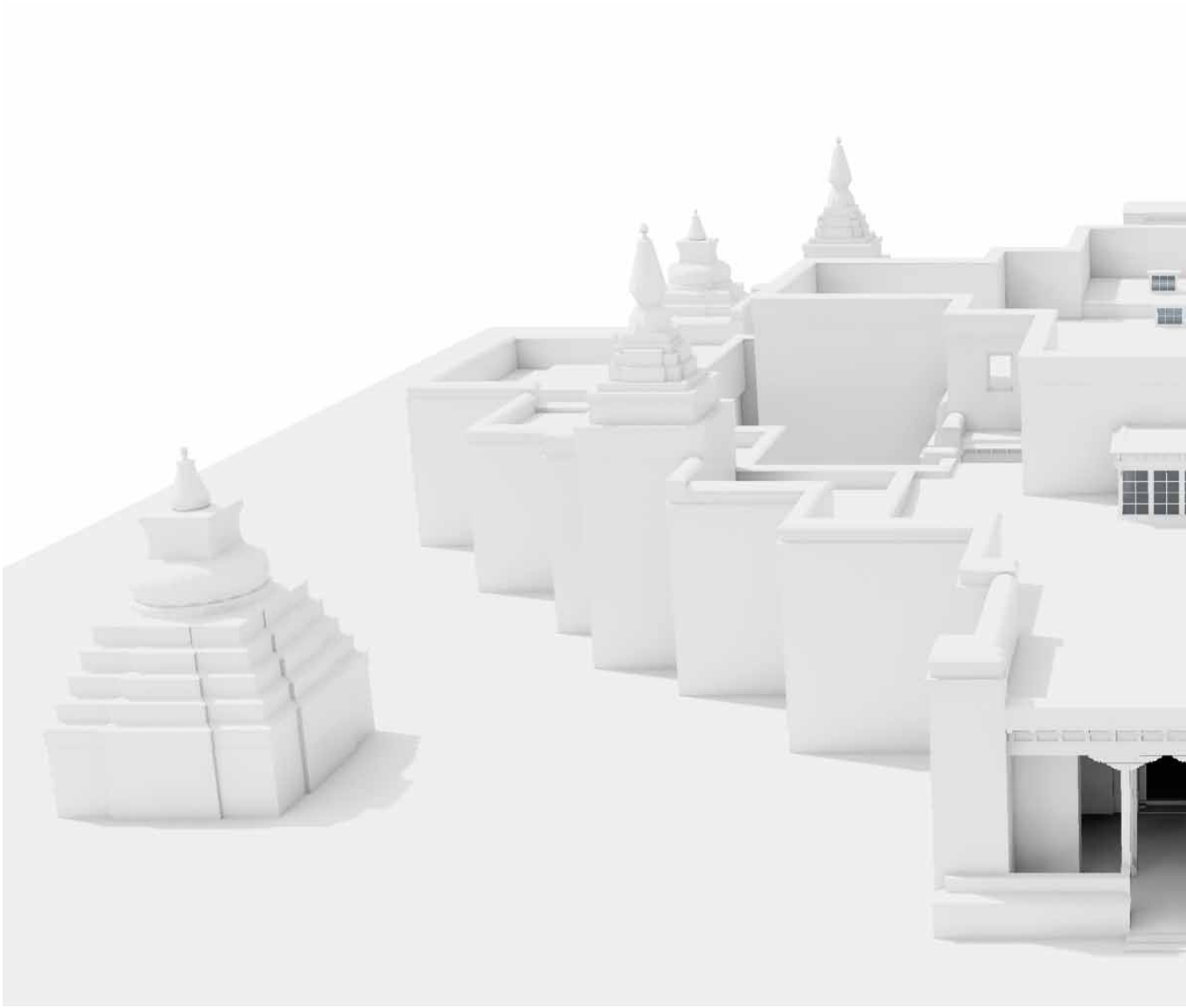
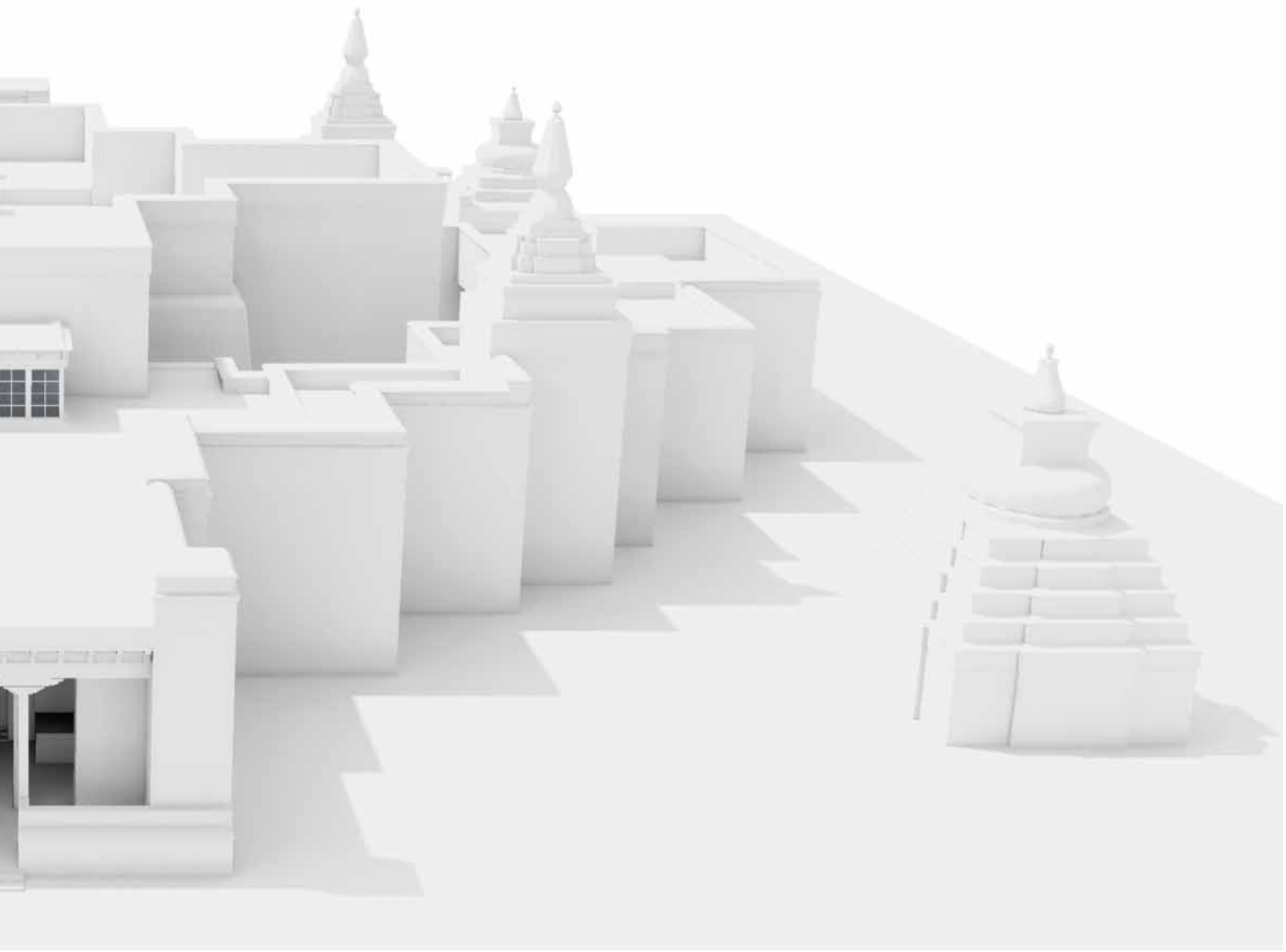


Fig. 58 Spatial representation of the Main Temple. The section above shows the northwest side chapel of the inner core. The section in the middle shows the central room and the assembly hall. The section below shows the rooms along the main axis of the temple. © Neuwirth & Auer, TU Graz 2020.

Fig. 59 Spatial representation of the Main Temple. Bird´s eye view from the northeast. © Neuwirth & Auer, TU Graz 2020.





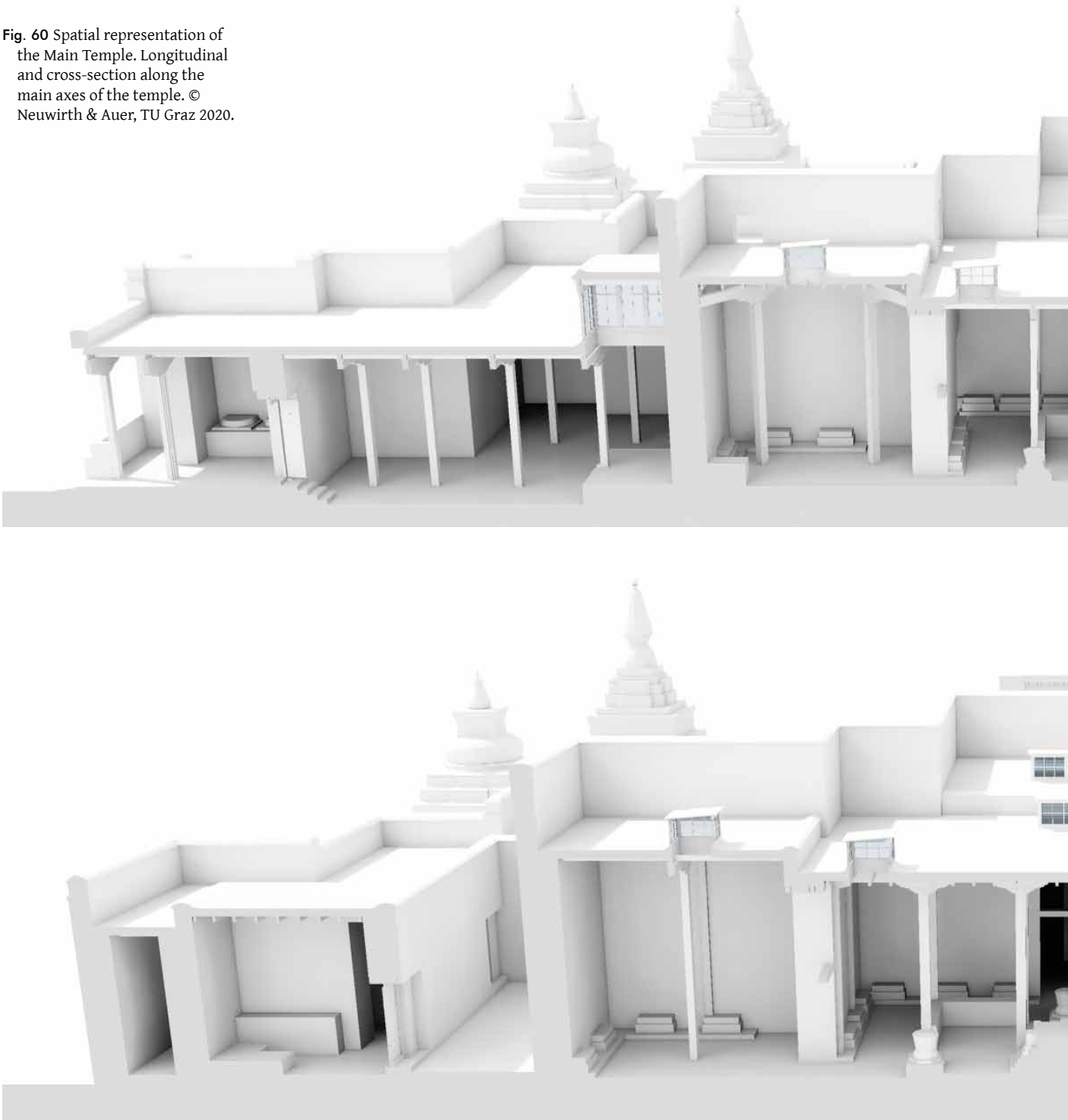
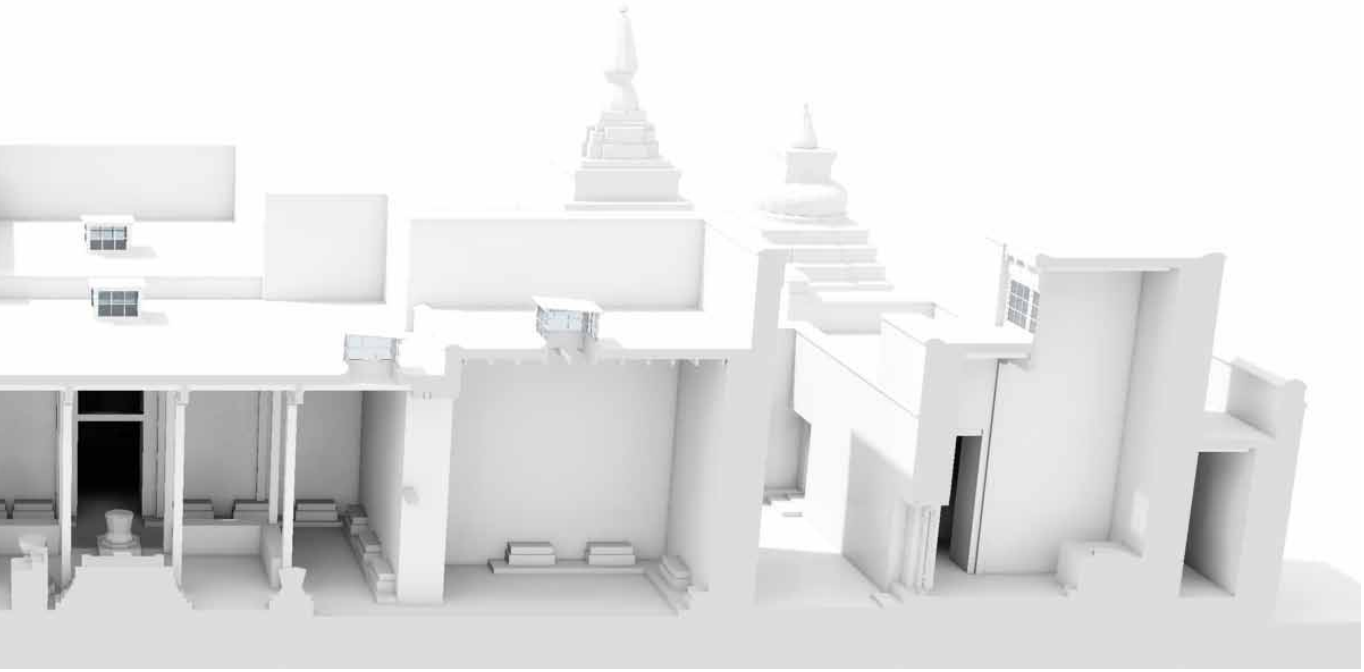
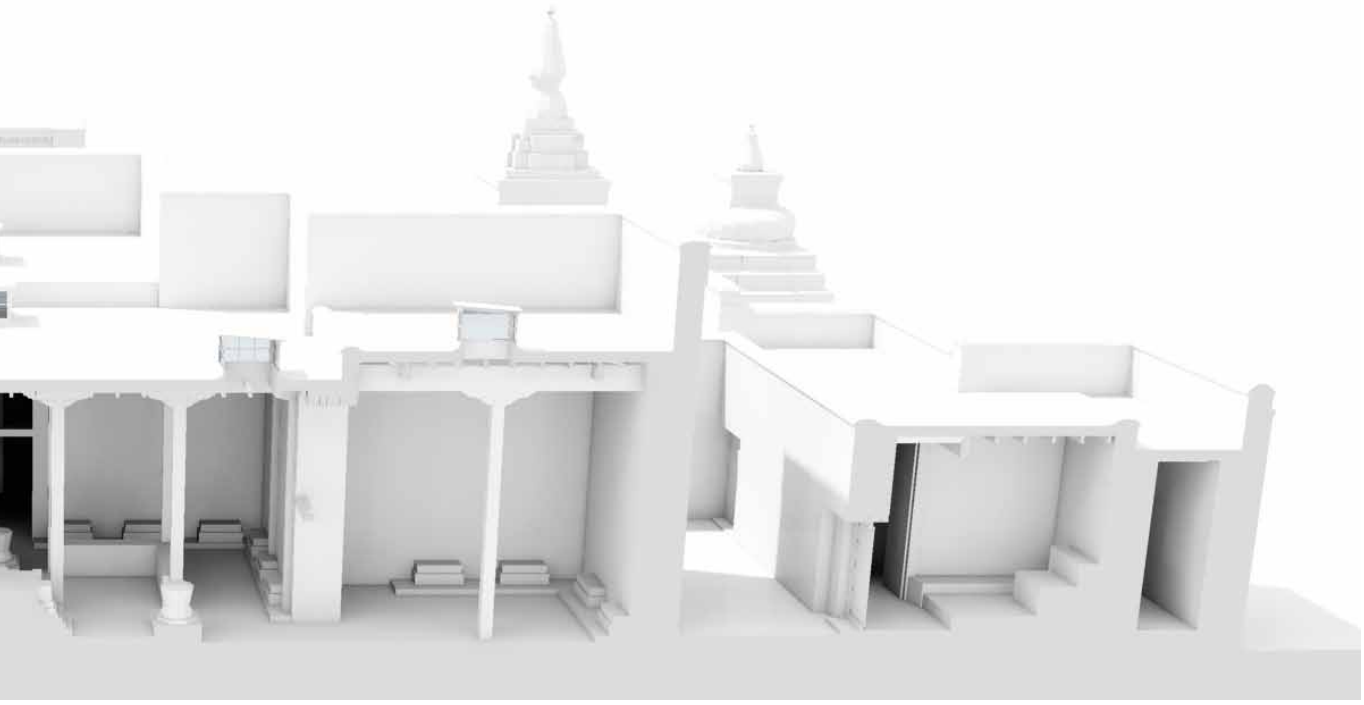


Fig. 60 Spatial representation of the Main Temple. Longitudinal and cross-section along the main axes of the temple. © Neuwirth & Auer, TU Graz 2020.





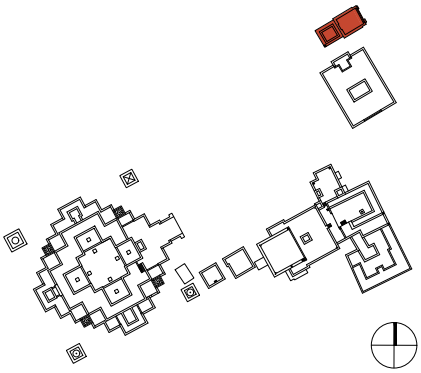
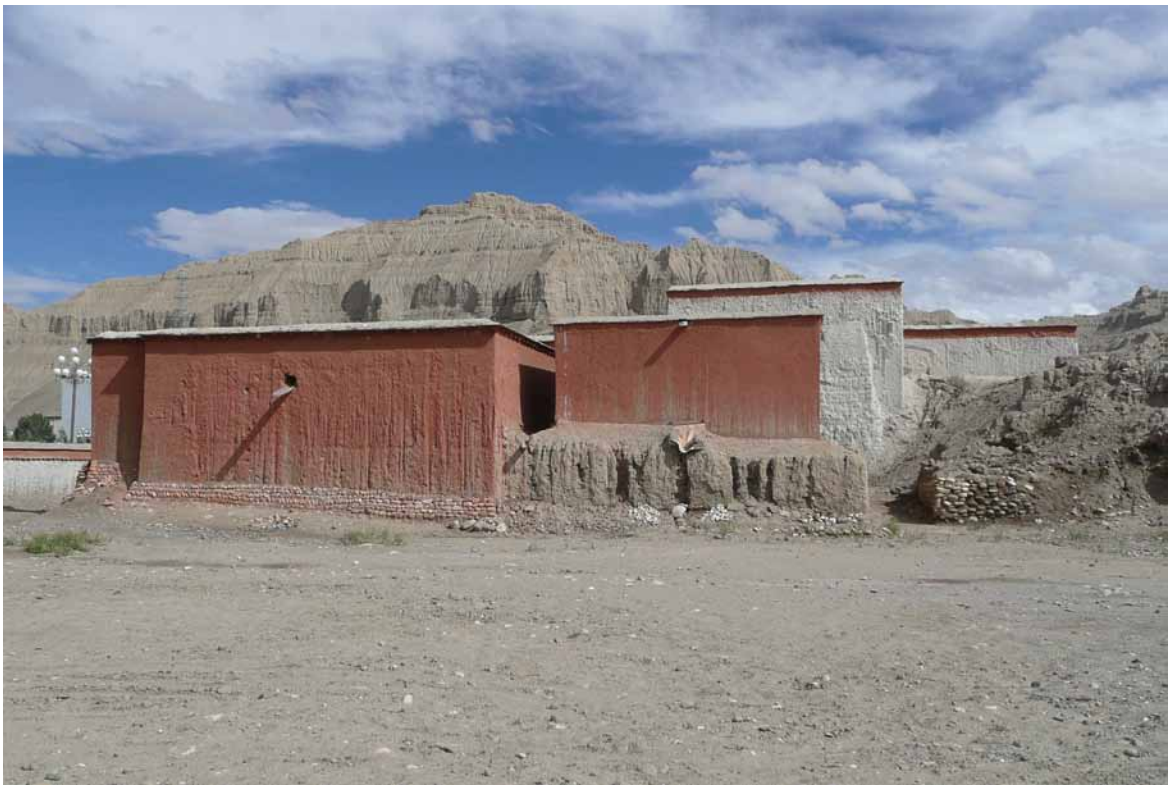


Fig. 61 North-western view of the Golden Temple located in the north corner of the compound. Only the massive base and a part of the lowest floor of the former three-storeyed building have survived. On the northeast side, directly in front of the entrance, another temple with the same façade height is part of the ensemble today. The northwest façade of the White Temple is visible behind this temple. Auer 2007.



THE GOLDEN TEMPLE

The Golden Temple (Tib. *gser khang)* is the smallest of the preserved ancient temples, of which only the massive part of the ground floor has remained to the present day. It forms an ensemble with the temple in front of its entrance. The rear façade of this temple is directly attached to the base of the Golden Temple, so that there is only a small distance between the two buildings. The ensemble is located in the north corner of the area, 86 metres away from the vestibule of the Main Temple, but only 6.20 metres north of the White Temple. Both buildings are oriented along a northeast-southwest axis, and the main axis deviates 30° counter-clockwise from due east. For this reason, its orientation is nearly parallel to the orientation of the Main Temple and the Red Temple. Both buildings have an approximately square ground plan with their entrances facing northeast.

The remains of the Golden Temple stand on a massive base made of clay bricks with a side length of 7.60 metres on the southwest side and 8.50 metres on the southeast side. This base varies from 1.50 to 2.20 metres high and leads like a passage around the building. On the south corner of the base, there are some weathered steps which lead up to the level of the passage. The structure standing on this base is 6.30 metres long and 5.60 metres wide with a height of 2.50 metres on the entrance side and 2.70 metres on the rear side, where the base is most weathered. The flat roof above protrudes only minimally and is designed without an attic.

The entrance door is located in the 1.00-metre-wide intermediate space between the two buildings. The floor level of the interior lies 0.30 metre lower than the entrance level. The square room has a side length of 3.60 metres. Due to the restoration, the ceiling is lower today. The large mandalas of the murals are not preserved in the upper area, but allow the reconstruction of the previous room height, which was originally just as high as the side length of the walls, resulting in a space ratio of 1:1. The wall thickness is 1.00 metre on the side walls and 1.30 metres on the entrance and back walls.

The foundation of the Golden Temple dates back to the second half of the 11th century, and the first renovations took place up until the early 12th century. It was built in three storeys which diminished toward the top and has been described as the most sacred structure in the whole monastery.[42] The upper floors were accessed by means of small external staircases, which led to narrow galleries with pilasters and cornices of sculptured wood.[43]

42 VITALI 1999: 14-15, 76.
43 TUCCI & GHERSI 1935: 169.

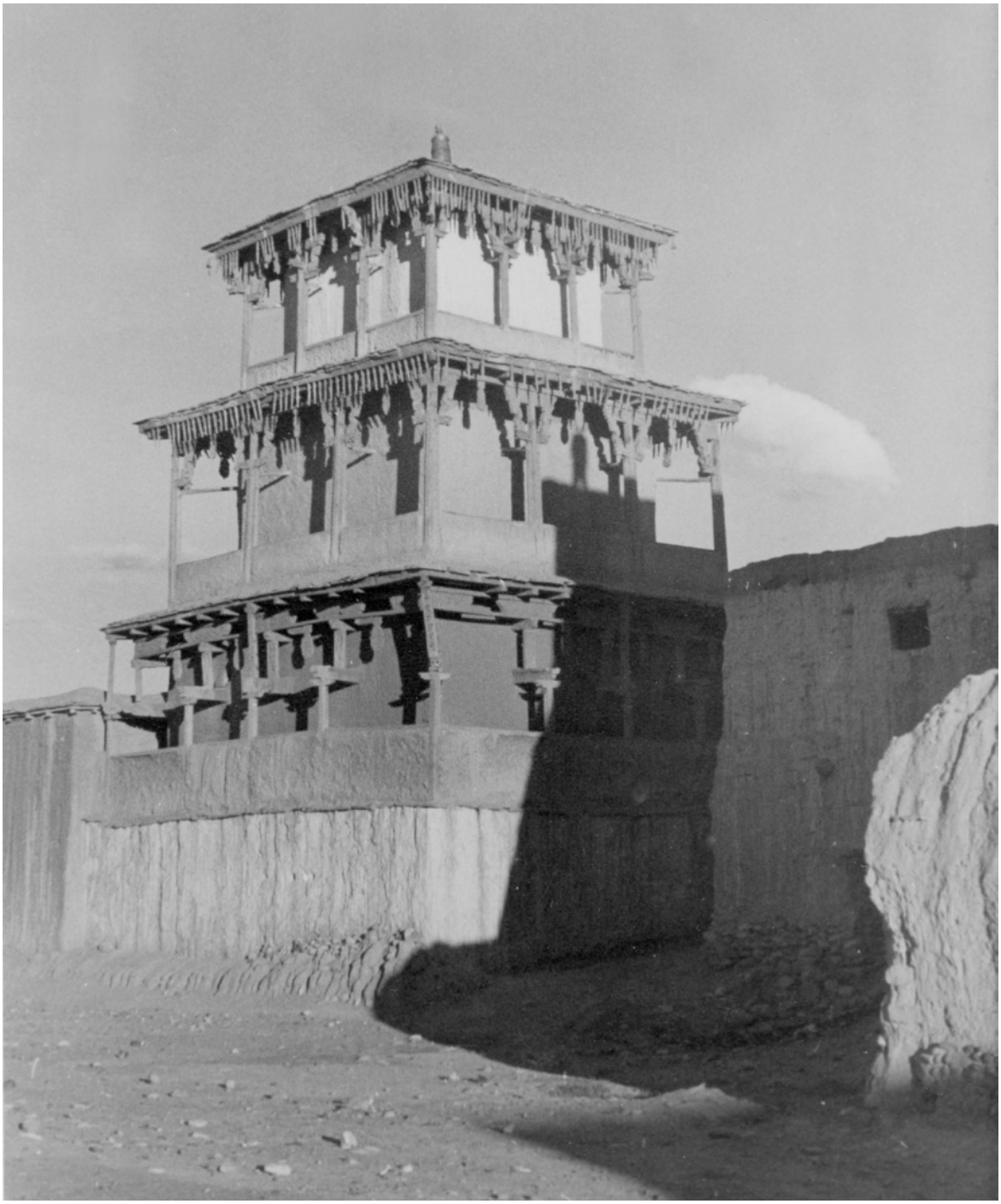


Fig. 62 Overleaf: Western view of the Golden Temple before the upper storeys and the wooden structures were destroyed. The building had three storeys and an outside gallery on each floor, consisting of wooden colonnades and brick balustrades. The square rooms became smaller from floor to floor, making the building look like a pagoda. The entrances were all facing northeast and were accessed by means of small external staircases. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 63 Left: Former entrance door on the ground floor of the Golden Temple. Govinda expedition 1947-49. In LI GOTAMI GOVINDA 1979: 150.

Fig. 64 Below: Northern view of the Golden Temple. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

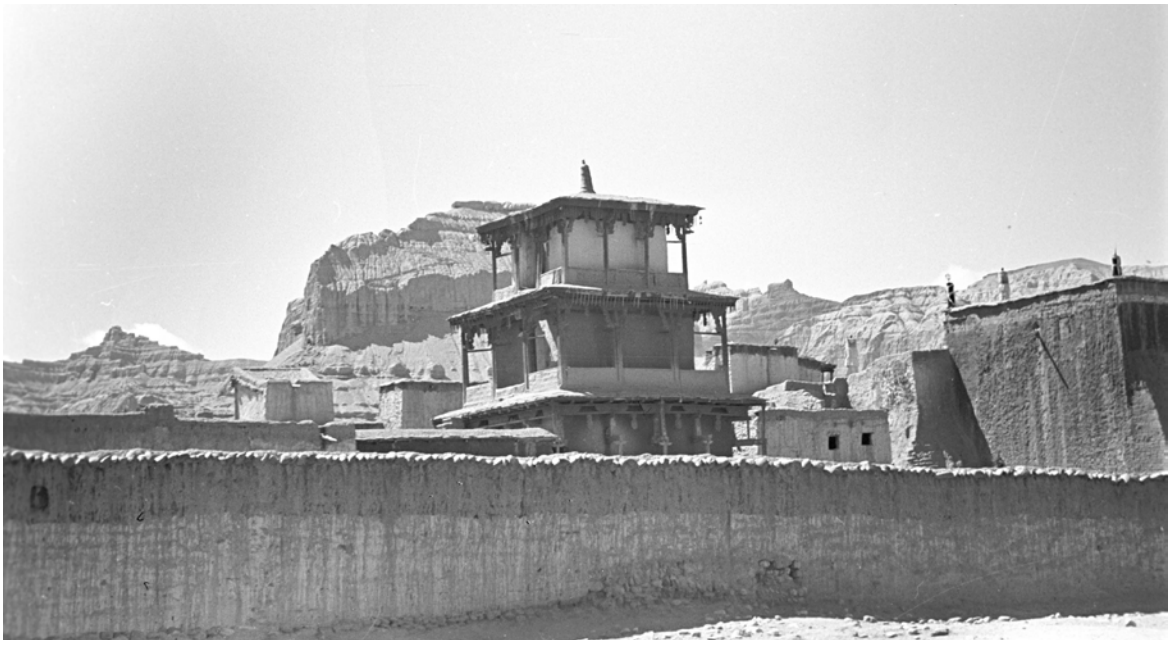


Fig. 65 The remains of the Golden Temple as seen from the west, with the structure directly in front of it. Klimburg-Salter 1993, WHAV (KS93 11,23).

Fig. 66 Southeast view as seen from the roof of the White Temple. The entrance to the Golden Temple is located in the space between the two buildings. Auer 2007.

Fig. 67 Wall painting on the southwest wall inside the Golden Temple, opposite the entrance. The preserved parts of the mandala allow us to draw conclusions about the former room height. Luczanits 1993, WHAV (CL93 1,9).

Fig. 68 Western view of the Golden Temple, with the preserved ground floor of the former three-storeyed structure. The façades of both temples have nearly the same height today. Auer 2007.

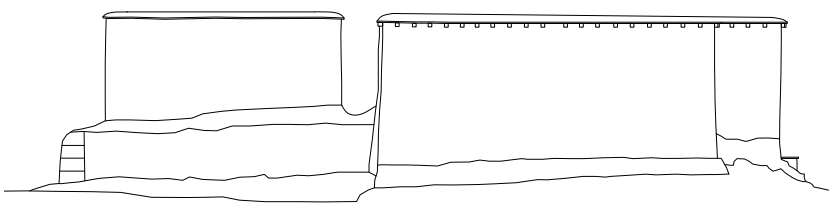


Fig. 69 The southeast elevation with the structural remains of the Golden Temple on the left side. Only the lowest of the three storeys of the former building structure has been preserved. © Neuwirth & Auer, TU Graz 2020.

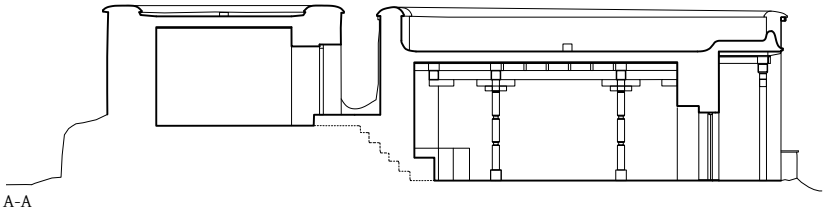


Fig. 70 The longitudinal section shows the interior of the two buildings as well as the differences in the floor levels and the roof constructions. © Neuwirth & Auer, TU Graz 2020.

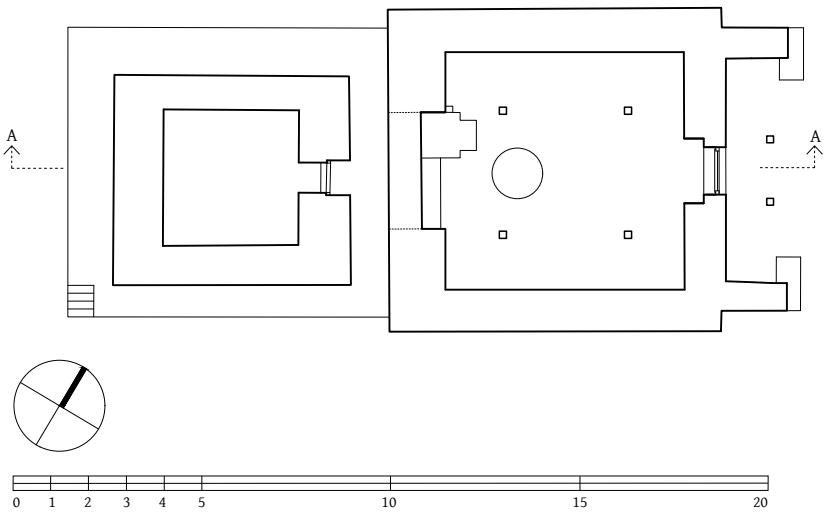


Fig. 71 The ground plan of the two structures with the remains of the Golden Temple on its southwest side and the two entrances on the northeast side. © Neuwirth & Auer, TU Graz 2020.

According to the *Ngari Chronicle*, the Golden Temple was about to be entirely renewed in the second half of the 15th century. The photos taken by E. Ghersi and Li Gotami Govinda show the condition of the Golden Temple in 1933 and in the late 1940s, but only the lowest storey of this structure still exists to this day.[44]

The somewhat larger temple on the northeast side directly adjoins the massive base of the Golden Temple with its back and is equipped with an open vestibule that faces northeast. The outer walls extend 8.60 metres along the northeast side and 10.50 metres along the southeast side. The height of the façades is around 4 metres, with an attic on top of the flat roof, so that both temples reach almost the same height.
Between the side walls, the vestibule is 5.90 metres wide and 1.60 metres deep, and two pillars support the main beam of the vestibule´s ceiling. The entrance door leads into a square interior with a side length of 6.30 metres. Four supports with four cross consoles are arranged in two rows and support the main beams. The central part of the ceiling has been designed as a coffered ceiling with 5 x 5 sections. The interior height from floor level to board level today measures 3.10 metres.

A room-high and 3.10-metre-wide niche is located opposite the entrance, whereby it could have been the former gateway to the Golden Temple, located behind it. The floor in front of the altar shows traces of a circular pedestal. On the southwest side walls, next to the niche, faded fragments of the murals have been preserved. The wall thicknesses measure about 1.10 metres; only the rear wall is remarkably stronger with a thickness of 1.50 metres, but the back wall of the niche is only 0.85 metre in thickness. The current structure of the room suggests that it was originally an open courtyard, used as an entrance area in front of the Golden Temple.

44 LI GOTAMI GOVINDA 1979: 150-151.

Fig. 72 Left: Northern view with the open vestibule and the entrance to the temple directly in front of the Golden Temple. Auer 2007.

Fig. 73 Right: Interior of the temple in front of the Golden Temple, overlooking the southwest wall, where parts of the murals are preserved. The supporting structure and the ceiling were errected in the course of the renovation. Auer 2007.

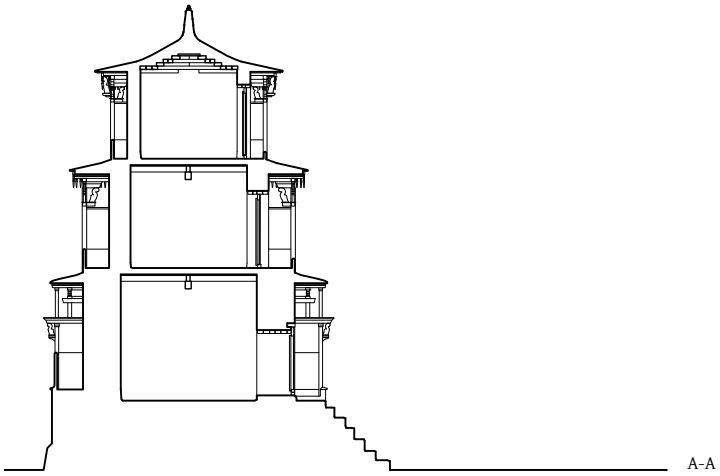


Fig. 74 The reconstruction of the three-storeyed Golden Temple, based on the preserved structure of the building on the ground floor, supplemented on the basis of the historical photos of 1933 and 1949. The longitudinal section shows the organisation of the interior on the three different floors. © Neuwirth & Auer, TU Graz 2020.

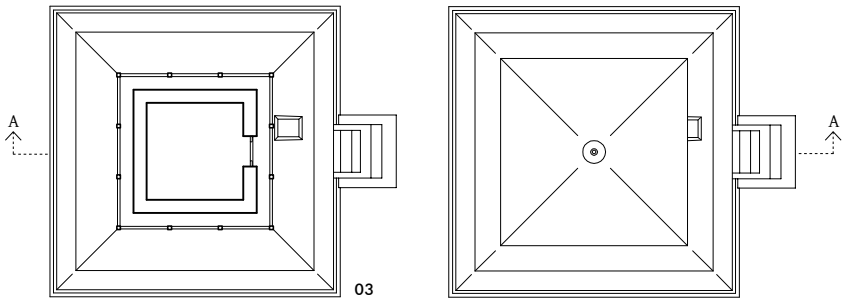


Fig. 75 The reconstruction of the floor plan of the third floor and the roof view next to it. © Neuwirth & Auer, TU Graz 2020.

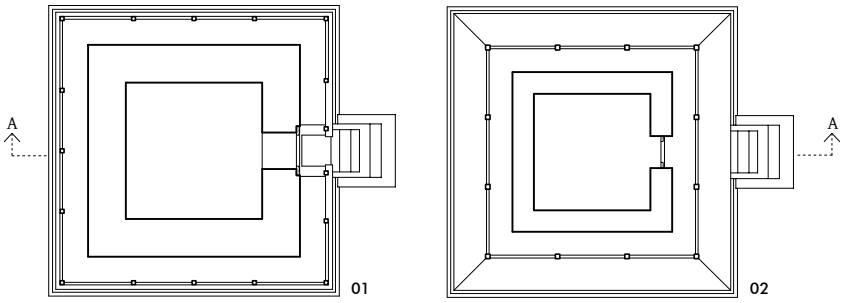
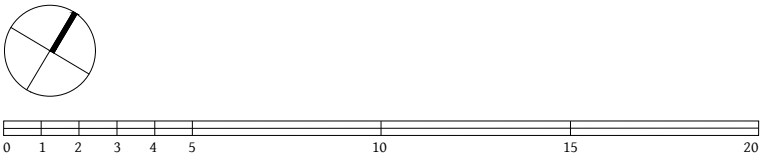


Fig. 76 The reconstruction of the floor plan of the first and second floors. © Neuwirth & Auer, TU Graz 2020.



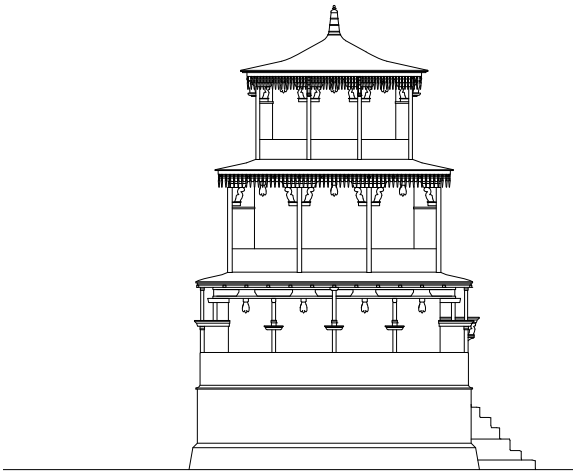


Fig. 77 The reconstruction of the former appearance of the Golden Temple, as seen from the southeast. © Neuwirth & Auer, TU Graz 2020.

Fig. 78 The reconstruction of the former appearance of the Golden Temple, with its entrance on the northeast side. © Neuwirth & Auer, TU Graz 2020.

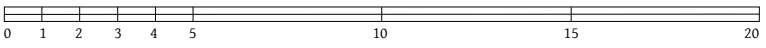


Fig. 79 The reconstruction of the Golden Temple, according to the historical photos taken in 1933 and 1949. The access was located on the northeast side, where the entrances of all three floors were arranged on top of one other. © Neuwirth & Auer, TU Graz 2020.

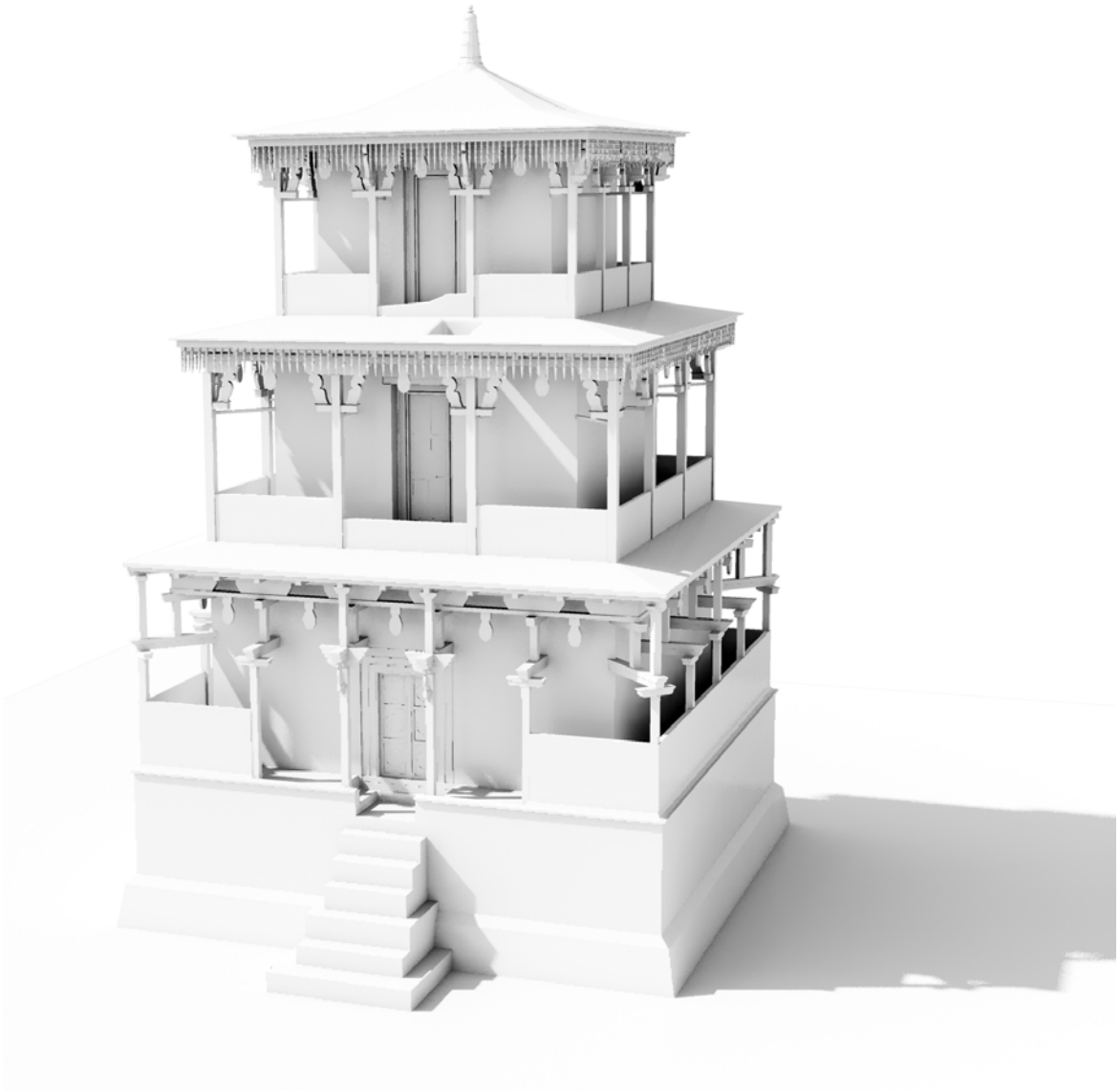


Fig. 80 The reconstruction of the Golden Temple as seen from the north. © Neuwirth & Auer, TU Graz 2020.

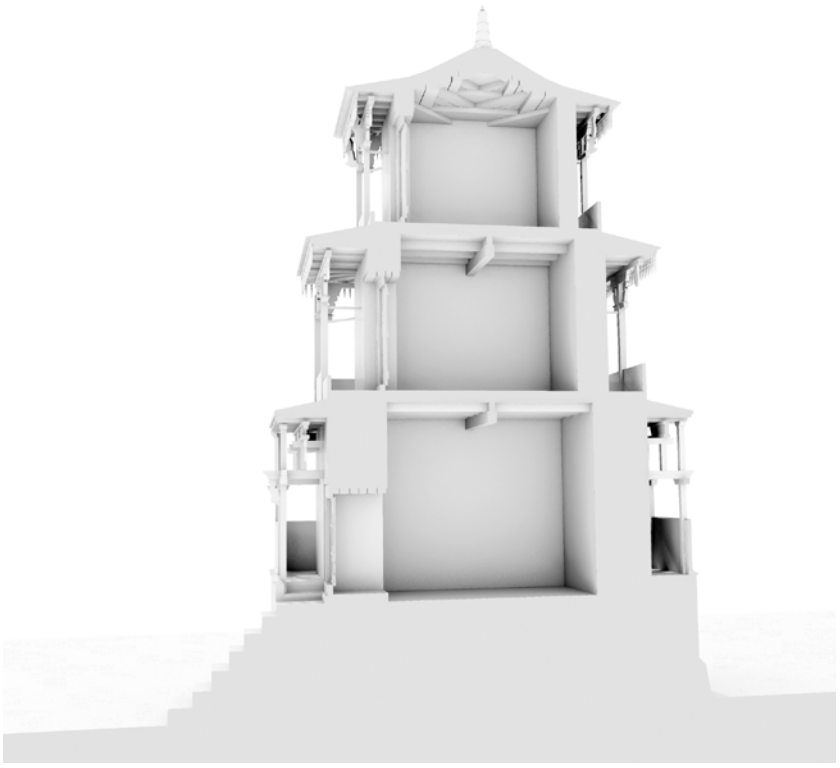


Fig. 81 The reconstruction of the Golden Temple, longitudinal section. © Neuwirth & Auer, TU Graz 2020

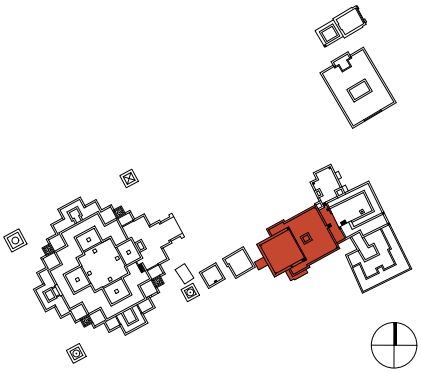


Fig. 82 Western view of the Red Temple, showing the structural division on the outer façade, the elevated area in the southwest part, and the later added supporting pillar on the south-west wall. Neuwirth 2007.

THE RED TEMPLE

The Red Temple (Tib. *‚du khang ‚dzam gling rgyan)* is situated between the Main Temple and the White Temple. The building is oriented along a north-east-southwest axis, exactly in parallel with the alignment of the Main Temple. The temple is accessed on the northeast side, where an open inner courtyard leads to the vestibule of the temple. The temple and the attached room structures can be easily distinguished from the outside, as they are differentiated by colour. The building of the temple is painted red, while the annexes on the northeast side are painted white. On the outside, the temple extends over a total width of 21.60 metres and a total length of 31.70 metres.

Today, the solid-walled façades display pillars that provide significant support on the southwest and southeast sides, which are painted in the same colour as the outer walls. The base zone of the walls has been reinforced by several rows of small river stones. In the upper area of the slightly higher, southwest part the exterior, the plaster shows where constructive changes were made in the masonry, indicating a structural change. This zone also includes the drainage from behind the flat roofs through water gutters, which were routed to the outside through recesses in the masonry. The attic, which runs around the roof area, was built in three layers, with stone slabs and intermediate wall layers in grey, red and white.

The temple consists of three parts: a narrow vestibule, an 18-pillared assembly hall and a 16-pillared apse. The interior walls are decorated with murals, which can be dated back to the 15th century, and some of the paintings also reflect later renovations.[45]

45 VITALI 1999: 14, 37-40; Tropper 2020: 915-916.

Fig. 83 Left. North-western view of the Red Temple. The inner structure of the room can be seen on the façade due to the different heights. Auer 2007.

Fig. 84 Right: South-eastern view of the temple with another wall pillar that supports the eastern side room. Auer 2007.

Fig. 85 North-eastern view of the buildings in front of the temple, where the access to the temple is located today. Auer 2007.

Fig. 86 Northern view with the conglomerate of courtyards and adjoining rooms, which are located in front of the Red Temple. The different wall colours and the accentuation of the heights make it possible to identify the building structures from the outside. Auer 2007.

Fig. 87 The wall pillars of the southwest and the southeast façades determine the outer appearance, giving it its curved shape and its size. In the zone above, constructive changes in the rising masonry are visible. The base zone is made of small river stones and surrounds the façades of the entire temple, but was left out in the area of the supporting pillars. Auer 2007.

Fig. 88 North-eastern view of the temple´s vestibule, which is accessible today from an inner courtyard. Auer 2007.

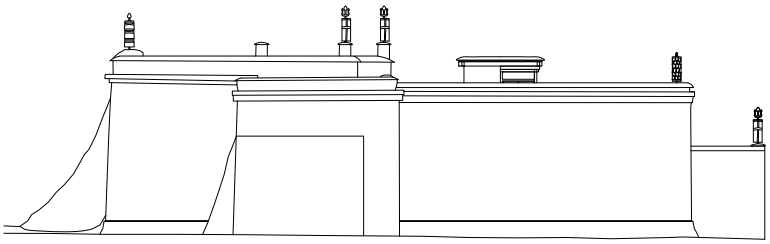


Fig. 89 Southeast elevation of the Red Temple. The inner space structure is also clearly visible on the outside of the temple. © Neuwirth & Auer, TU Graz 2020.

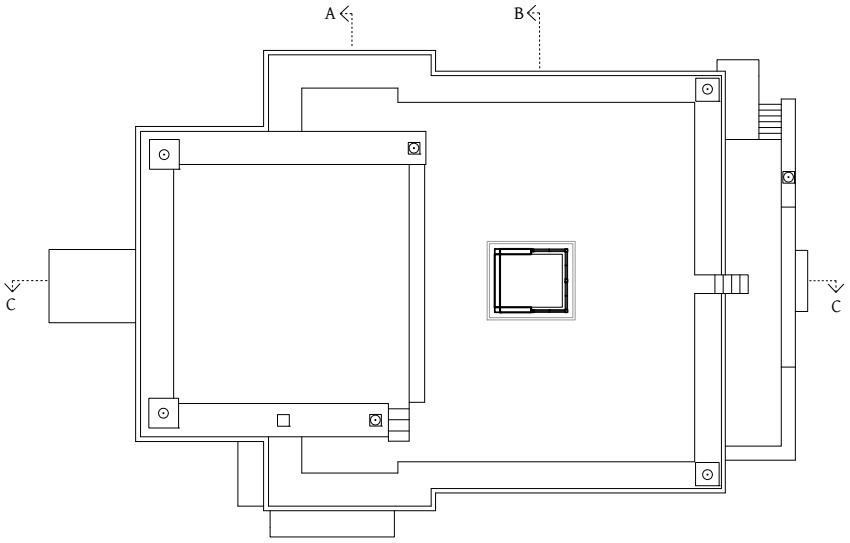


Fig. 90 Roof plan of the Red Temple. The lighting is provided by a lantern suspended above the central area of the assembly hall and a light band that constructively consists of a low row of wooden pillars on the north-east side above the apse. © Neuwirth & Auer, TU Graz 2020.

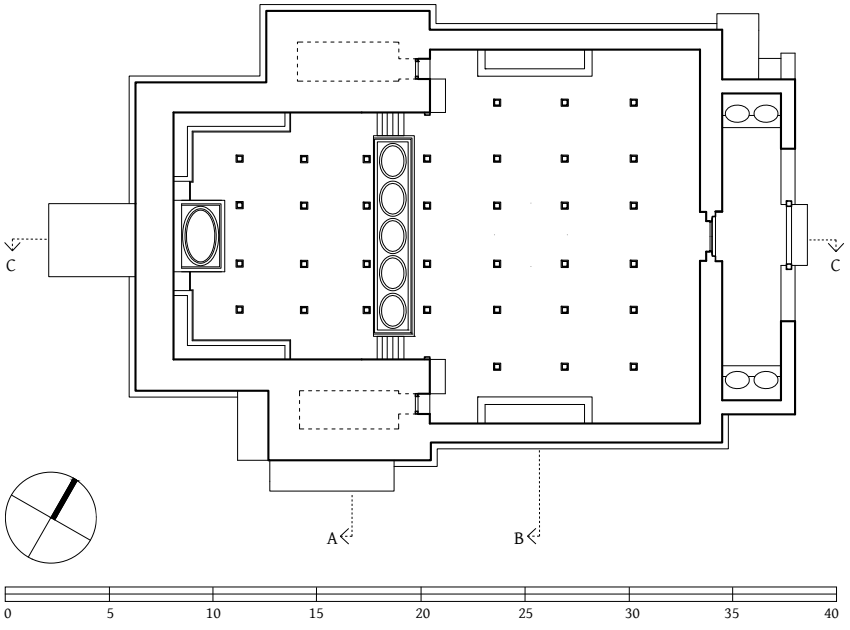


Fig. 91 Floor plan of the Red Temple. The side rooms on both sides of the apse can be accessed from the assembly hall. © Neuwirth & Auer, TU Graz 2020.

The vestibule is 14.75 metres wide and 2.83 metres deep, and two wooden pillars in the central entrance area support the main beam of the roof construction. This intermediate area is barely 3.00 metres wide, with low parapet walls attached to the sides of both pillars, which together define an open space of 8.30 metres in width. Bricked pedestals are located along the narrow side walls of the vestibule, each holding two figures representing the four guardians of the world (Tib. *jigten kyong*). The room height of the vestibule is 4.77 metres up to the board layer of the ceiling.

The vestibule leads into the assembly hall, which is 18 metres wide and 13 metres deep. A total of 18 square, red painted pillars – arranged in three rows of six pillars each – support the ceiling construction. The room height is 5.95 metres up to the board layer on top of the main and secondary beams. There is a 2.55-metre-wide and 3.14-metre-deep opening in the middle of the ceiling with a lantern construction on its top, providing light in the assembly room.

The rear part of the room is 11.90 metres wide and 12.30 metres deep, which means almost square. The floor level here lies 1.15 metres higher than the level in the assembly hall and can be accessed via 1.12-metre-wide stairs built next to the side walls, which lead upwards into the apse area. The figure pedestal between the side stairs is 9.65 metres wide and 1.97 metres deep, allowing a spatial separation between the assembly hall and the apse. A total of 16 square pillars – four rows of four pillars each – support the ceiling. The space in this area is 1.27 metres higher than that in the assembly hall and is kept open on the northeast side by a row of low wooden supports, whereby the main altar is lighted from above. The room height of the apse is 6.10 metres; the main altar – flanked by bookshelves and side altars – is located at the rear of the apse.

Two adjoining rooms, which can be entered from the assembly hall at the ground level, are situated on each side of the apse. The small entrance leads into the 1.85-metre-wide and 4.80-metre-deep interior, whose height corresponds to that of the assembly hall. These are the remains of a covered ambulatory that originally allowed a circumambulation of the apse. The renovations carried out in the recent years did not leave any traces of the walls, but a change in the masonry can be seen on the façades at the height of this former ambulatory, which makes it possible to reconstruct the former structure (Fig. 517, page 356).

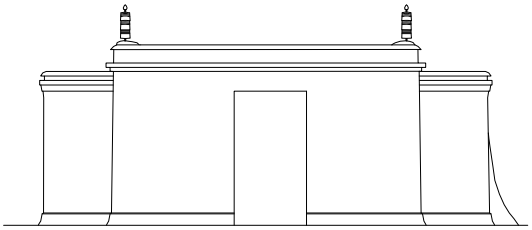


Fig. 92 Southwest elevation with the supporting pillar on the apse wall of the Red Temple. © Neuwirth & Auer, TU Graz 2020.

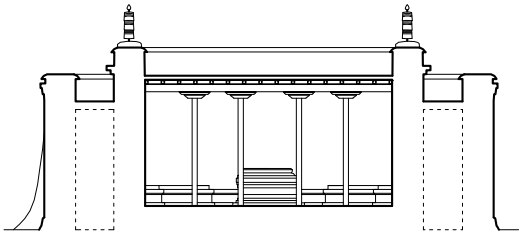


Fig. 93 Cross-section A-A through the area of the elevated apse in the Red Temple. © Neuwirth & Auer, TU Graz 2020.

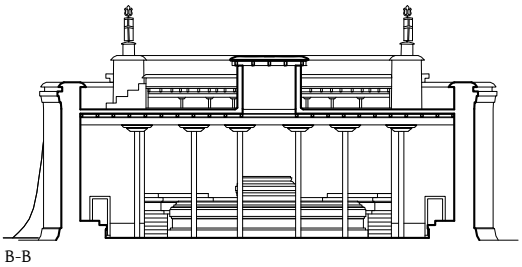


Fig. 94 Cross-section B-B through the assembly hall in the Red Temple. © Neuwirth & Auer, TU Graz 2020.

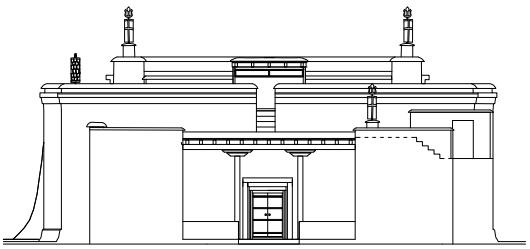
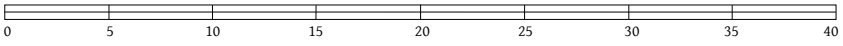


Fig. 95 Northeast elevation with the vestibule of the Red Temple. © Neuwirth & Auer, TU Graz 2020.



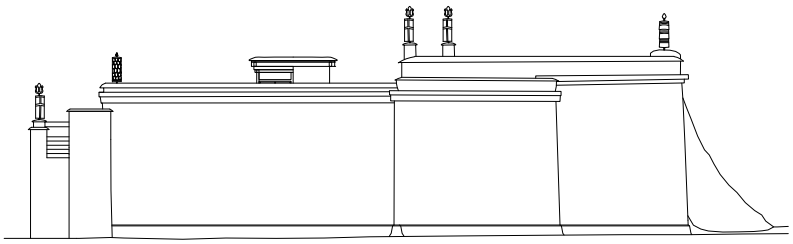


Fig. 96 Northwest elevation of the Red Temple. © Neuwirth & Auer, TU Graz 2020.

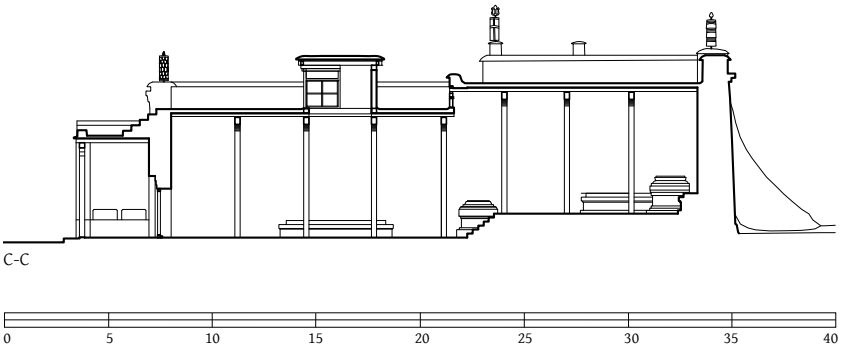


Fig. 97 Longitudinal section C-C of the Red Temple through the vestibule, the assembly hall and the elevated apse. © Neuwirth & Auer, TU Graz 2020.

The clearly defined interior zoning with its different heights is reflected in the roof and attic areas, whereby the interior zoning can be observed on the façade. Starting from the floor level of the vestibule, the attic height of 5.20 metres is significantly lower than the attic of the assembly hall height of 7.50 metres, which, in turn, is lower than the raised apse area, which is 8.81 metres high. This change in height is directly related to the different inner floor levels and highlights the liturgical significance of the areas on the outside.

The roof of the vestibule can be accessed via an annex on its north side. The height of the attic in this area is only 0.26 metre. Some steps in the centre lead from the vestibule roof to the assembly hall roof, whose roof level is 1.30 metres higher than the vestibule roof. The height of the attic on top of the assembly hall is 1.28 metres. The lantern, including its roof construction, is 2.55 metres high. The roof level of the apse lies 1.24 metres higher than the roof level of the assembly hall, and the stairs are located on the southeast side of the apse. Here, the height of the attic along the outer walls is 1.35 metres. The raised apse is additionally accentuated on the façade by the colour change from red to white. All corners of the roof zone are decorated with different forms of banners; some of these are victory banners, and some are tridents, as it is generally the case in temple buildings.

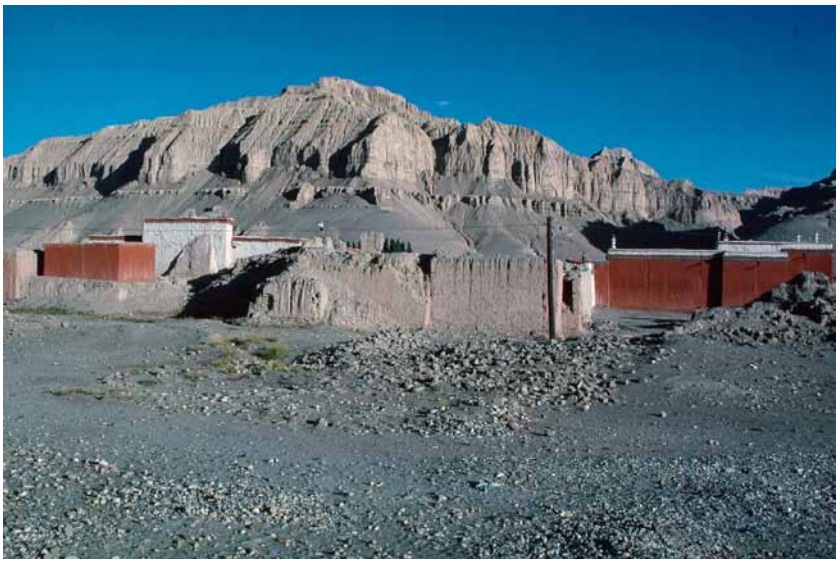


Fig. 98 Northwest view of the monastery with the Golden Temple on the left side, the White Temple behind it and the Red Temple on the right side. In front, one can see the remains of some residential buildings. Luczanits 1993, WHAV (CL93 39,27).

Fig. 99 Western view of the Red Temple. The outer condition of the temple is essentially the same as in 2007; the ruins on the west side have been restored since then. Luczanits 1993, WHAV (CL93 39,26).

Fig. 100 The apse with the altar in the rear is an almost square space and considerably higher than the assembly hall. Two stairways built into the side walls lead upwards in this area in the southwest part of the temple. Poncar 1993, WHAV (JP93 45,05).

Fig. 101 The middle area of the assembly hall with the lantern in the ceiling. The wooden supports are spaced between 2.20 and 3.30 metres apart in a rectangular grid. The pillars and beams are painted red, and only the lower parts of the pillars are painted white. Poncar 1993, WHAV (JP93 45,02).

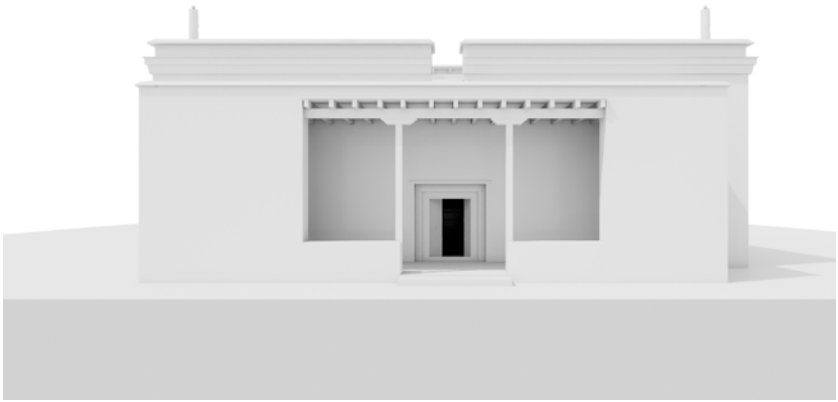


Fig. 102 Spatial representation of the Red Temple, the building structures on the northeast and southeast sides were omitted, allowing a view of the vestibule. © Neuwirth & Auer, TU Graz 2020.

Fig. 103 Bird´s eye view from the back of the Red Temple. © Neuwirth & Auer, TU Graz 2020.

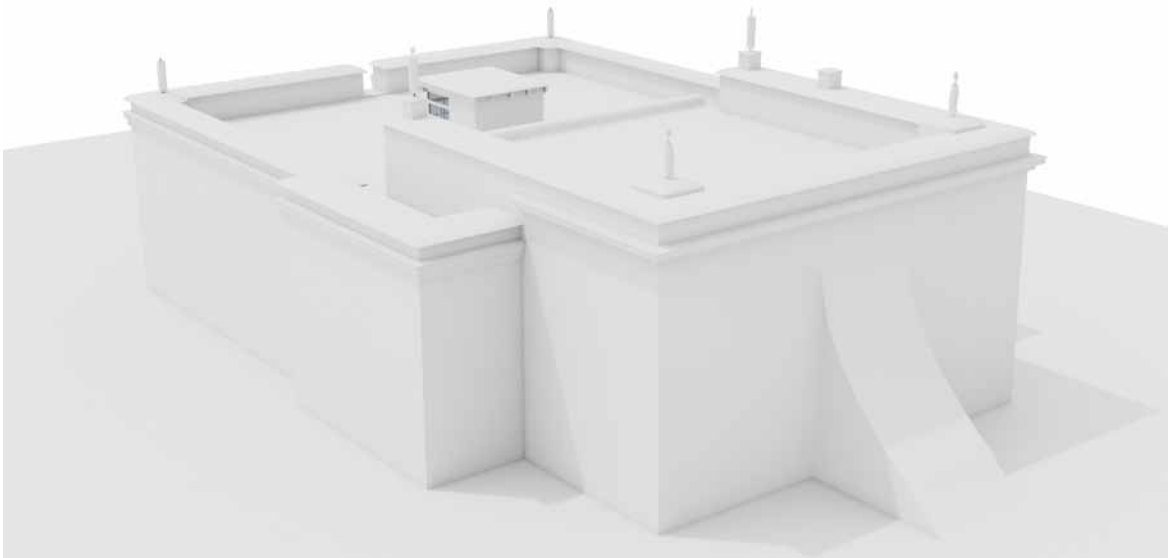
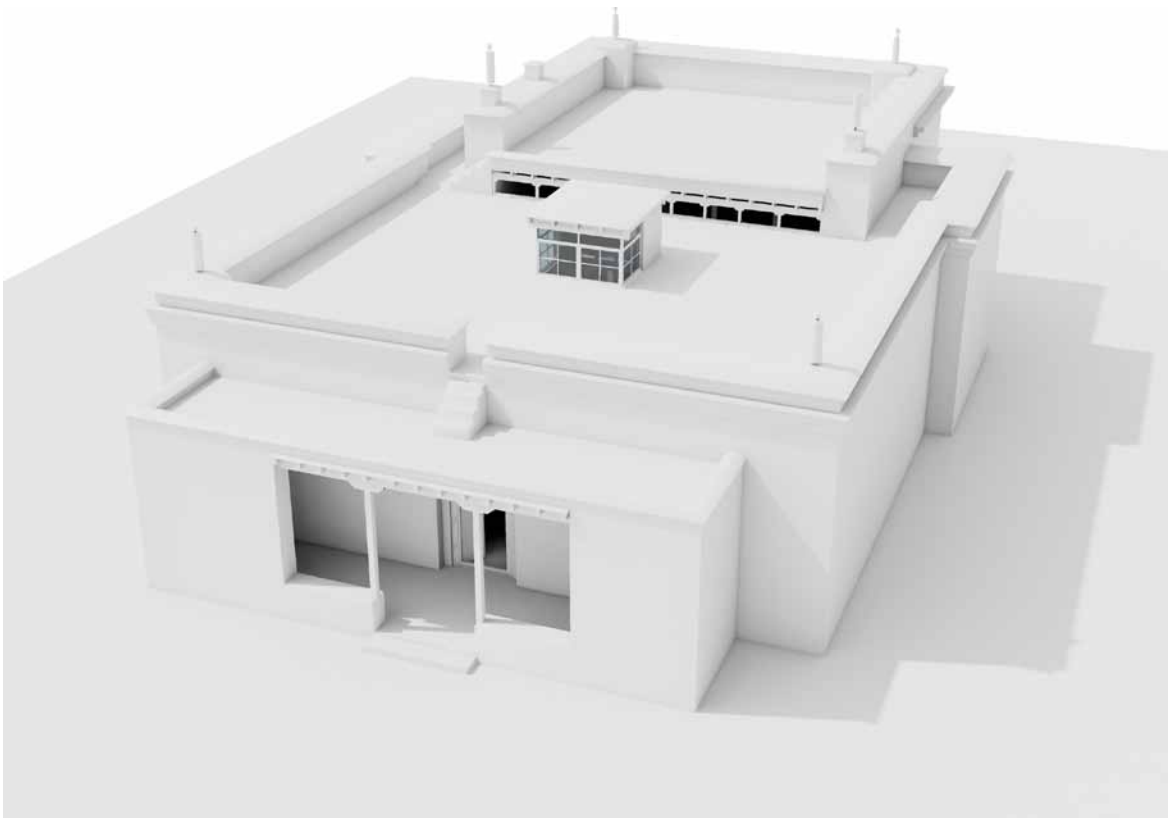
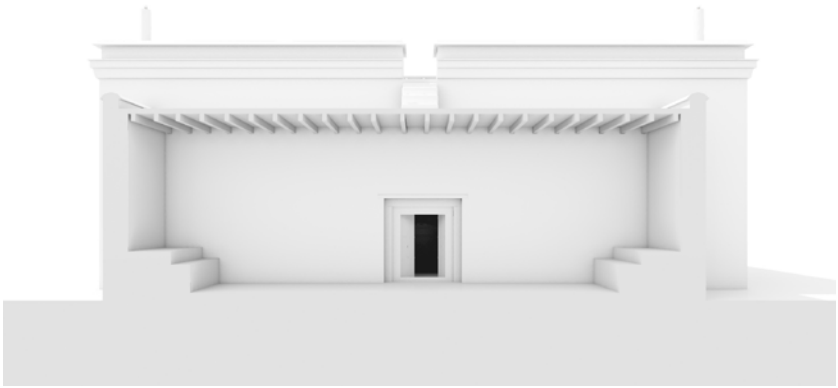


Fig. 104 Bird´s eye view of the temple clearly shows the height staggering, which corresponds to the room structure in the interior, as well as the lighting provided by the lantern of the assembly room and the light band in front of the raised apse. © Neuwirth & Auer, TU Graz 2020.





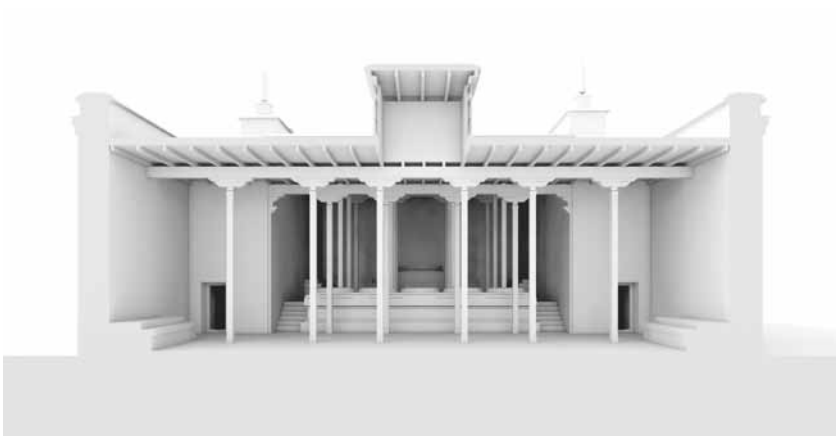
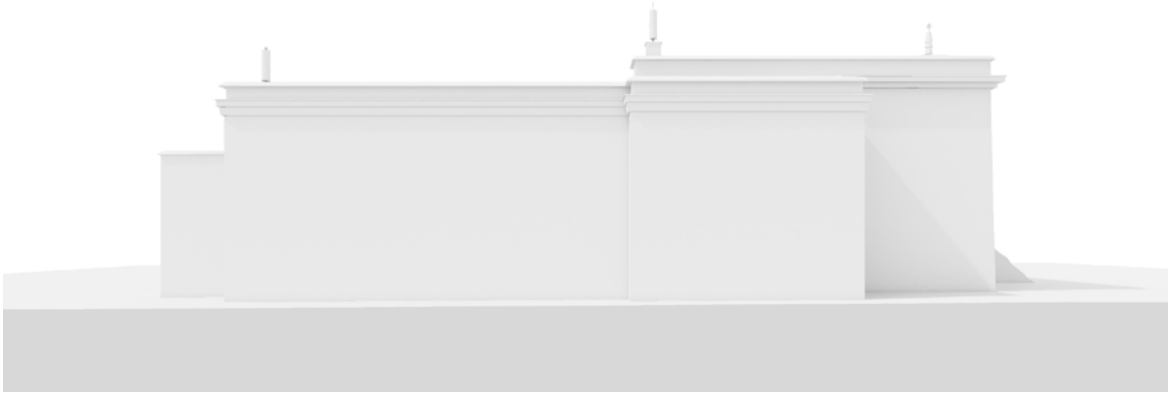
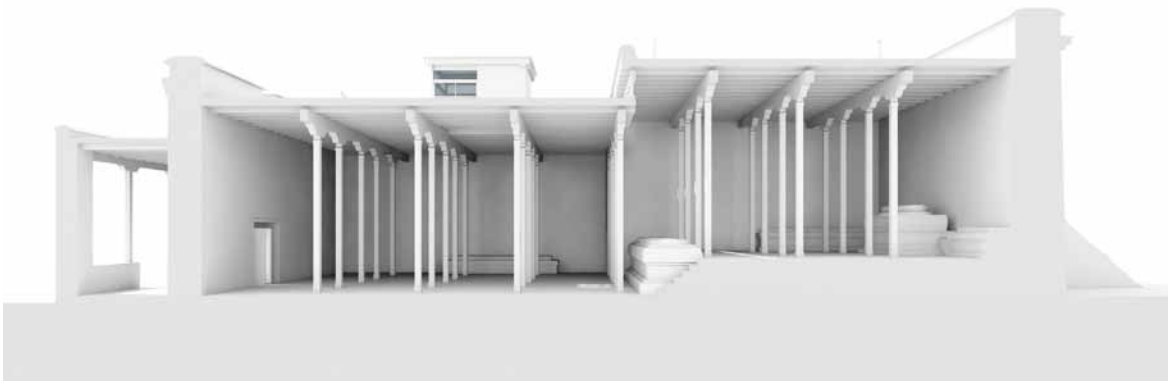
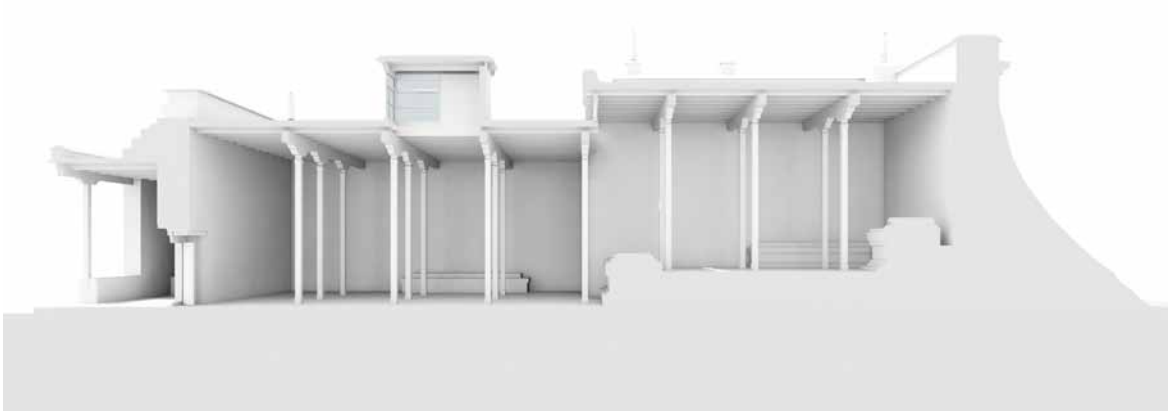


Fig. 105 Spatial representation of the Red Temple showing the configuration and height development of the various rooms, as well as the lighting provided by the lantern. Starting with the cross-section through the vestibule, the other two sections below were generated through the assembly hall and the area in front of the apse. © Neuwirth & Auer, TU Graz 2020.

Fig. 106 Overleaf: Accordingly, the longitudinal sections on the opposite page showing the different floor levels and heights, as well as the lighting provided by the lantern, and the row of pillars between the roof of the assembly hall and the roof of the apse, through which the altar is lit. Starting with the northwest elevation, the two longitudinal sections below were generated through the stairs leading up to the apse and along the central axis. © Neuwirth & Auer, TU Graz 2020.







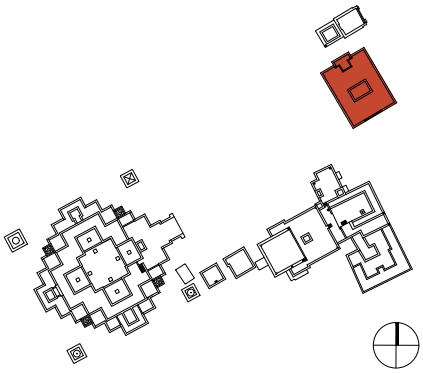


Fig. 107 South-western view of the White Temple as seen from the Red Temple´s roof. Clearly visible from the outside is the raised attic of the niche on the northwest wall and the large, raised lantern in the centre of the main room. Neuwirth 2007.

THE WHITE TEMPLE

The White Temple (Tib. *lha khang dkar po*) lies in the northern area of the compound, 16.70 metres northwest of the Red Temple and only 6.20 metres south of the Golden Temple. Like the Red Temple, the White Temple's foundation dates back to the 15th century.[46] Unlike the other temples of the monastery, this rectangular building is oriented along a northwest-southeast axis, with the entrance facing southeast. The main axis of the temple deviates by 59° clockwise from due east. The exterior dimensions include a total width of 20.07 metres and a total length of 25.56 metres, with an external height of 6.17 metres up to the upper edge of the attic.

At the rear of the temple in the northwest, a niche that is about 7.83 metres wide, 1.55 metres deep and 7.81 metres high protrudes significantly from the centre of the façade and the roof. The walls on this side are provided with conical retaining walls made of clay bricks, which support the lower third of the ascending masonry. The niche wall was additionally reinforced with another supporting pillar that extends above half the façade. On the lateral northeast and southwest side façades, waterspouts cantilever far out that drain water off the flat roof. This part of the structure was renovated in 2006 in the course of an extensive renovation performed by the I.+B. Baechi Foundation Zurich.[47]

As in the Red Temple, the base zone was reinforced with rows of small river stones. The construction of the vestibule gives the southeast façade a pylon-like character. The open area in the middle is 7.78 metres wide, and two wooden pillars support the attic-less roof above, so that the open entrance area appears lower than the adjacent façades.

46 VITALI 1999: 14, 37-40.
47 I.+B.BAECHI FOUNDATION, Internet sources.

Fig. 108 Left: South-eastern view with the vestibule of the White Temple. Auer 2007.

Fig. 109 Right: Northern view with the elevated niche and the supporting pillars along the northwest façades. Auer 2007.

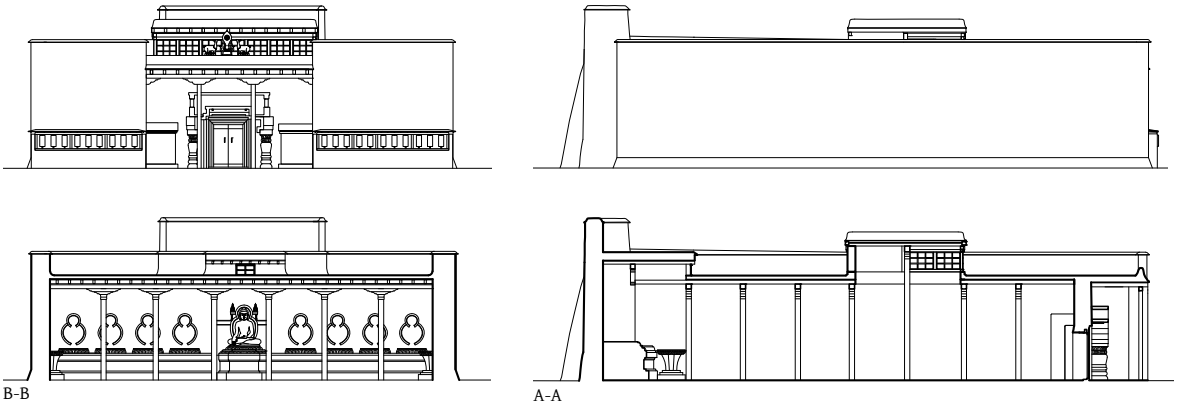


Fig. 110 Above the elevations from the southeast and southwest, and according to these elevations, the cross-section and the longitudinal section of the White Temple. © Neuwirth & Auer, TU Graz 2020.

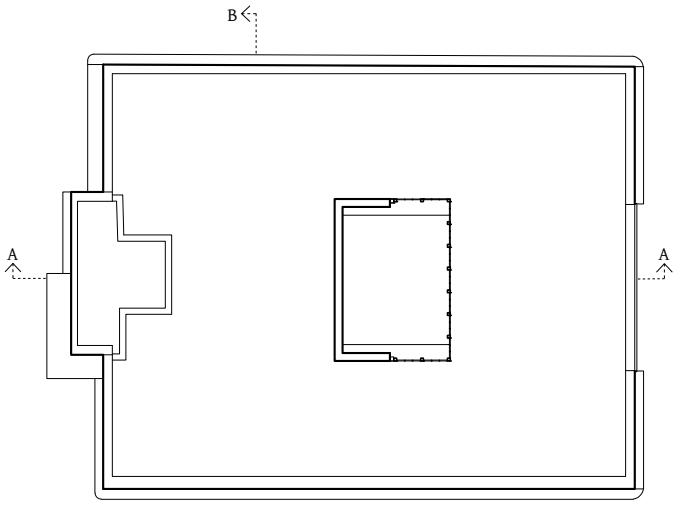


Fig. 111 Roof plan of the White Temple, showing the lanterns in the centre of the assembly room and above the niche with the main sculpture. © Neuwirth & Auer, TU Graz 2020.

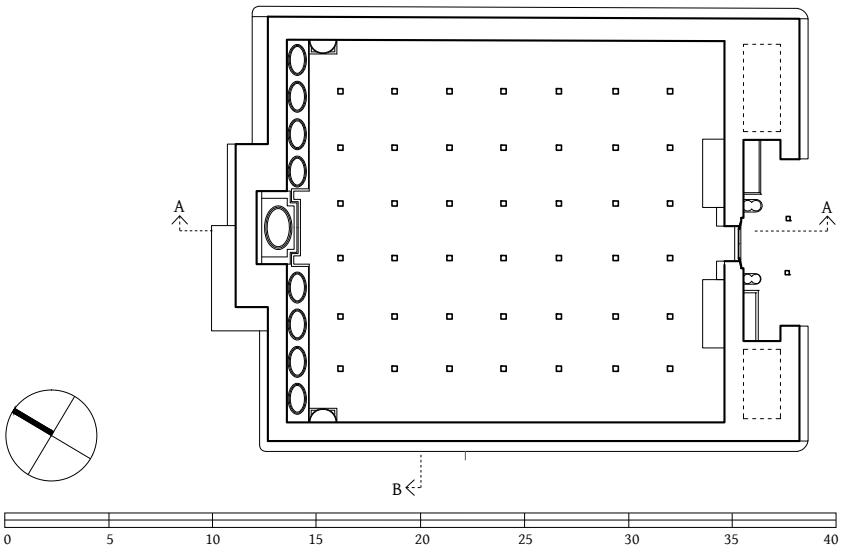


Fig. 112 Floor plan of the White Temple showing the grid of the 42 wooden pillars and the small niche opposite the entrance. © Neuwirth & Auer, TU Graz 2020.

In the course of the renovation conducted in 2004, rows of prayer wheels were installed along the entire length of these side façades. There is a golden sculpture of the Dharmachakra in the middle above the entrance. The closed surfaces of the façades are whitewashed; only the upper strip of the circumferential attic was painted red. Above this strip, there is a slightly protruding, thin layer of stone slabs, which was fastened to the structure by a layer of clay.

The vestibule has a depth of 1.78 metres and is relatively narrow in relation to the size of the temple. The width of 10.07 metres does not extend across the entire width of the building. The lateral areas are walled up today, although they were probably originally accessible as side rooms via the vestibule. Based on the existing wall thicknesses, the two rooms are 4.20 and 3.34 metres wide, respectively, and 1.78 metres deep. Along the outer façade of the vestibule, two central pillars placed at a distance of 2.60 metres from one another support the renewed ceiling, and the room height up to the board layer is 4.68 metres. A sculpturally designed, colourfully painted portal is located around the entrance door.

The main room is 18 metres wide and 21 metres deep, with a room height of 4.85 metres. On the northwest wall, opposite the entrance, there is a niche which is 3.51 metres wide and 1.45 metres deep. The main figure of the temple is located within this niche. The ceiling above this hall is supported by a total of 42 red wooden pillars, arranged in seven rows of six pillars each. Above this pillar grid, the blue-painted main beams run across the main axis of the temple. The secondary beams of the ceiling construction above are painted red and both support and frame the variably painted ceiling panels. A lantern construction that is 7.00 metres wide and 5.00 metres broad provides interior lighting from the southeast. It is located above the three central bays, between the second to the fourth main beam. The two pillars in the middle of the lantern, therefore, rise higher, as the ceiling height in this area is 6.62 metres as measured up to the painted board layer. The ceiling above the figure niche also rises above the room height of the hall, allowing the main figure to be illuminated by light entering through a window on the southeast side.

The interior decoration includes, in addition to the painted wooden ceiling, well-preserved murals on all interior walls and the remains of a collection of sculptures in front of the northwest wall. The massive pedestal of the main niche with the main figure continues over the entire width along the adjoining side walls. This lateral pedestals show the base surfaces and the remains of the halos for ten figures, only one figure of which remains today.[48]

48 HEIN & BOELMANN 1994: 95 pp.

Fig. 113 Detail of the lateral structure around the plastically designed portal. Only fragments of the upper part of the portal are preserved. Neuwirth 2007.

Fig. 114 Vestibule of the White Temple with the renewed ceiling supports and beams. Luczanits 1993, WHAV (CL93 39,25).

Fig. 115 Portal in the vestibule of the White Temple. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

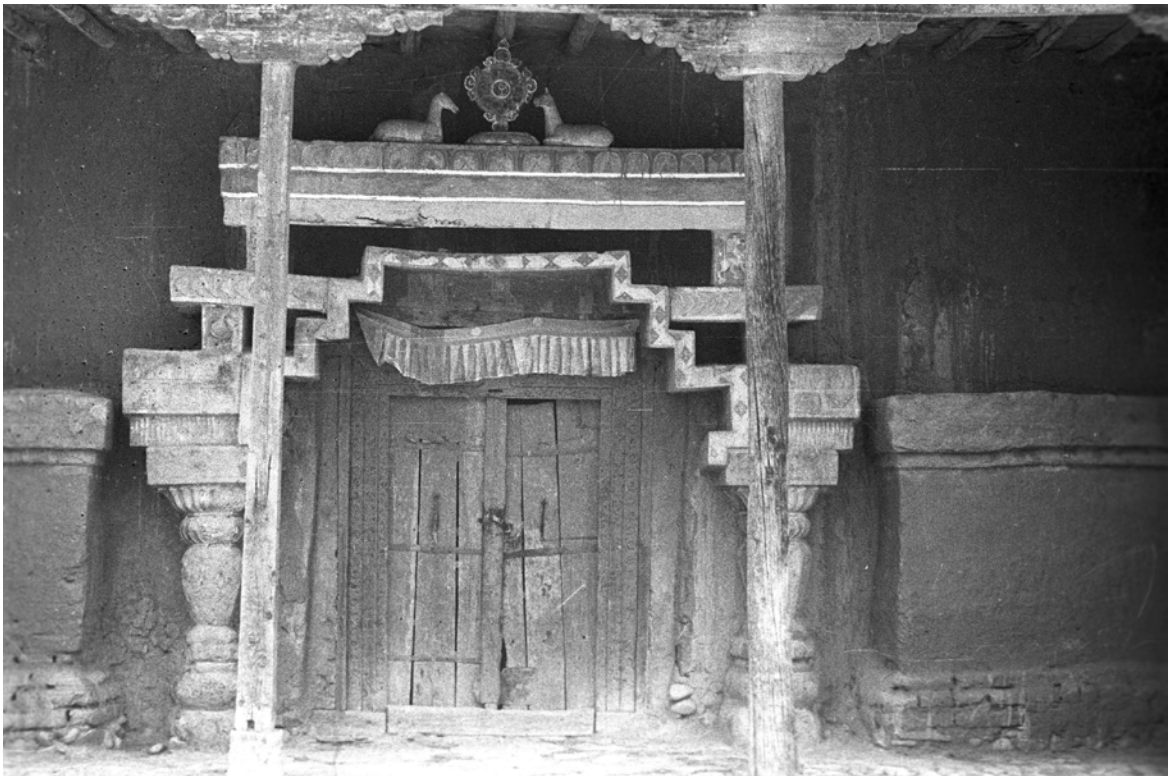
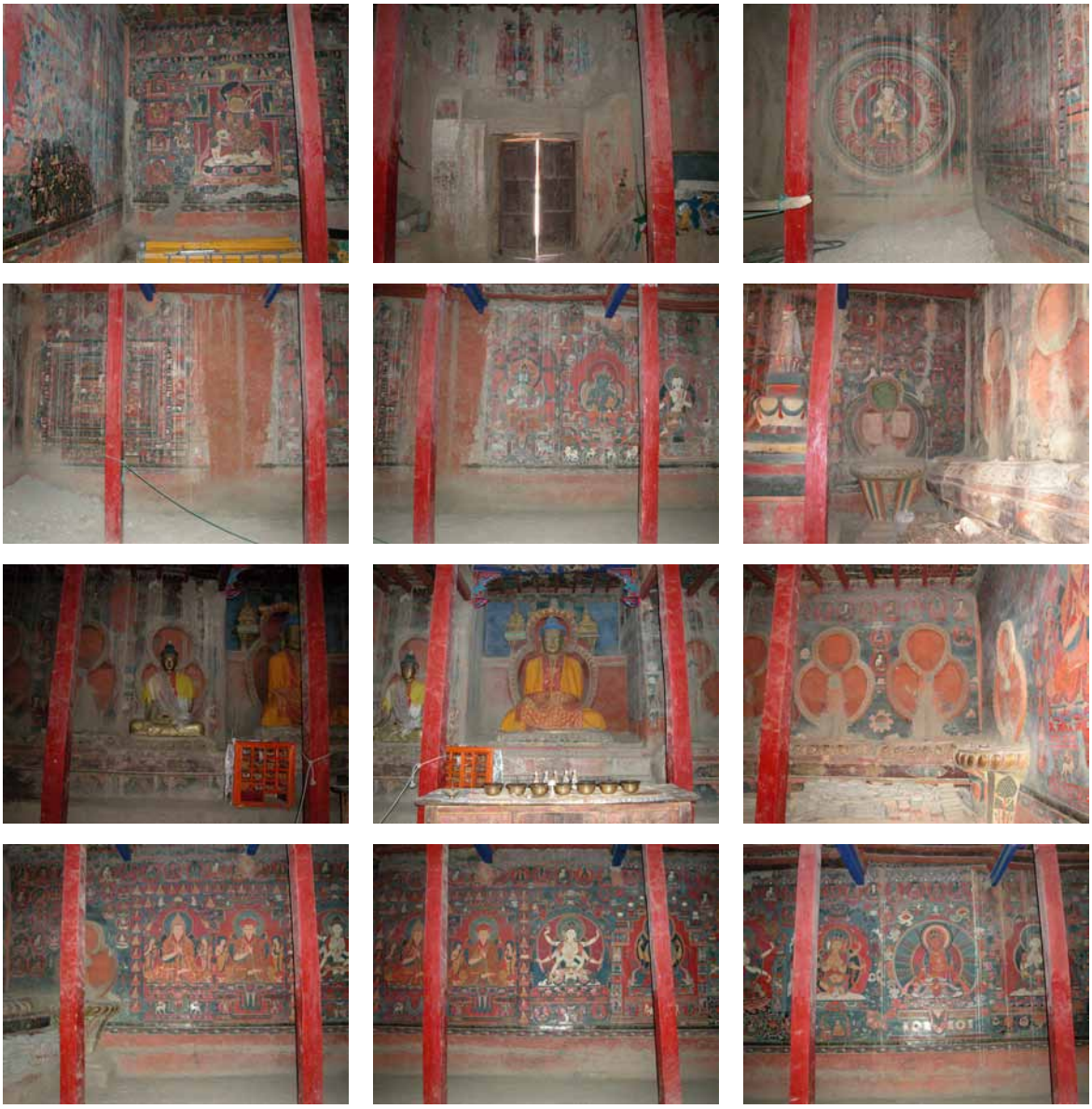
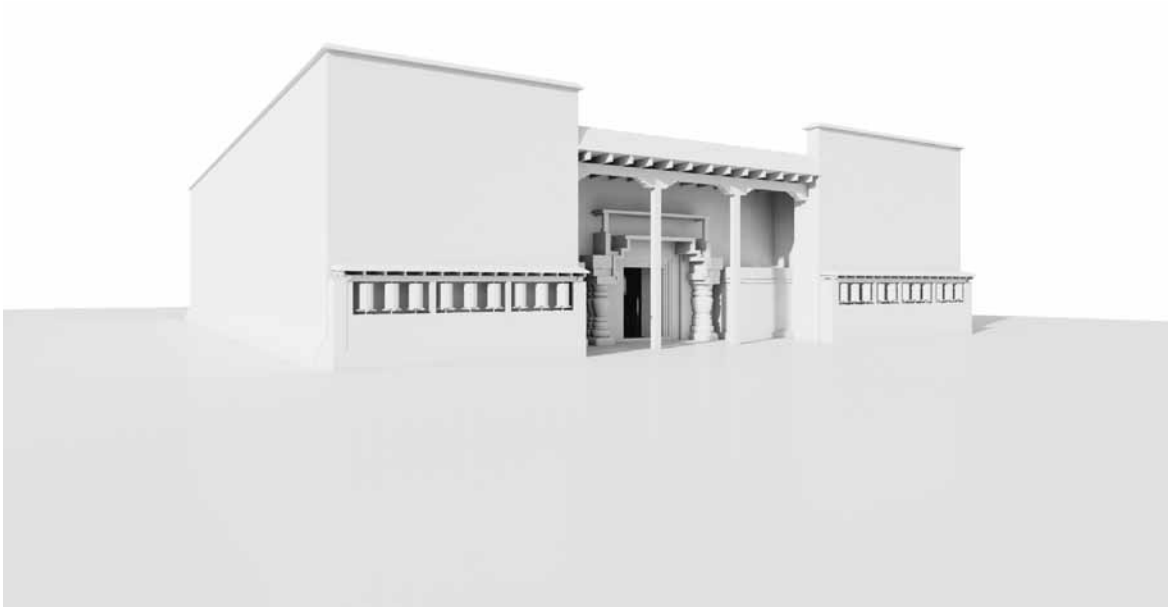


Fig. 116 Interior of the White Temple. From top to bottom: wall painting on the southeast wall, the southwest wall, the northwest wall with the figures and the northeast wall. Kilchhofer 2004.

Fig. 117 Overleaf: The main figure in the niche on the northwest side of the White Temple. Kilchhofer 2004.

Fig. 118 Below left: the ceiling of the lantern construction. Below right: the ceiling above the figure niche. Kilchhofer 2004.





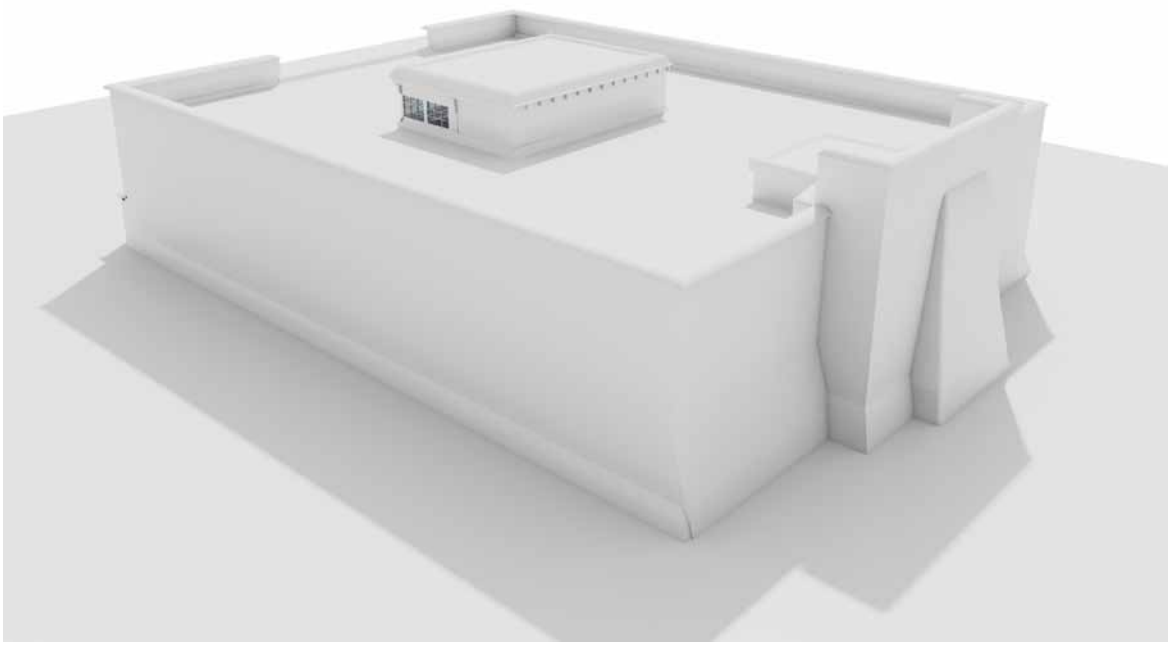
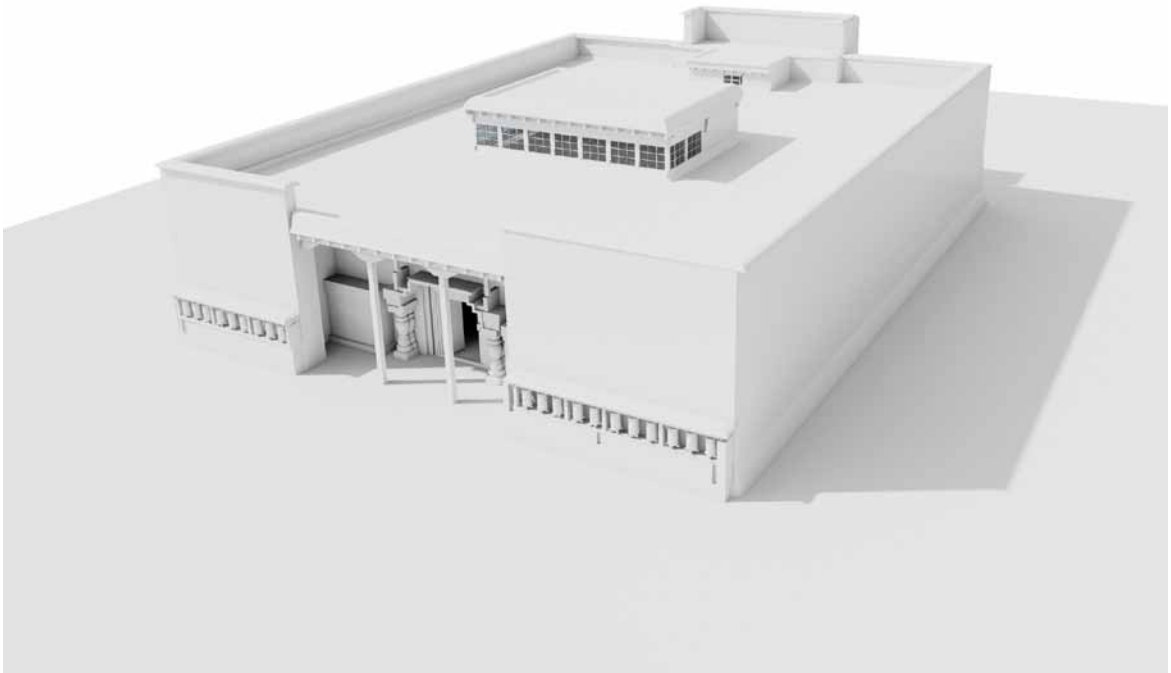


Fig. 119 Overleaf: Spatial representation of the White Temple. Above: the south-eastern view of the White Temple with the pylon-like entrance area between the side walls. Below: the north-western view with the niche protruding from the façade. © Neuwirth & Auer, TU Graz 2020

Fig. 120 Bird´s eye view from the east, with the large lantern in the middle of the roof and the smaller lantern above the niche with the window providing interior lighting. © Neuwirth & Auer, TU Graz 2020.



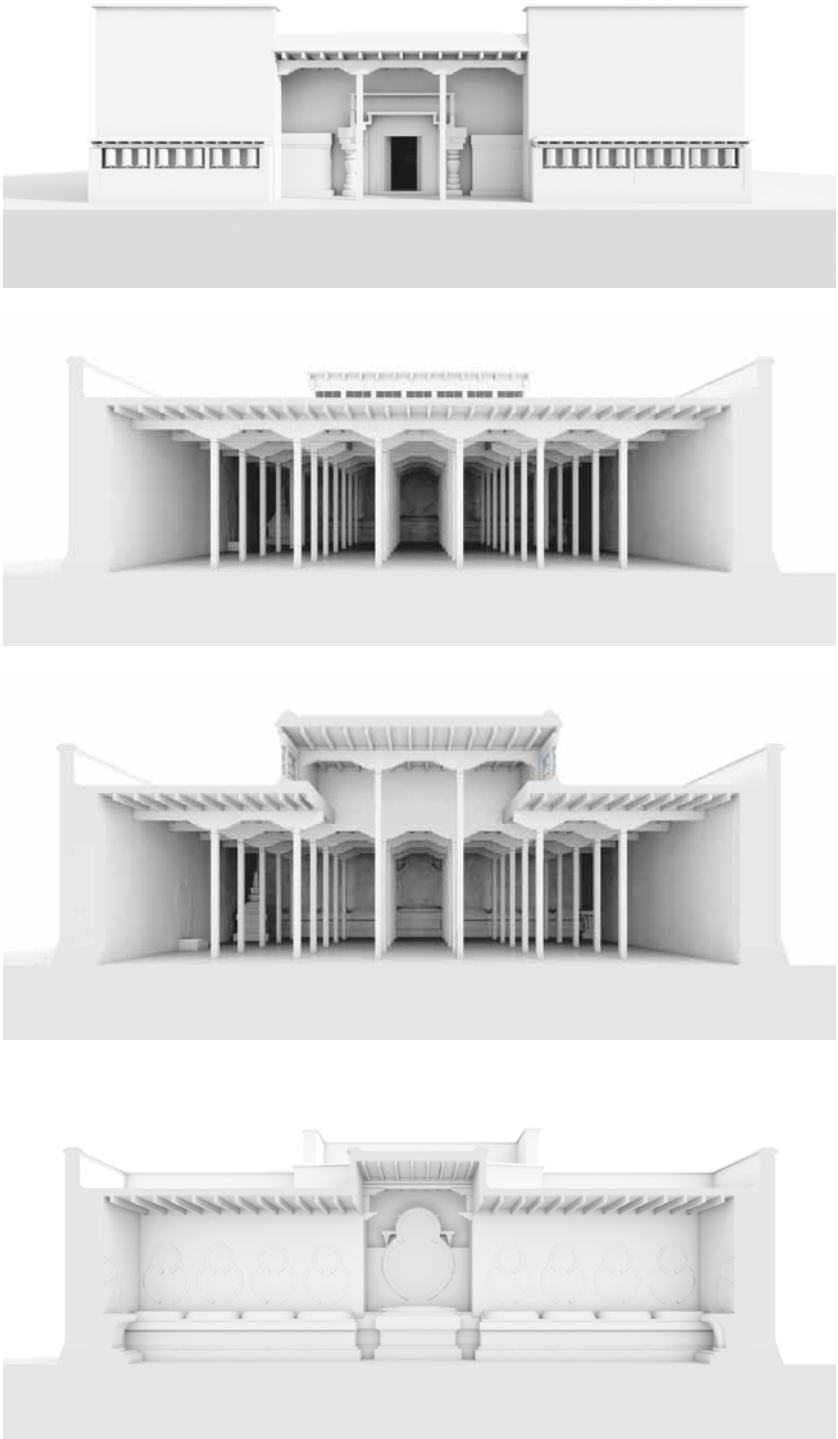
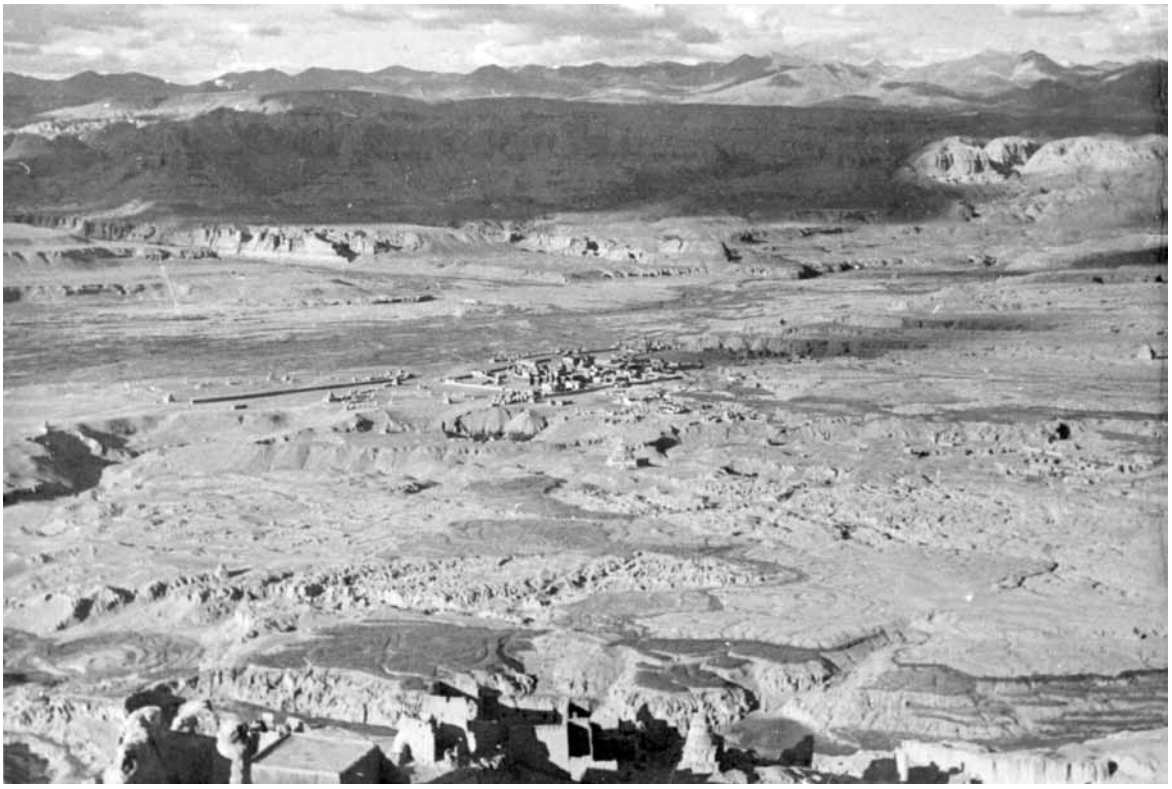


Fig. 121 Spatial representation of the White Temple. Starting with the elevation of the vestibule, the other three cross-sections below were generated through the assembly hall and in front of the apse. © Neuwirth & Auer, TU Graz 2020.

Fig. 122 Accordingly, starting with the northeast elevation, the two longitudinal sections below were generated through the hall and through the raised areas of the two lanterns which provide interior lighting in the temple. © Neuwirth & Auer, TU Graz 2020.

Fig. 123 The temple ruin as seen from the hill above. The chörten on the east side of the temple is still recognizable today, while other parts of the structures have disappeared. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 124 The Tholing monastery as seen from the southwest hill range. Chapels and residences are visible in front the ruins of former temples. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.



The temple ruin, which was surveyed in the course of our field research in 2007, is part of a formerly larger complex. This complex is situated on the mountain slope, 1.10 kilometres southwest of the Tholing monastery, offering a wide view over the river valley and the plain of Tholing. These ruins provide evidence for the buildings of the so-called *"Upper Tholing"*, which once consisted of monasteries or chapels with walls painted dark red, as well as private dwellings that served as a summer residence of the monks and fortress-like royal castles.[49]

This exposed, terraced plateau is located at an altitude of 3,700 m above sea level and is bordered by rocks that rise steeply out of the ground and a remarkable number of caves on the southwest side. A series of wall fragments and eroded chörten have been preserved here, grouped around an impressive temple ruin.

A striking, fortified, tower-like structure with protruding corner masonry is located on the northwest side of and 16 metres away from the temple. An almost square structure with a southeast-facing entrance can be found on the southwest side of and 36 metres away from of the temple. The remains of a chörten are located on the east side of and 15 metres away from the temple. Next to it, fragments of walls with different heights and structures run along the edge of the terrain, lined by rock. Different sources refer to a former palace complex and a Maitreya temple.[50]

49 In 1933 Tucci explored the ruins on the slopes above the monastic complex: *"[...]; some must have been monasteries or chapel with their walls painted dark red; some private dwellings and royal casles; in fact, we know from Andrade that the mother of the King of Guge was living here when he along with his royal patron came to visit in 1624."* TUCCI & GHERSI 1935: 157-158; HELLER 2006: 45.
50 NAMGYAL 2001: 134-135.

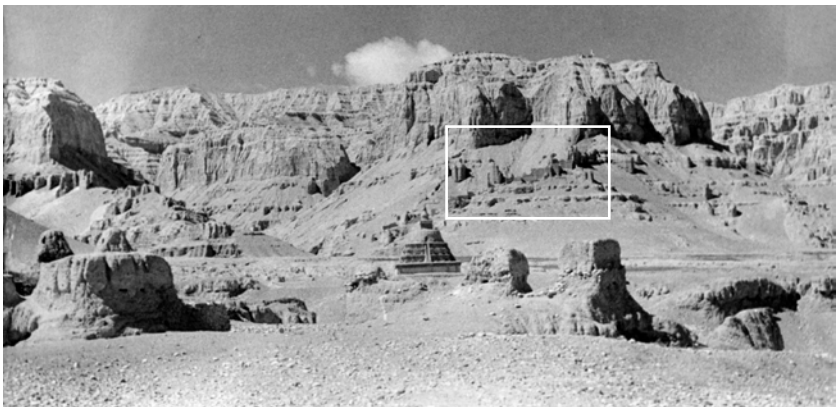


Fig. 125 The mountain slope southwest of Tholing, where the ruins are located. The site forms a terraced plateau at the foot of the steeply rising rock face. Ghersi's photographs from 1933 show that the condition of the building has changed relatively little since then. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 126 Site plan of the temple ruin on the mountain slope, southwest of the monastery of Tholing on a scale of 1:2000. © Neuwirth & Auer, TU Graz 2020.

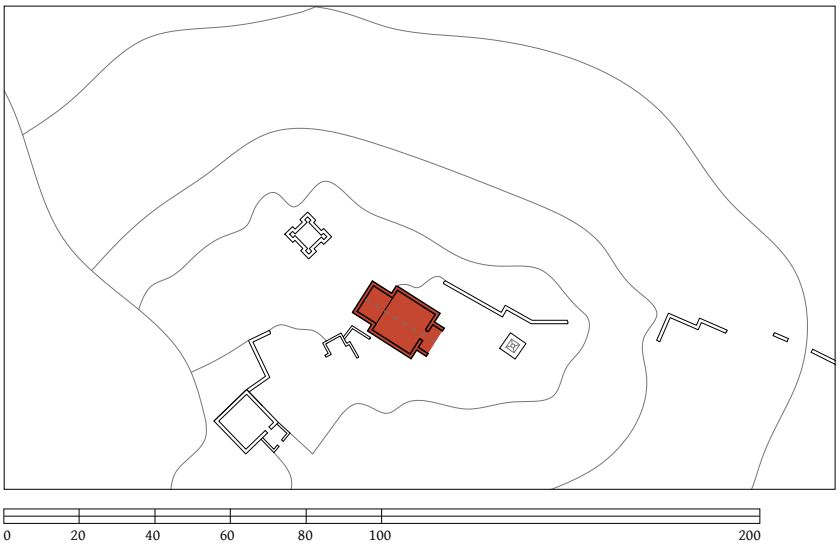


Fig. 127 Site plan of Tholing´s village structure with the temple ruin, which is located on the hillside to the southeast of the monastery. © Neuwirth & Auer, TU Graz 2020.

Fig. 128 South-eastern view of the ruins on the terraced plateau with the remains of a chörten on the east side and the remains of a chapel on the southwest side of the temple. Auer 2007.

Fig. 129 Western view of the buildings on the hillside. The walls of the temple ruin in the centre are painted dark red, and a fortified tower-like structure is located to the northwest of the temple. Auer 2007.

Fig. 130 The northeast-running façades of the temple, next to the chörten. In front of it, the remains of various wall structures are visible, which run along the edge of the terrain. Neuwirth 2007.

Fig. 131 Northern view of the temple ruin and, next to it, the fortified tower which is located northwest of the temple. The northern façade of the temple merges directly into the steeply sloping terrain. Fragments of former abutments are visible along the lateral façade. Neuwirth 2007.

Fig. 132 The entrance to the main room of the temple ruin with the wall openings and the row of beam holes in the former ceiling. Neuwirth 2007.

Fig. 133 North-eastern view of the temple's exterior walls with the height staggering of the different areas and the significantly higher apse. Neuwirth 2007.

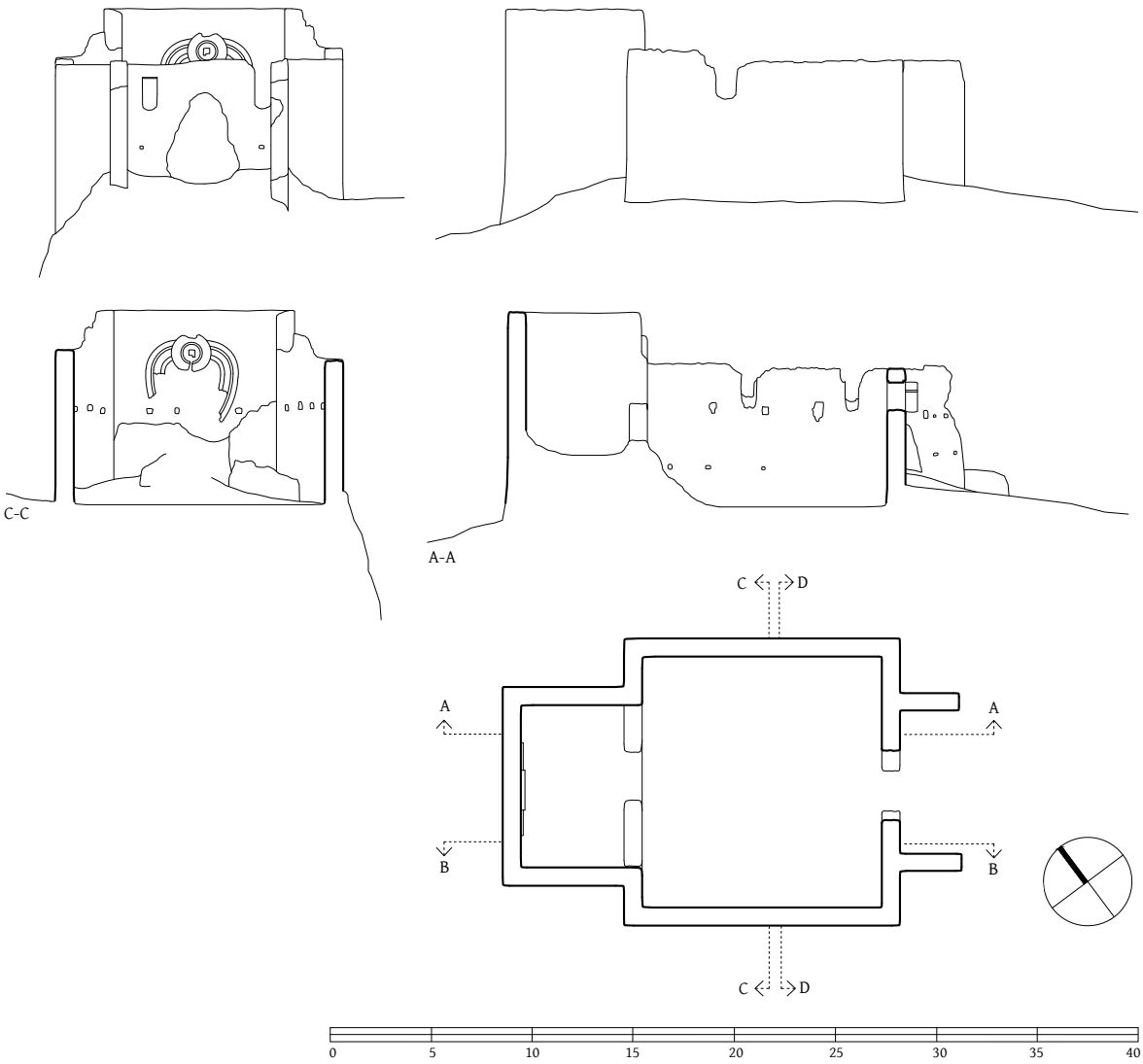


Fig. 134 Above: the southeast and the southwest elevations of the temple ruin. Middle: the corresponding cross- and longitudinal sections. Below: the floor plan. © Neuwirth & Auer, TU Graz 2020.

The temple ruin structurally consists of an entrance area, a main room and an elevated, spacious apse. The entrance faces to the southeast, the main axis deviates 32° counter-clockwise from due east. The external dimensions of the cubature are 14.22 metres in the total width and 22.54 metres in the total length over all the components.

The northwest walls of the temple ruin are located directly along the sloping edge of the terrain, so it is not possible to walk around the outside of the temple. The former vestibule is located on the southeast side and is defined by its two side walls, which rise as high as the walls of the main room.

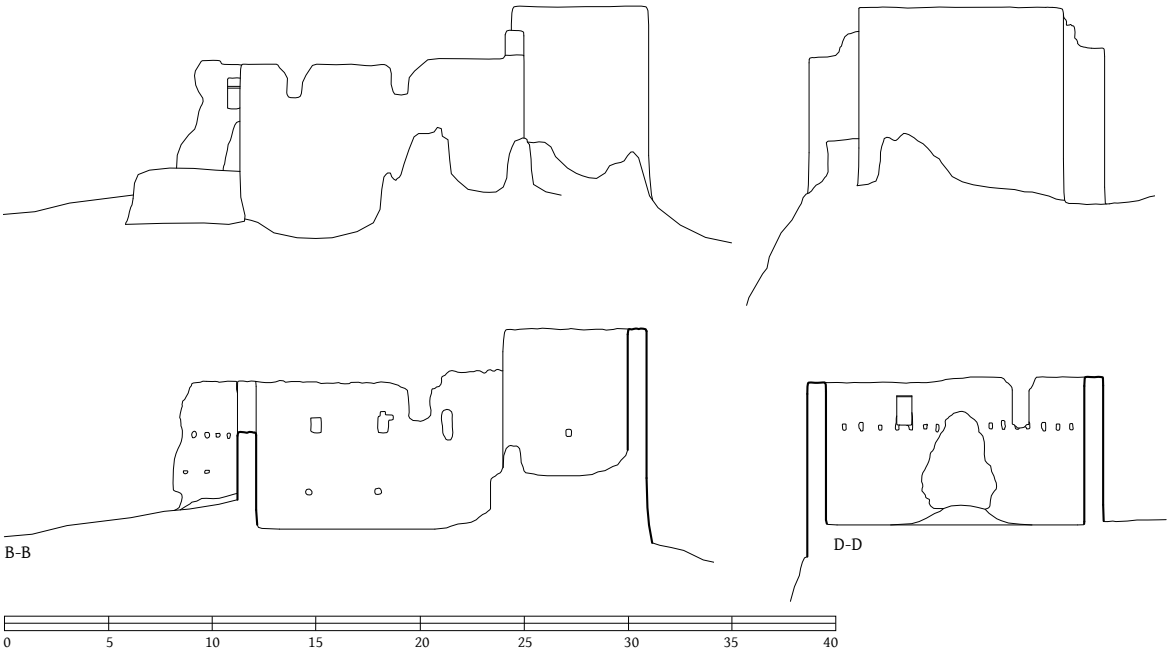


Fig. 135 Above: the northeast and the northwest elevation. Below: the longitudinal and cross-sections. © Neuwirth & Auer, TU Graz 2020.

With a width of 7.15 metres and a depth of 2.92 metres, the vestibule is considerably narrower than the main room. A row of beam holes in the former ceiling construction can be seen in the upper third of the side walls of the vestibule. Accordingly, the ceiling height in this area was about 4.60 metres, as measured from the floor level of the main room. Today, there is a lot of loose bulk material in the front area, so this room height specification in the following section also refers to the still well-defined floor level in the main room.

The access to the main hall today consists of a 4.5-metre-high, irregularly excavated hole in the middle of the southeast wall, which is 0.95 metre above the floor level of the interior. The main room, accessed by climbing over the material piled around the entrance, is almost square with a width of 12.40 metres and a depth of 11.90 metres. The side walls are 7.00 metres high on average. The holes on the lateral walls of the main room indicate the positions of the three main beams, which run transverse to the main axis. Accordingly, the former room height was about 5.20 metres. The regular row of holes in the entrance wall, leading to the main room, indicate the positions of the secondary beams. Above this row, two earlier openings in the wall are visible; the roof zones were accessed through these openings. The holes in the lower part of the wall indicate where the former interior decorations were fixed. These holes can be found both in the main hall and in the vestibule and are located at a height of approximately 1.80-2.00 metres above the floor level.

Fig. 136 Interior view of the wall between the entrance area and the main room. The beam holes can be used to reconstruct the former room height and the construction of the ceiling, which has since disappeared. Neuwirth 2007.

Fig. 137 The view from the vestibule into the main room with the apse located in the northwest. A brick wall was built directly adjacent to the corners of the apse, and separates the area from the main room today. Neuwirth 2007.

The area of the apse is located on the northwest side. Its floor level is about 2.50 metres higher than that in the main room. Due to the later brickwork seen in the side areas, the original spatial concept is no longer clearly visible; it is presumed that there were lateral steps leading up to the level of the apse. The interior of the apse is 8.00 metres wide and 6.00 metres deep, and the room height reaches 9.60 metres; thus, this room is 2.60 metres higher than the other wall levels in the temple. At a height of 2.00 metres, there are holes in the masonry on all three side walls, which indicate the fixation points of the former sculptural decoration. At the back of the apse, impressive remains of the halo´s stucco work have been preserved. This halo consists of a smaller, circular part that probably circumscribed the head of a figure and a larger part that once framed the body of the figure. Its total size is 4.60 metres in width and 4.30 metres in height. The inner straw reinforcement, which has now become visible along the fractures, increased the tensile strength of the clay parts. The halo was attached to the wall using wooden dowels from below.

The wall thicknesses of the building range between 0.85 and 0.90 metre, and the plaster surfaces of the walls are surprisingly well-preserved. Apart from the red colour on parts of the halo and on the outer façade of the temple ruin, there are no remains of any wall paintings. Traces of a former painterly design can only be found under the halo, and this design was apparently later plastically transformed.

Fig. 138 The halo's stucco work on the back of the apse wall, where the main figure of the temple once stood. Neuwirth 2007.

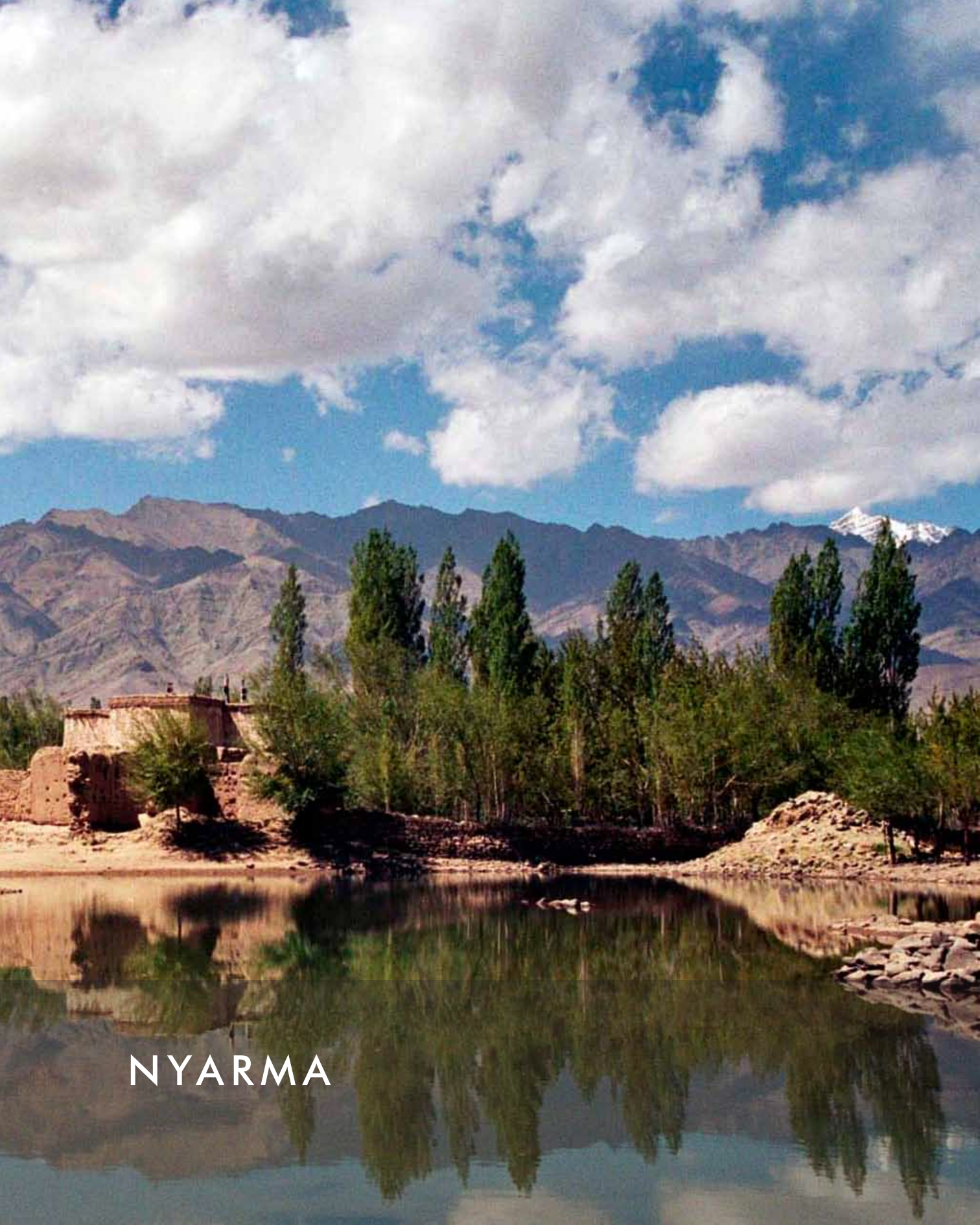

NYARMA

Fig. 139 The northern part of the sacred compound of Nyarma with the lake in front of the ruins. Auer 2003.

THE MONASTIC COMPLEX OF NYARMA

Birgit Androschin & Carmen Auer

TOPOGRAPHY AND LOCATION

The ancient monastic complex of Nyarma (Tib. *Nyar ma, Nyer ma*) is located in the wide plain of the Upper Indus River valley , 16 kilometres southeast from Leh, the capital of the district Ladakh, in the highest and northernmost Indian state of Jammu and Kashmir. Originally established by the Great Translator Rinchen Zangpo under the patronage of King Yeshé Ö in 996,[51] the site of Nyarma is a vast field of crumbling vestiges today.

The former monastery is situated on a small lake on the border of an arid mountainous region adjacent to the vegetation belt of the Indus River. The nearest settlement is the village Rambipor, which is situated to the south of the area. The surroundings are characterised by their extensive agricultural use, with scattered farm houses found between the fields. The Nyarma Fortress is located on a rocky hill to the north-west of the ruins and is a partially stone-roofed defensive monument.[52] To the northeast of the former monastery, the whitewashed stone ruins of the Dorje Chenmo Temple, dedicated to Rinchen Zangpo´s protective deity, stand on a dark hill rising from the mountain slope.

The site belongs to the administrative district of Tiksé (Tib. *Khrigs se*) Monastery, which is located on a mountain ridge that is 2.5 kilometre west of Nyarma. In 1992, the Nyarma Society was founded. The head lama of the monastery in Tiksé has presided over the association, which has the aim of guaranteeing the conservation and protection of the remaining building structures. To support this aim, new buildings have been erected on the site since 2002.

51 Jampa Panglung Rinpoche was among the first scholars to show interest in the subject. In his article published in 1983, he reviewed the historical and epigraphic sources pertaining to the establishment of Nyarma and offered descriptions of the murals found on site; PANGLUNG 1983: 282-283. Art historian Christian Luczanits also studied the monastic complex of Nyarma while discussing the early Buddhist heritage of Ladakh and the first monuments of western Tibet. LUCZANITS 2004: 29-30 and 2005: 70-73.

52 A detailed documentation of the structure was published 2013 by Quentin Devers in TIBET ARCHAEOLOGY, Internet sources.

Fig. 140 View of the Dorje Chenmo Temple above Nyarma with the monasteries of Tiksé and Shey in the background. Neuwirth 2003.

Fig. 141 The plain of the Upper Indus River valley with its vegetation belt. The ruins of Nyarma are located directly on the border of the arid foothills of the mountain slopes. Neuwirth 2003.

Fig. 142 View over the lake to the Dorje Chenmo Temple on the hillside, northeast of Nyarma. Neuwirth 2003.

Fig. 143 Nyarma´s Main Temple on the left side and the remains of the Nyarma Fortress on the hill on the right as seen from the east. Auer 2003.

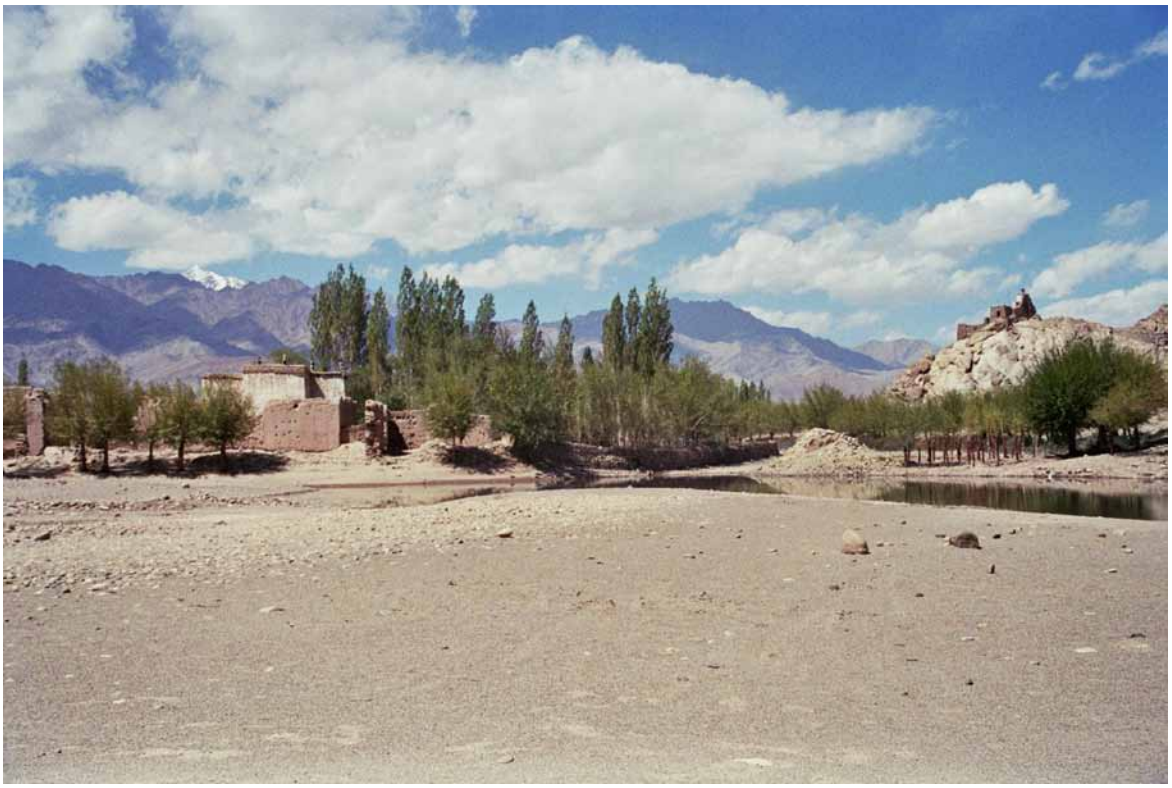


Fig. 144 Site plan of Nyarma, based on the situation in 2018. The monastery is situated on the north side of the village, between the farmland and the ascending mountain slope of the northeast hill range, whereby the ruin of a Dorje Chenmo Temple is located on the slope of the hill. © Neuwirth & Auer, TU Graz 2020.

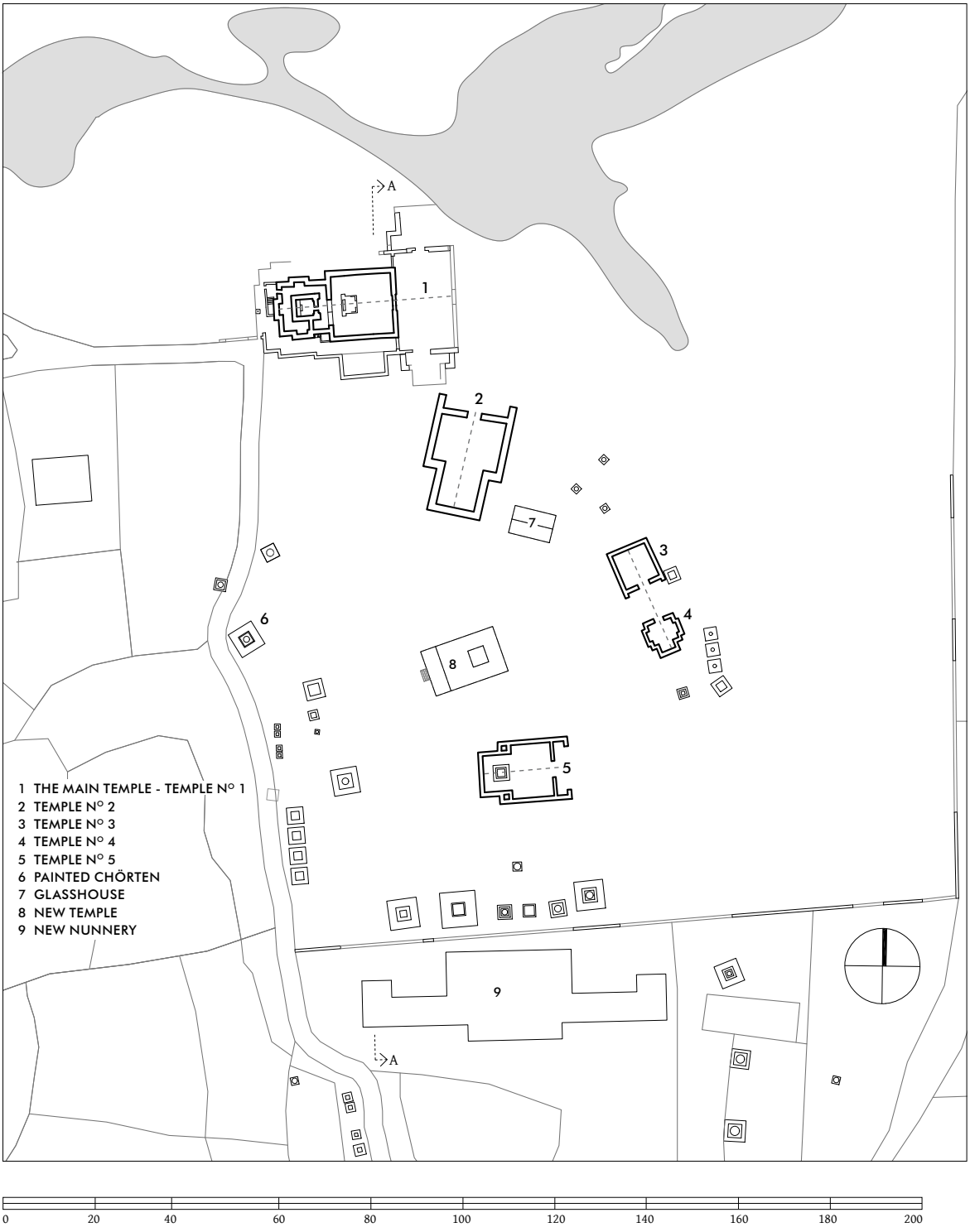
A new gompa and a glass house now stand in between the ruins, while a nunnery and a guest house are situated on the south side of the area, outside the former enclosure wall. Probably for economic reasons, gravel from the site has been used to renovate the main road along the Indus River valley.

Today, Nyarma is a vast area with scattered remains, including five temple ruins in different sizes and orientations and a large number of chörten. The largest structure – the former Main Temple – is situated to the north, directly bordering a small lake that disappears in dry summers.[53] Above this structure, one of the many chörten groups of the area is found in a slightly elevated position. Scholars believe that the monastery was already in ruinous condition in the middle of the 15th century. According to historical sources, the Dukhang Karmo in Tikse, which was built in 1447, was made of timber from the monastery of Nyarma, which had been destroyed by floods and warlike attacks.[54]

53 Two inscriptions mention a lake in connection to the early site of Nyarma. The first inscription was observed by Tucci on site; PETECH 1977: 26. The second inscription was found inside the Sumtsek in Alchi; SNELLGROVE & SKORUPSKI 1980: 138, inscription no.7. Both inscriptions were also presented by PANGLUNG 1983: 282.

54 PANGLUNG 1983: 284.

Fig. 145 Northeast view of the ruins of Nyarma of which only the wall fragments remain today. Significant groups of chörten are located to the north and south of the area. Neuwirth 2000.


A
1
2
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A
1 THE MAIN TEMPLE - TEMPLE N° 1
2 TEMPLE N° 2
3 TEMPLE N° 3
4 TEMPLE N° 4
5 TEMPLE N° 5
6 PAINTED CHÖRTEN
7 GLASSHOUSE
8 NEW TEMPLE
9 NEW NUNNERY
0
20
40
60
80
100
120
140
160
180
200

THE SACRED COMPOUND

The sacred compound of Nyarma currently consists of five temple ruins and about 46 chörten within and around the partially preserved enclosure wall. This complex is unique, both in terms of its conception and its size. The area defined by the fragments within the enclosure wall measures 160 metres in the north-south direction and 155 metres in the east-west direction. The adjoining chörten field extends for a further 100 metres to the south.[55]

The older parts of the preserved outer wall are located on the south and east sides of the area. They consist of clay bricks, some of which are heavily weathered. The wall fragments of various lengths are 0.60 to 0.80-metre-thick and between 1.20 and 2.20 metres high. The surfaces show vestiges of the former clay plaster. On the west and north sides, lower walls of river stones were piled up, which delimits the area from the adjoining agricultural land. Today, the access road is located at the northwest corner of the area.

The flat terrain shows only relatively minimal deviations from the ground levels. The terrain section reveals a marginal height difference of almost 4.50 metres over a total length of 210 metres between the southern-most chörten and the terrain to the north of the Main Temple. The terrain only drops another 2.00 metres behind the north outer wall of the main temple. The ground level of all temples are approximately at the same height. Due to the considerable accumulation of bulk material in the interior areas, excavations would be of particular interest here.[56]

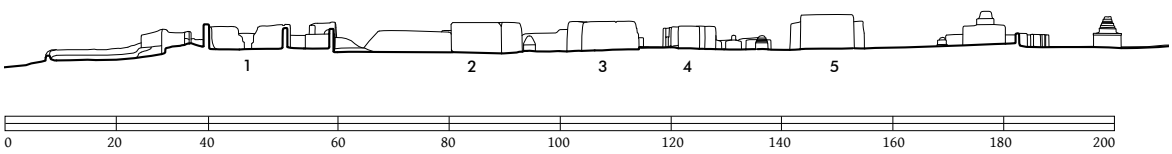
The largest and structurally most complex building is located on the north side of the area, referred to as the Main Temple or Temple No. 1. The temple´s main axis is oriented east-west with the entrance facing east.

55 During the architectural survey in Nyarma, members of the Nyarma Society provided us a Tibetan text that was later translated by Andrea Loseries. Panglung mentioned parts of the same text that describes the foundation and dimensions of the monastery complex and its surroundings. He assigns the text to the biography of Rinchen Zangpo created by a scholar from the Tiksé Monastery in 1976; PANGLUNG 1983: 283. The entire text can be found in the appendix (page 401).

56 Archaeological investigation of the foundations would provide more information about the structure and the construction phases of the monastery complex.

Fig. 146 Overleaf: The site plan of Nyarma with the five preserved structures. Some fragments of the former enclosure wall are preserved to the south and the east of the site. On the plan, the architectural structures are consecutively numbered from north to south, starting with Temple No. 1, the former Main Temple of the monastery and ending with No. 5 on the south side of the area. The relatively precise orientations toward due east of Temple No. 1 and Temple No. 5 are striking (their deviation is only 4°), but the other temples differ significantly from this orientation. The orientation of Temple No. 2 deviates 77° counter-clockwise from due east, while the orientation of Temples No. 3 and No. 4 deviates 66° clockwise from due east. © Neuwirth & Auer, TU Graz 2020.

Fig. 147 The north-south-running A-A section of the site is about 210 metres long and shows a minimal height development across the terrain. The height difference between the ruins of the Main Temple on the left side and the chörten of the southern area on the right measures 4.50 metres. © Neuwirth & Auer, TU Graz 2020.



The chapel on the upper floor, located above the cella of the Main Temple, probably was not erected until the 19th century. It is accessible via an open staircase on the west side of the Main Temple.

Temple No. 2 is found directly southeast of this chapel, only 5.60 metres away; the axis of this temple is oriented northeast-southwest with the entrance facing northeast. Temples No. 3 and No. 4 are located 29 metres southeast of Temple No. 2 and refer directly to each other. Unlike the other buildings of the complex, these two buildings are rather small and have some of the same characteristics as chapels. The main axis of both temples runs southeast-northwest, and both buildings can be accessed from their common intermediate area, so the entrance of Temple No. 3 faces southeast and the entrance of Temple No. 4 faces northwest.

Fig. 148 The southern part of the area as seen from the mountain slope to the northeast. It shows the state of the complex in 2003. On the left side, Temple No. 5 with the entrance facing east. Next to it on the right side, Temples No. 3 and 4, with their entrances facing one another. The spacious disposition of the ruins demonstrates that Nyarma was once an extended monastery complex. Neuwirth 2003.

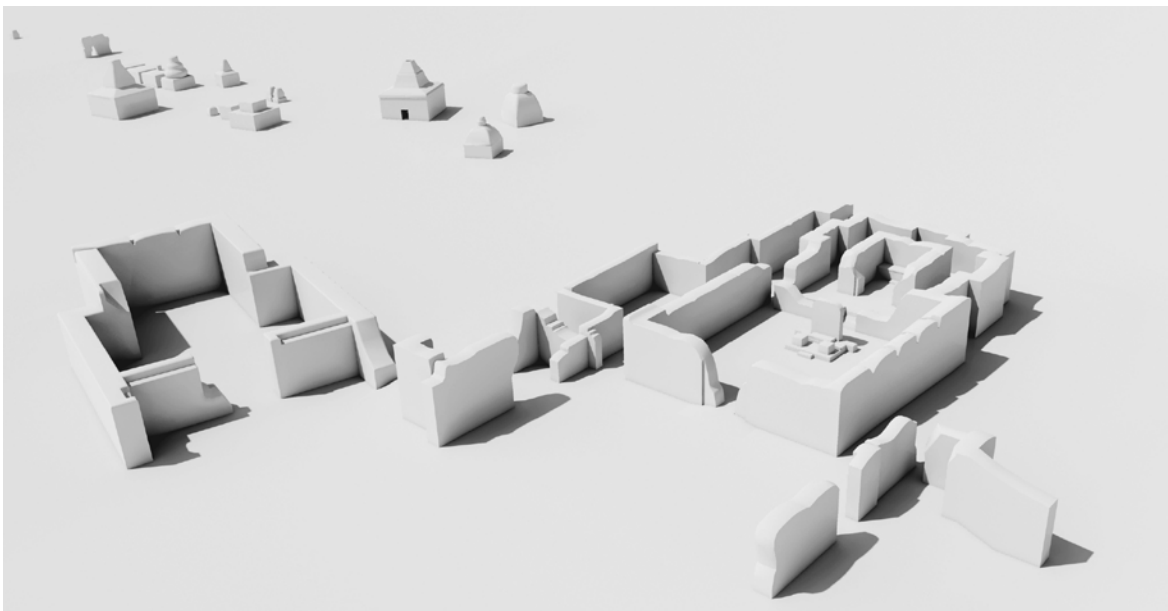
Temple No. 5 completes the building stock on the south side of the area, 83.40 metres away from Temple No. 1. Like the Main Temple, it runs nearly exact from east to west with its entrance facing east.

Most of the outer walls of the temple ruins have been preserved at almost room-height, ranging in heights from 3.30 metres at Temple No. 4 to 6.15 metres at Temple No 5. Today, the constructive and decorative wooden parts of the temples have disappeared, and only the upper edges of the towering walls and some of the plug holes give an indication of the former constructive and decorative design. Wall paintings have survived only in one chörten; therefore, this is known as the Painted Chörten (No. 6), which is situated on the western border of the area.

Fig. 149 The northern part of the area, with the Main Temple or Temple No. 1 on the right side and Temple No. 2 next to it. The chapel above the western part of the Main Temple ruin can be distinguished from the ancient building substance by its whitewashed facades. The area borders on a small lake which was, as a characteristic of the site, repeatedly mentioned in ancient inscriptions and forms a natural border to the ascending mountain slopes. Neuwirth 2003.

Fig. 150 Overleaf: Bird's eye view of the preserved building structures of Nyarma. The spatial representation was created on the basis of the building surveys conducted in 2003 and 2004. © Neuwirth & Auer, TU Graz 2020.

Fig. 151 Below: The northeast view of the compound and the two largest structures, Temple No. 1 and Temple No. 2. The later erected chapel above the cella of Temple No. 1 was deliberately left out in order to improve the visibility of the structures of the previous building. © Neuwirth & Auer, TU Graz 2020.



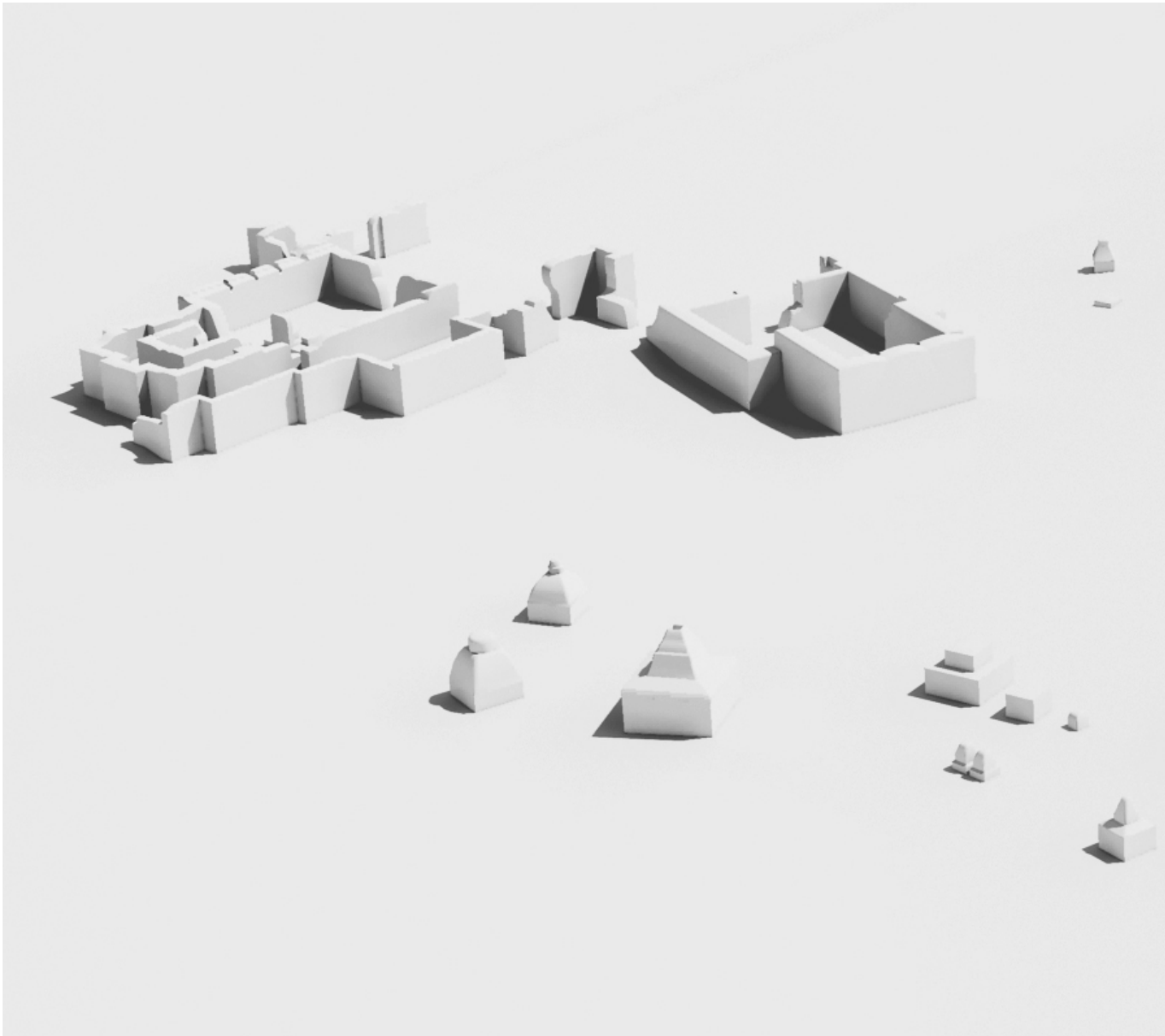
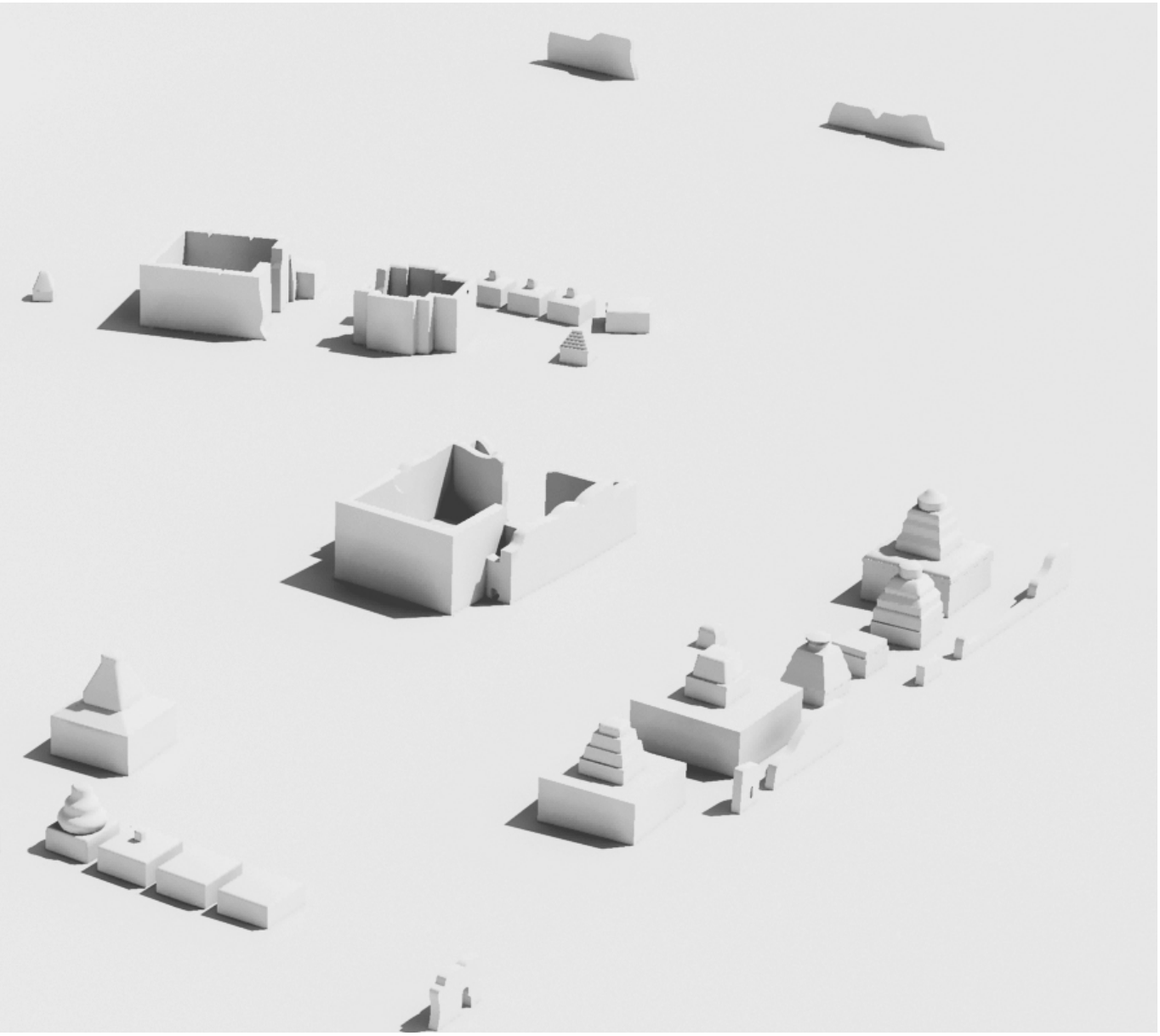


Fig. 152 The southwest view of the ruins with Temple No. 1 and Temple No. 2 on the left and Temples No. 3, 4 and 5 on the right. © Neuwirth & Auer, TU Graz 2020.



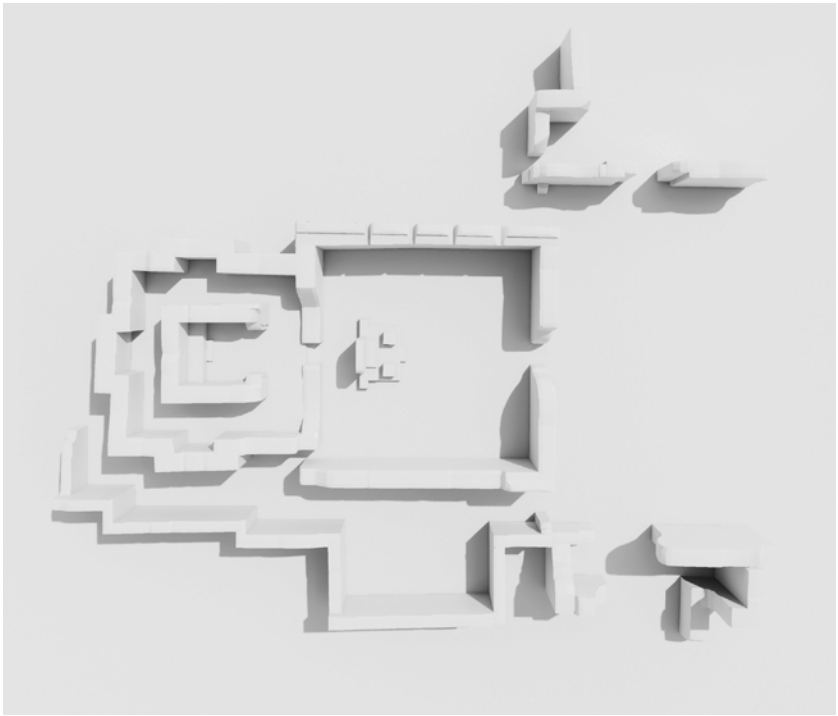


Fig. 153 Bird´s eye view of Temple No. 1, also known as the Main Temple of Nyarma. The dimensions on the outside walls, including the still-preserved walls of the ambulatory, are about 42.30 metres in length and 34.60 metres in width. © Neuwirth & Auer, TU Graz 2020.

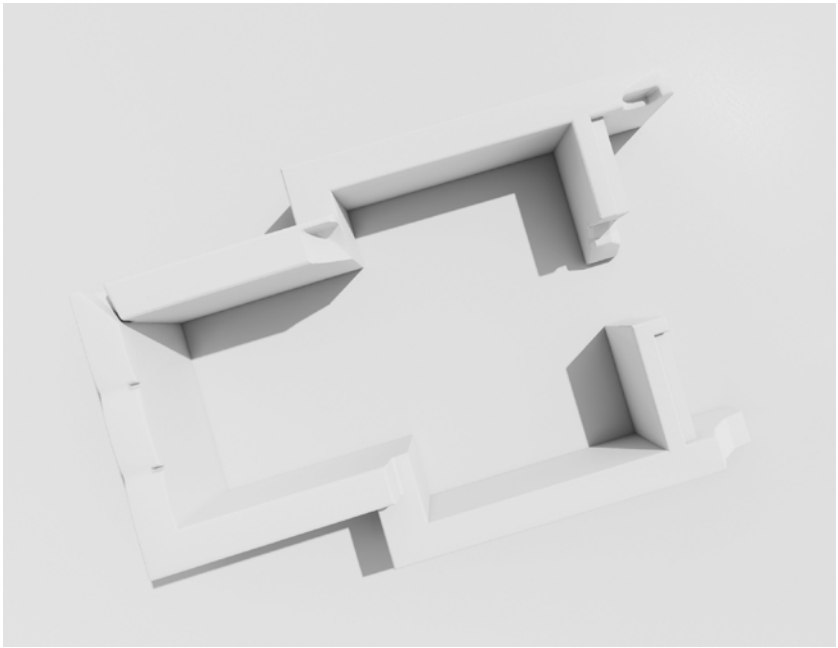


Fig. 154 Bird´s eye view of Temple No. 2, whose external cubature is 26.10 metres long and 17.10 metres wide. © Neuwirth & Auer, TU Graz 2020.

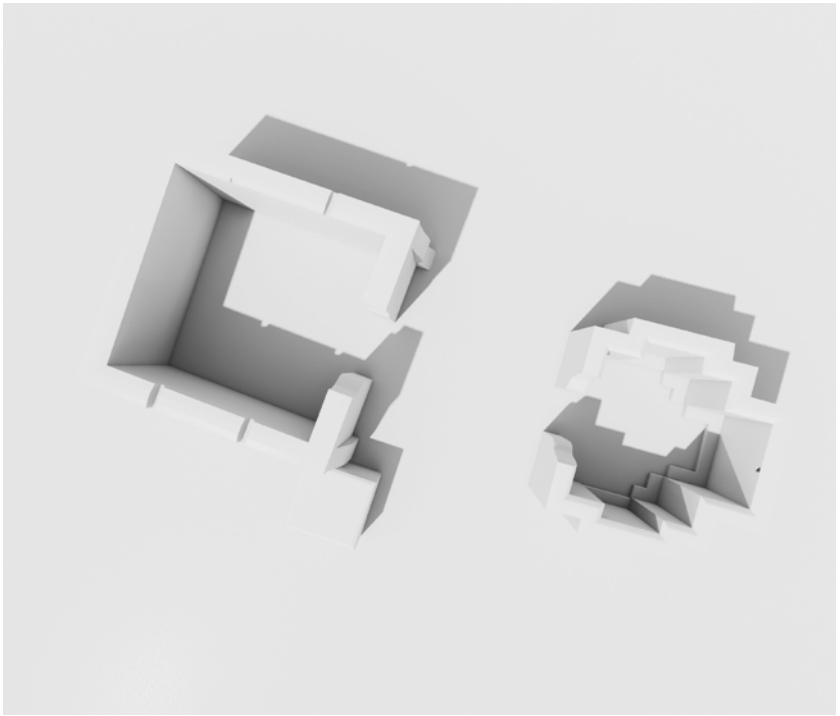


Fig. 155 Bird´s eye view of Temple No. 3 and No. 4. The larger Temple No. 3 is 10.50 metres long and 9.34 metres wide, and the smaller Temple No. 4 is 8.50 metres long and 8.40 metres wide. The distance between the two entrances is 7.20 metres. © Neuwirth & Auer, TU Graz 2020.

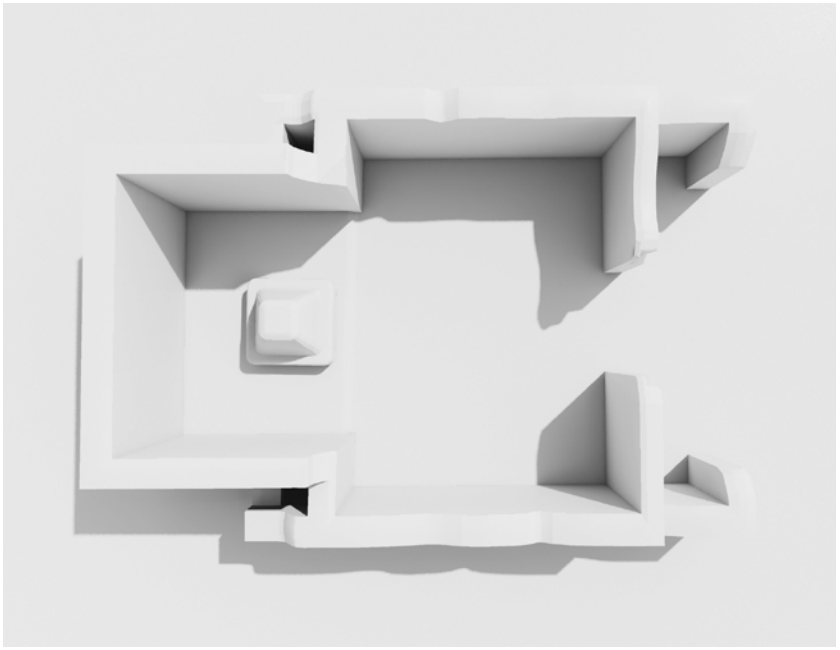


Fig. 156 Bird´s eye view of Temple No. 5, whose external cubature is 19.85 metres long and 13.70 metres wide. The side length of the chörten in the apse is 3.50 metres. © Neuwirth & Auer, TU Graz 2020.

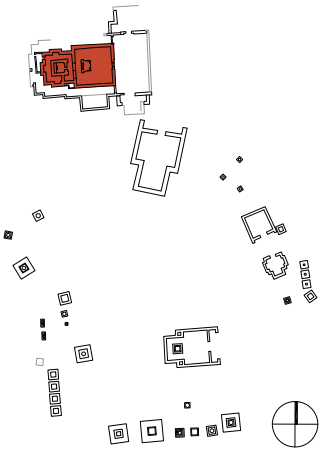


Fig. 157 The Main Temple as seen from the northeast with the former entrance area in front of the building. The assembly hall could originally be entered from this area. The whitewashed chapel on the first floor towers over the ruins of the monastic complex. Neuwirth 2003.

TEMPLE NO. 1 - THE MAIN TEMPLE

Temple No. 1 is the largest and most complex building in the area, whose room structure consists of an entrance area, an assembly hall, a cella with an inner ambulatory and parts of an outer ambulatory, organised along a main axis, which is oriented almost exactly from east to west. The overall dimensions on the outside walls, including the outer ambulatory that is still preserved, are 42 metres in length and 35 metres in width. The structure is presently characterised by room-high wall remains on the ground floor. The whitewashed chapel, the Dorje Chenmo Temple, towers over these remains. This temple was erected above the cella and its ambulatory at the western part of the building.

The entrance to the Main Temple was originally situated to the east, where two lateral walls still embrace an open forecourt. This forecourt once served as an entrance area and measures 21.20 metres in width and 12 metres in depth. During the architectural survey in 2003, we noted that a front wall that once closed off the forecourt to the east had collapsed down to its foundations, whereby the opening of the former entrance was still visible in the middle area. According to the narration of a local resident, Sonam Rigdan, the front wall still existed during his childhood.

The remnants of two accessible lateral rooms are situated on both sides of the entrance hall. These two side chapels, which were presumably assigned to protection deities, show an apse-like rear part with a similar size and proportions. In the northern wall of the entrance hall, joints and inhomogeneous structures were observed in the masonry. This could indicate that the chapels were built in several building phases.

A 15.20-metre-long, 1.00-metre-thick and 3.00-metre-high wall to the west limits the forecourt on the side toward the former assembly hall. The accesses to the outer ambulatory around the hall and the cella were situated on both sides of this wall. These 2.50-metre-wide openings have been closed by a mudbrick wall, which is up to 2.70 metres high. The about 0.75-metre-thick and 3.30-metre -high, preserved ambulatory walls on the south side stand 2.95 metres away from the walls of the inner core and follow their shape. Wall remains to the north indicate that the ambulatory continued symmetrically on this side. An additional room in the south, probably a further chapel, was later separated from the ambulatory by a wall and used as a provisory class room before the construction of a new school building near the monastic area.

Fig. 158 The preserved walls of the outer ambulatory of the Main Temple and the later-erected chapel above the western part of the remains as seen from the south. Neuwirth 2003.

Fig. 159 The preserved walls as seen from the north. Here, only fragments of the outer ambulatory are visible in the foundation area. Neuwirth 2003.

Fig. 160 The remnants of the entrance area of the Main Temple with its two lateral wall structures as seen from east. There are the two side entrances to the outer ambulatory, next to the bricked entrance to the assembly hall in the middle, which were also bricked up. Neuwirth 2003

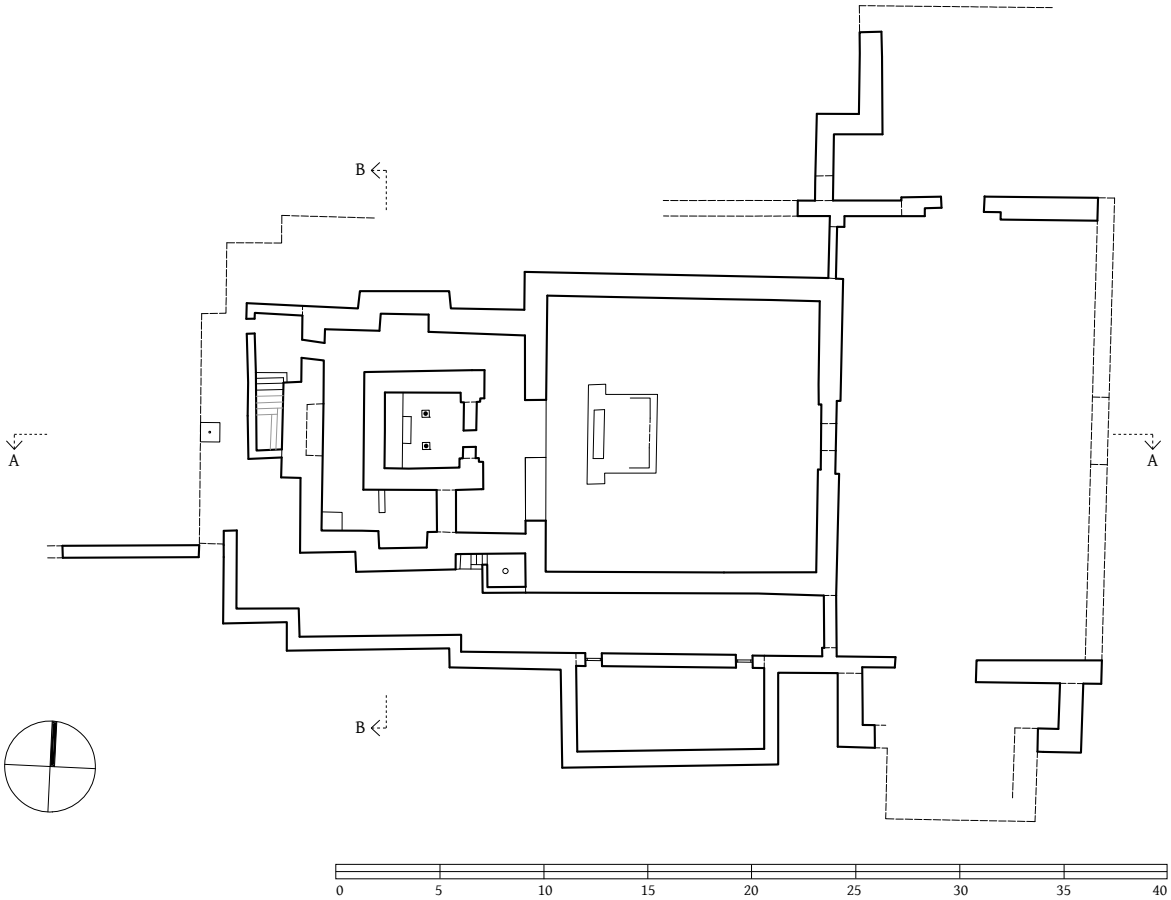


Fig. 161 The ground plan shows the rectangular forecourt to the east with the wall fragments of two lateral rooms, the square assembly hall in the middle and the cella with its ambulatory to the west. To the south, the walls of the former outer ambulatory are preserved. © Neuwirth & Auer, TU Graz 2020.

The entrance opening to the assembly hall was closed by a lower, bricked-up wall. The remaining walls of the hall (ca. 1.10 m thick) enclose a square room with a side length of 13.10 metres. Like the other wall remains, these remains stand without a roof. On the upper edge of the walls, notches are discernible that were left by the main beams of the ceiling construction after they were removed. So, it can be assumed that the interior of the assembly hall once was about 3.00 metres in height.

Even though the temple has been exposed to weather for centuries, vestiges of halos and plug holes of the former sculptural decoration are preserved on the interior walls of the hall, and particularly on both sides of the walled-up entrance and on the north part of the west wall. Remnants of a throne-like pedestal, presumably the base of the main statue, stand in the west part of the hall, in front of the passage to the cella. Behind the pedestal, some weathered steps lead up to the cella and its ambulatory, whose floor level lies 0.90 metre higher than that of the assembly hall.

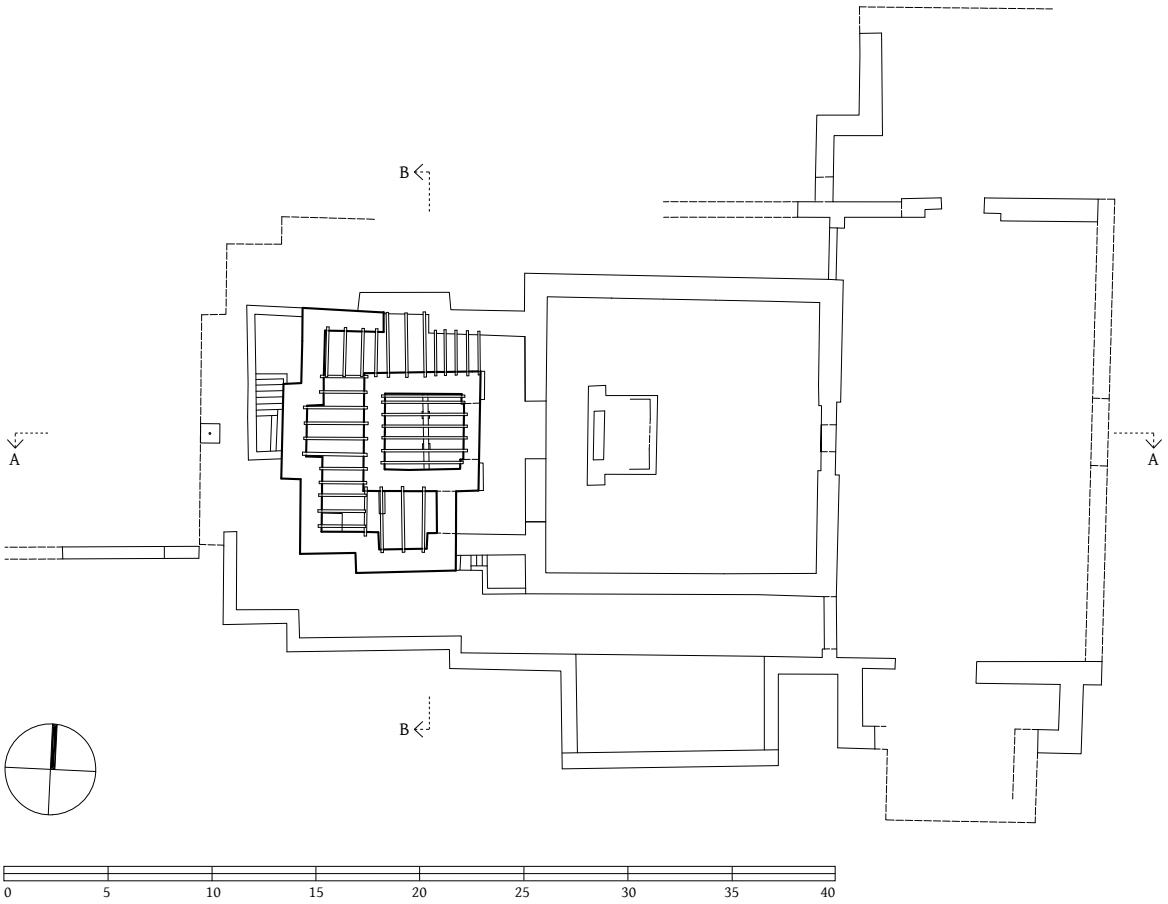


Fig. 162 The ceiling plan shows the beam layer above the cella and the inner ambulatory at the ground floor. © Neuwirth & Auer, TU Graz 2020.

The inner ambulatory, which once led around the cella, is about 2.00 metres wide. The 2.80-metre-high and 1.00-metre-thick, windowless walls of the ambulatory are plastered. Along the central axes on the south, west and north sides, the passage widens through 0.80-metre-deep niches, resulting in a cross-shaped layout. In the west part, the niche was bricked up. Except the east part, the ambulatory was covered with a ceiling, consisting of small wooden beams and branches, which was presumably built in the course of the extension on the upper floor. Today, the south part of the ambulatory passage is enclosed by a wall that supports the structure of the upper floor.

The entrance to the cella faces east, towards the assembly hall. Today, the square room of the former cella is accessible through a 0.80-metre-wide wall opening with a wooden door frame. Adjacent wall areas with a greater wall thickness indicate that the cella opening originally measured 2.70 metres.

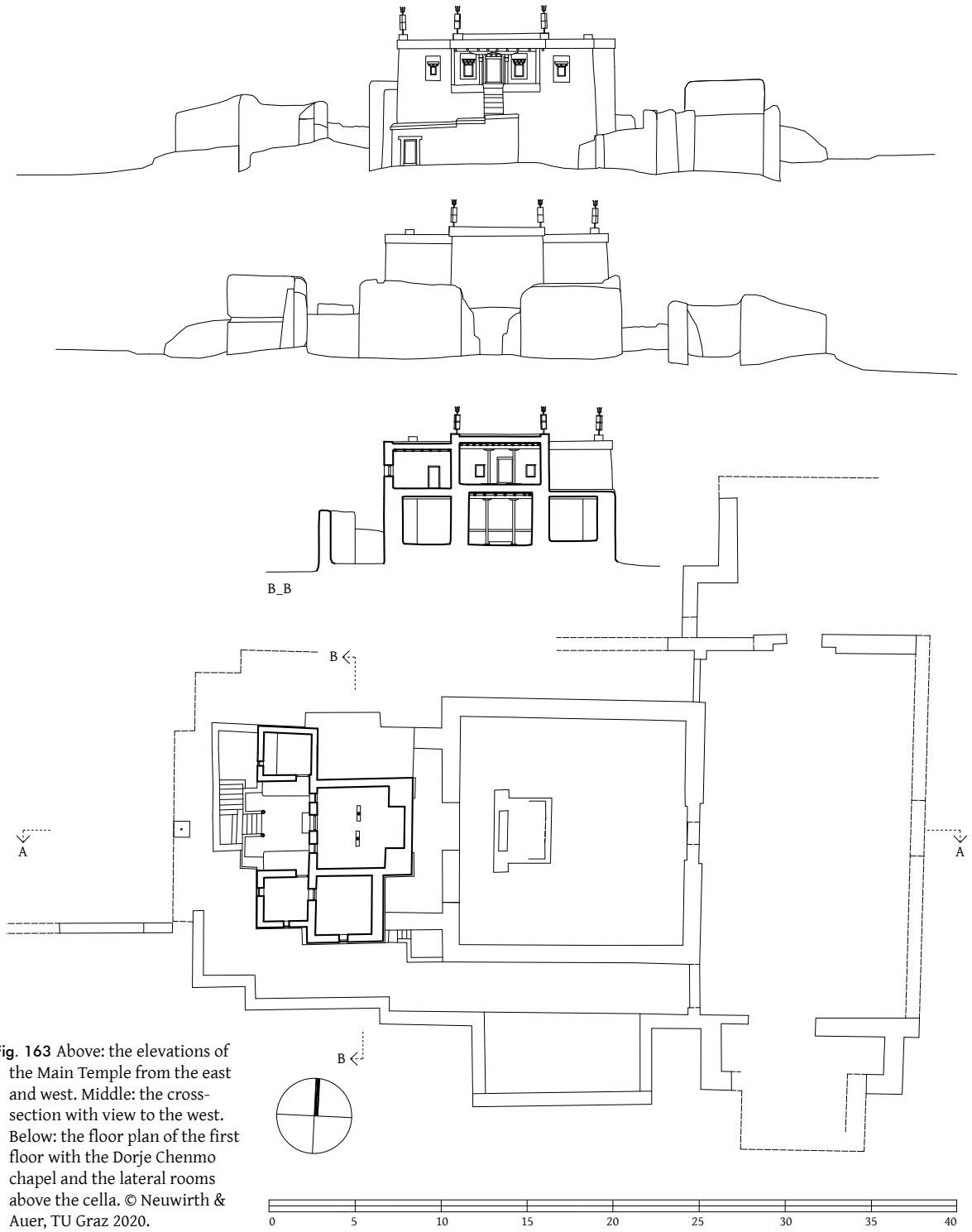


Fig. 163 Above: the elevations of the Main Temple from the east and west. Middle: the cross-section with view to the west. Below: the floor plan of the first floor with the Dorje Chenmo chapel and the lateral rooms above the cella. © Neuwirth & Auer, TU Graz 2020.

Fig. 164 Above: the elevation of the Main Temple from the south and north. Below: the longitudinal section through the forecourt, the assembly hall and the cella with the inner ambulatory on the ground floor and the chapel on the first floor. The sections clearly show the increase in the floor levels from the original entrance in the east, through the assembly hall and up to the ambulatory and the cella, which was built at the highest level of the interior due to its importance as the core of the complex. © Neuwirth & Auer, TU Graz 2020.

The square interior of the cella has a side length of 3.60 metres and a room height of 2.80 metres. Its 1.00-metre-thick walls are still mainly plastered. Directly opposite the entrance, a stone pedestal is situated in front of the western wall. Two wooden pillars with console capitals that stand on stone bases bear the main transverse beam , and two more pillars were placed in the middle area as additional reinforcement. Above these, secondary beams and small branches form the ceiling.

The mudbricks of Temple No. 1, including the walls of the forecourt and the surrounding ambulatory, have the dimensions of 0.40/0.42 x 0.25/0.26 x 0.10 metre.[57] If one entered the building from the east, the logical sequence to the rooms in terms of their hierarchical organization in space became clear: One moved from the lowest level of the entrance hall and the outer ambulatory and up to the large assembly hall, then further up to the inner ambulatory with its inner core at the highest level.
The preserved walls make it possible to reconstruct the former ground plan of the Main Temple, which is conceptually similar to the Main Temple of Tabo (see page 355 and page 375).

57 The archaeological survey of Kath Howard mentioned a slightly differing mudbrick size of 0.39 x 0.23 x 0.09 metre. HOWARD 1995: 70.

Fig. 165 View to the former entrance inside of the assembly hall, which has been bricked up. The remains of the throne-like bricked pedestal are located on the west side of the assembly hall. On the side walls of the assembly hall, the former position of the main beams can be identified along the upper edge. Auer 2003.

Fig. 166 The masonry on the east side of the assembly hall clearly shows the traces of the former opening. Vestiges of former halos and plug holes are preserved on both sides of the original entrance opening. Auer 2003.

Fig. 167 View from the assembly hall to the cella to the west of the temple. In the foreground, remnants of the throne-like pedestal and vestiges of halos and plugholes are preserved in the plaster of the transversal wall on the right. The access to the cella on the ground floor is located behind it, and the opening to the inner ambulatory on its south side was walled up. Directly above the cella and the inner ambulatory, a chapel was erected on the upper floor. Auer 2003.

Fig. 168 The original wall opening of the cella was bricked up, but is still visible on the masonry around the current door. On its left, the inner ambulatory has been closed by a bricked wall to support the lateral rooms on the first floor. Auer 2003.

Fig. 169 View of the Main Temple from the west with the entrance to the ground floor as well as to the Dorje Chenmo Temple on the first floor. Neuwirth 2003.

Fig. 170 The open porch on the first floor serves as a vestibule for the Dorje Chenmo chapel and the annexed rooms. Neuwirth 2003.

Fig. 171 The interior of the Dorje Chenmo chapel with its altar on the east side, opposite the vestibule. Bauer 2009.

Today, the edificial complex of the Main Temple is accessible from the opposite side, through a wooden door in a 3.00-metre-high, whitewashed boundary wall in the west. On the right-hand side, an outside stairway made of stones with a bricked parapet leads to the Dorje Chenmo chapel on the first floor. Continuing straight ahead on the ground floor, an opening in the western wall of the inner ambulatory allows access to the former cella and the former assembly hall.

The Dorje Chenmo chapel, situated on top of the former cella and its ambulatory was built more recently and is still in use. Two wooden pillars frame the small open porch; its walls are decorated with mural paintings, and the door and window openings are painted with black frames.

Two steps lead into the central room, which measures internally 4.70 metres in width, 4.20 metres in depth and 2.30 metres in height. Two wooden pillars bear the roof structure, which consists of a transversal wooden main beam, smaller secondary beams and branches that form the basis of the mud flat roof. The walls are about 0.50 metre thick, which significantly tapers the upper storey of the building. The eastern wall has a 2.40-metre-wide and 0.90-metre-deep niche with a 0.60-metre-high, bricked pedestal.

On the north side of the open porch, there is one annexed room that is 2.50 metres wide and 2.80 metres deep, whereas two adjacent rooms are found on the south side. The first room on the south side, which is accessible from the porch, is 2.40 metres in width and 2.55 metres in depth and is used as a kitchen. The adjoining rear room is 4.80 metres in width and 4.60 metres in depth and is used as a dormitory.

Fig. 172 Left: The former cella on the ground floor of the main temple with the altar pedestal and the stone step in front of the west wall. Rössl 2005.

Fig. 173 Right: The wooden ceiling of the cella that bears the chapel on the first floor. The two wooden pillars are reinforced by two more supports, because the main beam has broken in the middle due to the additional load from above. Rössl 2005.

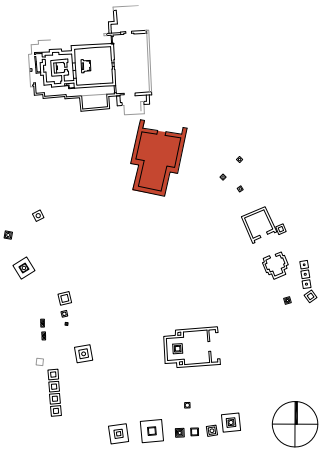


Fig. 174 North-eastern view of Temple No. 2 with its entrance area facing northeast. On the interior walls, the former position of the beams and the interior decoration can be reconstructed through the remaining holes. Neuwirth 2003.

TEMPLE NO. 2

Temple No. 2 is located to the southeast of Temple No. 1, with a distance of 5.60 metres between the north side wall of the entrance area of Temple No. 2 and the preserved wall of the south lateral room in Temple No. 1. The main axis of Temple No. 2 is oriented to the northeast, with a deviation of 77° counter-clockwise from due east, while the access faces northeast. The building consists of three different parts: an entrance area that opens to the front, a main room that is as wide as the vestibule and a narrower but higher rear room.
The external dimensions of the temple are 25.70 metres in length and 17.10 metres in width. The height of the walls ranges from 3.90 metres in the entrance area to 5.60 metres in the rear part. The mudbrick walls are between 1.35 and 1.90 metres thick, and the surfaces outside are not plastered, whereas the individual bricks are clearly discernible. According to Kath Howard´s survey, the mudbrick size of the walls is 0.42 x 0.25 x 0.1 metre.[58]

The entrance area is 14.10 metres wide; two lateral walls, projecting outward 2.60 and 2.80 metres, extend the internal walls of the main hall. They are believed to have once formed an open vestibule. On the northeast side wall, the supports for the former main beams of the vestibule´s ceiling are still visible, and the height of the secondary beams can be seen on the entrance wall. The opening of the main room has partially collapsed, as has the right side wall of the vestibule. The left lower edge of the opening, where a small part of the plaster has been preserved, allows one to draw conclusions regarding the original width of the entrance, which once measured about 3.00 metres.

The main room measures internally 14.20 metres in width, 10.86 meters in depth on the northwest side and 10.09 metres on the southeast side, forming a slightly warped rectangular layout. Due to its large dimensions, the room could have been used as an assembly hall. The smaller rear room represents a recessed apse and has inner dimensions of 8.40 metres in width and 9.35 metres in depth. The inside walls of the rear part range from 5.10 to 5.50 metres high, and the upper edges of the walls show notches where the former beam bearings were fixed. The floor level of the room areas remains essentially the same; the observed differences are mainly due to loose bulk material.

58 HOWARD 1995: 70.

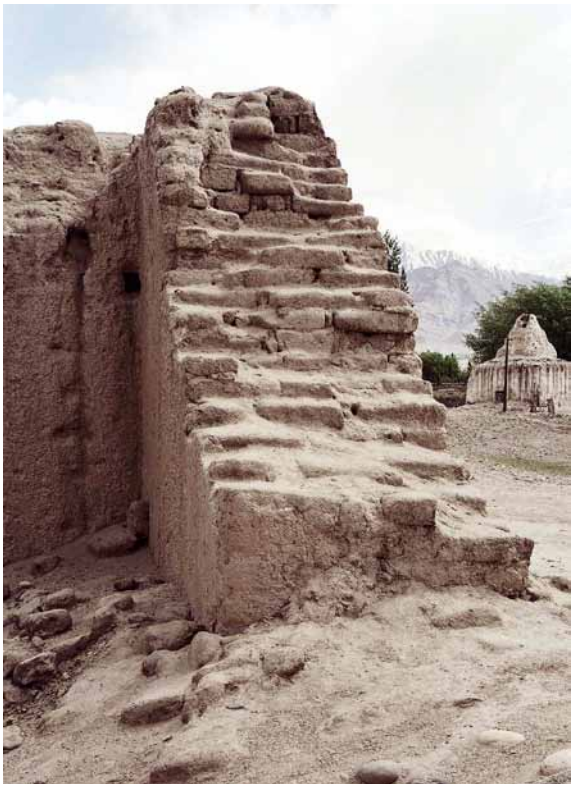
Fig. 175 The south-western view with the elevated back wall of Temple No. 2. Neuwirth 2003.

Fig. 176 The non-plastered outer walls of Temple No. 2 as seen from the southeast, showing the different height development of the structure. The condition of the masonry suggests that the wall surfaces of the temple have never been plastered outside. Neuwirth 2003.

Fig. 177 The entrance area to the northeast with the opening into the hall. Auer 2003.

Fig. 178 Left: Masonry structure of the northeast side wall of the vestibule. The lower layers consist of river stones of different sizes, overlaid with clay brickwork. Neuwirth 2009.

Fig. 179 Right: The brickwork on the northwest side wall of the vestibule shows the masonry structure of the horizontal layers. Neuwirth 2003.



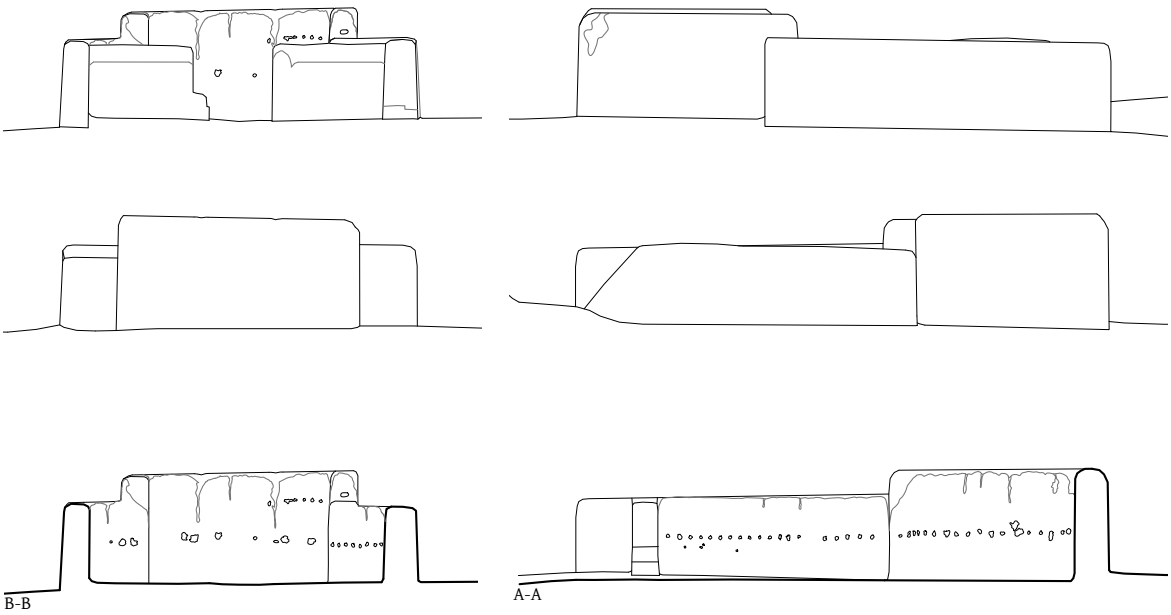


Fig. 180 Above: the elevations of Temple No. 2 from the northeast and southeast. Middle: the elevations from the southwest and northwest. Below: the longitudinal section A-A and the cross-section B-B. © Neuwirth & Auer, TU Graz 2020.

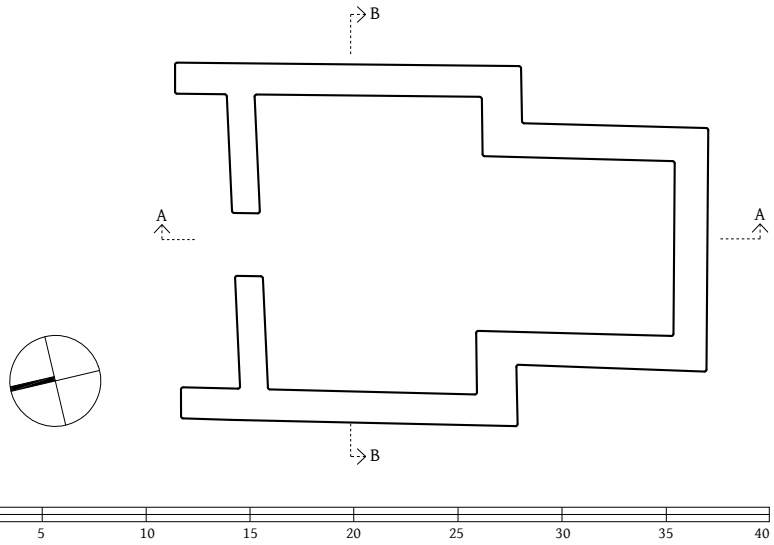


Fig. 181 The ground plan of Temple No. 2 with the entrance on its northeast side. © Neuwirth & Auer, TU Graz 2020.

The walls are entirely plastered on the inside. At a height of approximately 2.00 metres, the inner walls of both rooms show regularly spaced holes, which supposedly held the wooden nails that were used to fix statues. So, we can imagine that the rooms of Temple No. 2 were richly adorned with sculptures.

Fig. 182 The scaled photomontage of the inner wall surfaces of the temple allows us to draw conclusions about the former interior equipment. For instance, the northwest wall in the main hall shows holes remaining from the former sculptures with different sizes. If the development of all inner walls is compared, we see that the sculptures were arranged in one horizontal line. © Neuwirth & Auer, TU Graz 2020.

Fig. 183 View into the rear part of Temple No. 2 with the clearly visible differences in height between the rear and the front areas. Auer 2003.

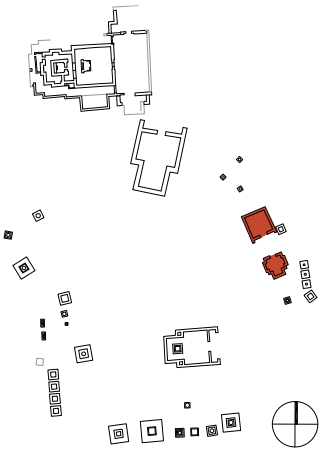


Fig. 184 Temples No. 3 and No. 4 as seen from the south. The ensemble has a common space between the buildings, so the two entrances face each other. Neuwirth 2003.

TEMPLE NO. 3 AND NO. 4

These two smaller edifices are situated to the southeast of Temple No. 1 and Temple No. 2, at a distance of 28.60 metres from the southern corner of Temple No. 2 to the western corner of Temple No. 3. Both temples form a clearly defined ensemble which is arranged along a common northwest-southeast running axis, with a deviation of 66° clockwise from due east. The entrances of both temples are located 7.20 metres away from and facing each other; thus, the space in between becomes a kind of common forecourt. The ground level of both temples is 0.60 metre on average higher inside than outside, whereby the common space between the two temples is also elevated.

Temple No. 3 consists of a nearly square room with a small entrance area. The exterior walls of this room enclose a cubature which is 10.50 metres long, 9.34 metres wide and 5.20 metres high on average. On the eastern corner, the remains of a chörten stand with a side length of 2.90 metres. On the southeast side, two lateral walls project 0.70 metre into the outdoor space and enclose a narrow entrance area, which was probably an open vestibule. The 2.65-metre-wide entrance faces southeast. The interior is 7.84 metres wide and 7.91 metres deep on the longer sides, with a height of about 4.60 metres. The 0.90-metre-thick walls are still completely plastered inside and outside, but the mudbricks are visible on the broken side of the vestibule wall, with a size of 0.40 x 0.25 x 0.10 metre. The interior wall surfaces are homogeneous and do not show any holes or other traces of former decoration on the weathered plaster surfaces.

Temple No. 4 is positioned directly opposite Temple No. 3 with its entrance facing northwest. It has a rectangular floor plan with a main niche along its longitudinal axis, opposite the entrance, and two side niches along the transverse axis. Measured from the outside, the temple is 8.50 metres long, 8.40 metres wide and up to 4.10 metres high. The entrance, which is 2.00 metres wide, allows access to the interior, which measures 5.40 metres in width and 4.60 metres in depth, recessing into a 3.15-metre-wide and 2.00-metre-deep niche. The lateral niches are 2.20 metres wide and range from 0.60 metre (northeast) to 0.75 metre (southwest) deep. The thicknesses of the walls are about 0.90 metre, and the height inside varies between 3.50 and 3.75 metres. The walls are plastered on the inside and outside. Inside, several plug holes from the former sculptural decoration can be observed. The remains of bricked pedestals can also be observed in the corners. Here, the surveyed mudbrick size of the walls is also 0.40 x 0.25 x 0.10 metre

Fig. 185 The south-western view of Temple No. 3 on the left and Temple No. 4 on the right, showing the different heights of the temples as well as the space between, where the entrances are located. The wall surfaces of the ensemble are both completely plastered inside and outside. Neuwirth 2003.

Fig. 186 The north-eastern view of Temple No. 4 with its characteristic niches in the cardinal directions. A weathered breakout can be found above in the middle of the façade. Auer 2003.

Fig. 187 The north-eastern view of Temple No. 3, which is slightly larger than Temple No. 4. The remains of a chörten are located next to the side wall of the vestibule at the eastern corner. Auer 2003.

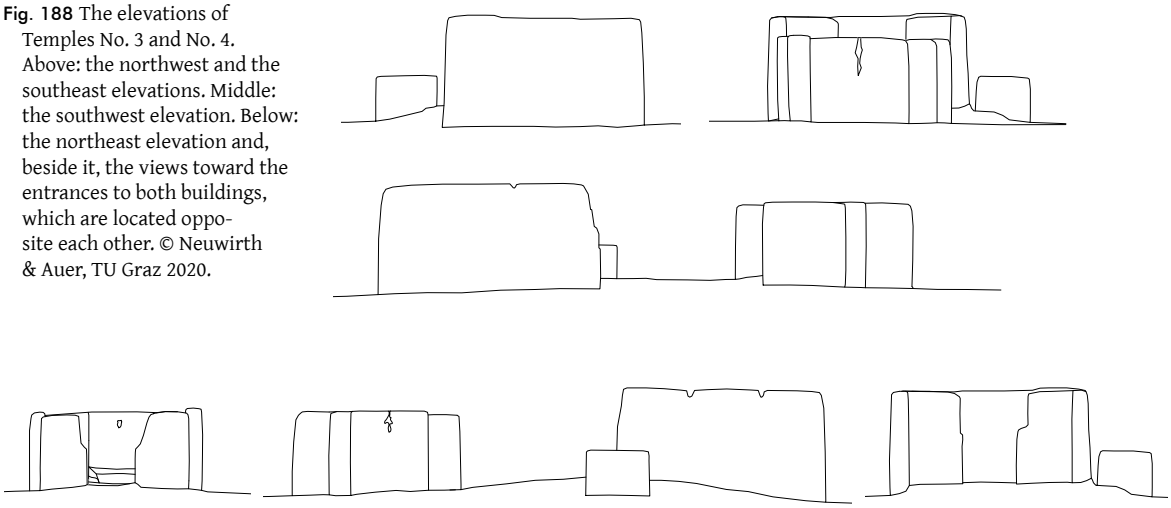


Fig. 188 The elevations of Temples No. 3 and No. 4. Above: the northwest and the southeast elevations. Middle: the southwest elevation. Below: the northeast elevation and, beside it, the views toward the entrances to both buildings, which are located opposite each other. © Neuwirth & Auer, TU Graz 2020.

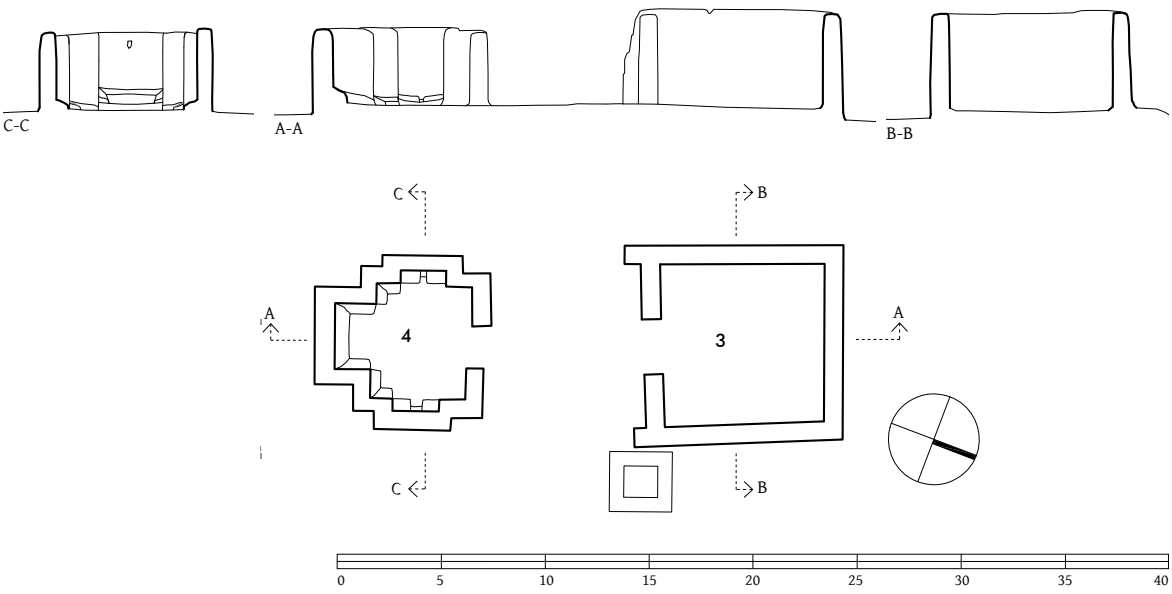


Fig. 189 The ground plans of Temples No. 3 and No. 4 with the corresponding longitudinal and cross-sections. © Neuwirth & Auer, TU Graz 2020.

Fig. 190 Line of sight from the interior of Temple No. 4 to Temple No. 3. Above: the still relatively well-defined entrance openings, whereby the wall breakouts extend from the point where the door lintels were once positioned. Auer 2004.

Fig. 191 The interior of Temple No. 4 with its main niche opposite the entrance. In the lower wall area, the remains of the former wall pedestals are still visible. A few holes in the walls indicate the former attachment points of figures that once stood here. Auer 2004.

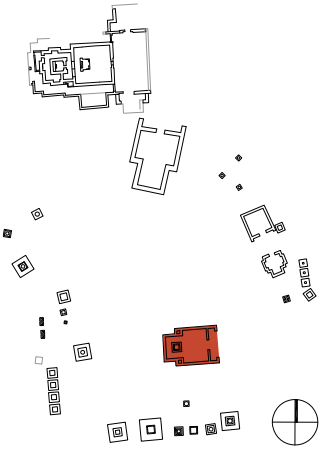


Fig. 192 Temple No. 5 as seen from northeast with its entrance facing east, located to the south of the area with its entrance facing east. Neuwirth 2003.

TEMPLE NO. 5

Temple No. 5 is the southern-most building of the sacred compound, located at a distance of 83.40 metres from Temple No. 1. It has the same orientation as the Main Temple with the entrance facing nearly due east (only a 4° counter-clockwise deviation). The building is 19.85 metres long and 13.70 metres wide on the outside and is spatially divided into three different parts with different heights, which are arranged symmetrically along the main axis.

The first part consists of an 11.70-metre-wide and 2.30-metre-deep vestibule, formed by two 4.20-metre-high angular walls with a 9.45-metre-wide opening on its east side. The side walls extend the lateral walls of the main hall, which is accessible through a 3.53-metre-wide wall opening.

The second part, an 11.70-metre-wide and, on the longer side, 9.00-metre-deep rectangular room, which was supposedly the former temple assembly hall, has 5–5.30-metre-high, plastered walls without any traces of constructive wooden components. The upper edges of the side walls show that two main transverse beams originally supported the ceiling construction.

The third part of the structure, which is connected to the main room on the west side, measures 7.90 metres in width and 6.00 metres in depth and has walls that are up to 6.60 metres high. In this apse, a strongly weathered, 2.90-metre-high chörten stands in the middle axis, equidistant by 2.20 metres from the three surrounding walls. The side length of the base measures about 3.50 metres. Its uncovered foundation consists mainly of round river stones, whereas the upper part is composed by smaller round stones bound with clay. Two small, square, 1.00-metre-deep, closed chambers reinforce the two corners. They result from the recess between hall and apse. The interior of the southern one is visible through a small opening on its west side at the ground level.

The interior floor level has no visible gradations and is 0.40 metre on average below the exterior level. The wall thicknesses vary from 0.68 metre for the dividing wall between the vestibule and the main hall to 0.95 metre for the supporting side walls. The surveyed mudbrick sizes of the walls are 0.38 x 0.23 x 0.10 metre.

Fig. 193 South-western view of Temple No. 5 with the higher walls of the apse. The opening of the southern chamber is found in the lateral connection to the lower walls of the hall, and this opening is only accessible from this side. Auer 2003.

Fig. 194 The southern view, showing the three different parts of the temple with the different heights of the vestibule to the east, the main hall and the apse to the west. Neuwirth 2003.

Fig. 195 Line of sight from the entrance to the apse of the temple, where the remains of a chörten are located. Neuwirth 2003.

Fig. 196 The elevations of Temple No. 5. Above: the west and north elevations. Below: the east and south elevations. © Neuwirth & Auer, TU Graz 2020.

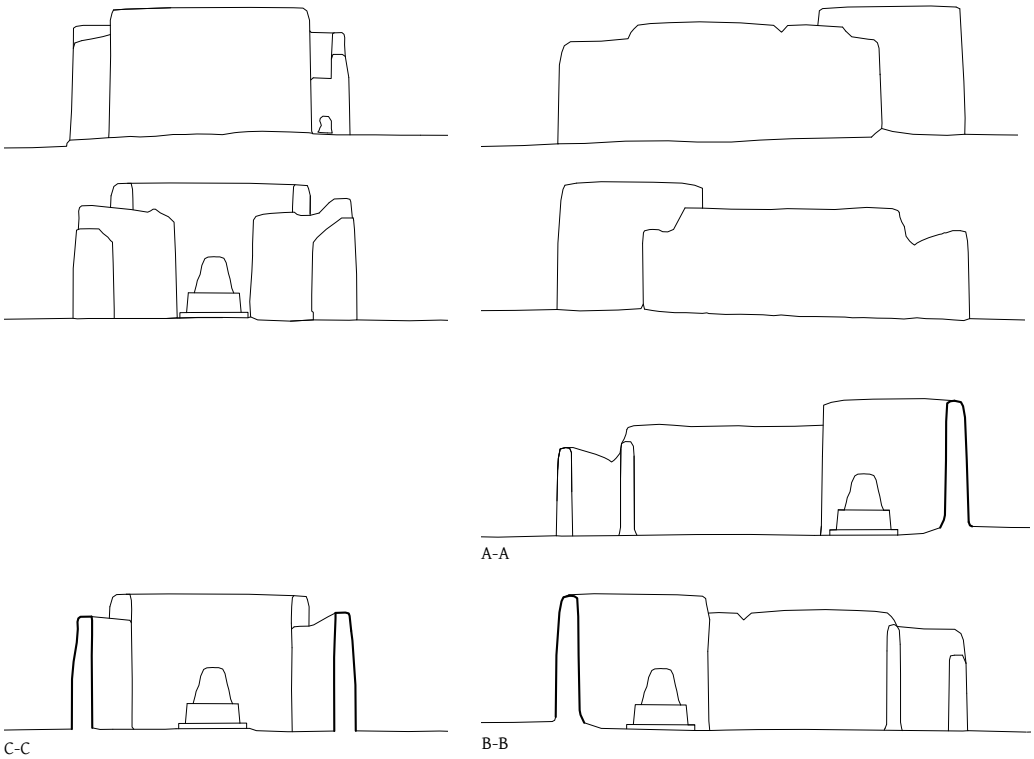


Fig. 197 The ground plan of Temple No. 5 with the corresponding longitudinal section A-A and B-B, and the cross-section C-C. © Neuwirth & Auer, TU Graz 2020.

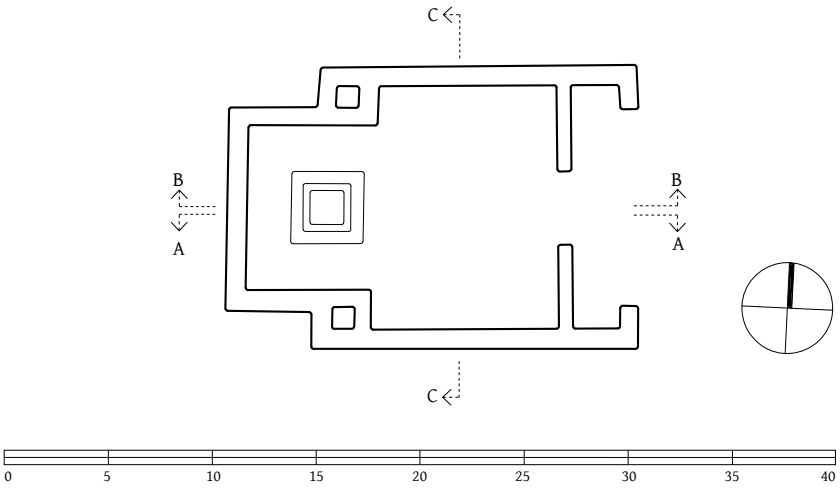


Fig. 198 The inner surfaces of the walls of the chambers, which are laterally connected to the apse walls, are non-plastered. Both chambers were originally inaccessible. Neuwirth 2003

Fig. 199 View from the vestibule into the apse niche at the rear of Temple No. 5; the remains of a chörten are preserved in the apse. Neuwirth 2003.

Fig. 200 A row of three weathered chörten on the east side of Temple No. 4 with side lengths between 2.70 and 2.80 metres. Due to the absence of the plaster layer, the underlying construction becomes visible. Luczanits 2009.

Fig. 201 Three huge chörten standing on the south side of the area, directly in front of the still-existing fragments of the surrounding wall. The side lengths are between 6.50 metres and 7.70 metres, the height of the base is 3.40 metres on average and about 6 metres at most. Luczanits 2009.

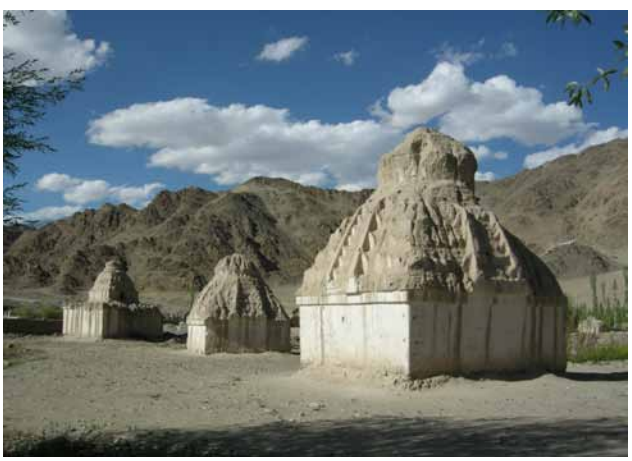


Fig. 202 Another group of three chörten to the south, outside the walled area, with a stepped superstructure above the square base. The side lengths range from 5.20 metres to 5.60 metres, and the heights up to the top range from 5.50 to 6.30 metres. Luczanits 2009.

THE CHÖRTEN OF THE AREA

The five preserved large temple structures in the sacred compound of Nyarma are surrounded by a large number of chörten that differ strongly in terms of their shapes, sizes and their states of preservation. The architectural survey conducted in 2003 localised 46 chörten within or close to the former enclosure wall. Approximately 15 more chörten are located in a more elevated position to the north of the area on the hill, towards the ancient fortress of Nyarma. Other chörten can be found in the agricultural area towards the Indus River.[59]

The differences in the states of preservation and the variation in the typologies of the chörten indicate that they originate from different construction periods that cannot be identified. Nevertheless, the building principles of the Buddhist chörten architecture, which are based on simple geometric forms, can be found in all of the examples existing in Nyarma: A square base supports an upwardly tapered, stepped or hemispherical structure that bears the crowning part on the top.

The more weathered examples show that their inner structure consists of clay bricks, mixed with round river stones, which is the same construction as used for the foundations of the buildings. According to the results of other surveys, it can be assumed that all chörten contain a vertical axis or core and frequently a hollow inner space. In Nyarma, most of the chörten are without decorating elements, except some stucco remains on some bases and the whitewash on the surfaces. Only one represents a special type of chörten with an accessible interior, in which remains of wall paintings have been preserved.

59 According to a text of the Tiksé Monastery, more than hundred big and small chörten, filled with Tsatsas and marked with numerous mantras in the Lantsa script, block prints, or similar imprints, were located at the site. PANLUNG 1983: 283.

Fig. 203 Left: Two small chörten located outside the walled enclosure on the west side of the area. Auer 2004.

Fig. 204 Right: One of the large chörten next to the southern part of the enclosure wall. Despite the weathering, the original building structure, which tapers gradually towards the top, is still clearly visible. The side length of the base is 6.30 metres, the height of the base is about 3.10 metres and it reaches a maximum height of 6.20 metres. Neuwirth 2003.

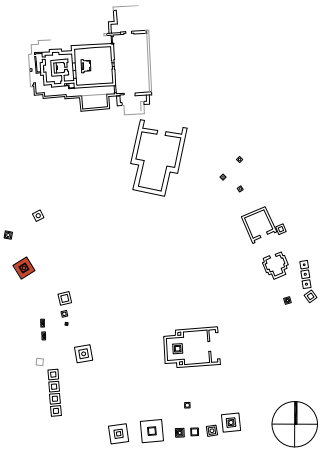


Fig. 205 North-eastern view of the painted chörten. Traces of weathering on the outside and the inside because of the lack of the structure on its top. The entrance was closed with stones to protect the painting in the interior. Auer 2003.

One of the preserved and large chörten in the western part of the area is the so-called Painted Chörten. Kath Howard identified this as a "Lotsava mChod-rten", referring to the characteristically tall Lotsava plinth.[60] Externally unremarkable and weathered, it is accessible through a small entrance opening that faces northeast and shows mural paintings on its internal walls.

The external dimensions of the chörten´s square base are 5.85 metres, its height is around 3.50 metres and the top of the stepped superstructure reaches 6.20 metres. Internally, the two lateral walls (southeast and southwest) measure 2.90 metres, whereas the entrance wall and its opposite wall are shorter with 2.50 metres. At the time of the survey in August 2003, the entrance opening measured 0.80 metre in width and 1.10 metres in height and was provisionally closed with stones. Pictures taken in 2009 show that the hole has been enlarged at the bottom and a wooden door has been installed to protect the interior from vandalism.

The parts of the wall where the plaster has been destroyed show that round river stones bound with clay were used as the main construction material for the chörten. Dressed stone beams rest on painted stone corbels, two on each lateral wall, as shown in the cross-section . The corbel vault is made of mudbricks in the upper part and round river stones in the lower part. The coronating top of the chörten is missing so that natural light and rain come in and corrode the plaster and the murals internally.

60 HOWARD 1995: 65.

Fig. 206 Northern view of the group with two chörten next to the painted one; these are located in the western part of the area. Auer 2004.

Fig. 207 View upwards into the corbel vault of the chörten, which is made of mudbricks in the upper part and round river stones in the lower part. Luczanits 2009

Fig. 208 Roof construction with the round opening at the top. Auer 2003.

Fig. 209 The remaining murals on the northeast wall close to the low entrance-opening. The bearing stone elements of the roof construction are supported by painted stone corbels. Neuwirth 2003.

Fig. 210 The stone corbel on the southeast wall and a mural painting depicting a monk with a Pandita hat as main figure. Auer 2003.

Fig. 211 Details of the murals in the upper area between the stone corbels on the southeast wall. Auer 2003.

Fig. 212 Details at the corner of the southeast wall. Auer 2003.

What makes the chörten exceptional are the partially preserved, high-quality paintings with detailed drawings on the four inner walls, depicting mainly fragmented, figurative representations of Buddhas, Bodhisattvas, protective deities, monks and historical persons. They are illustrated in aligned groups of equally sized figures that are graduated according to their importance. Decorative ribbands separate the various images and frame the entrance opening, the corners and the upper and bottom edges of the walls.

The mural paintings display a great deal of painting detail with mainly white and different shades of red, brown and blue used. It can be observed that the paintings on the walls were accomplished on a thin additional layer of plaster and show more detailed underdrawings than the figures on the corbels. A figure on the southern wall could represent Tsongkhapa (1357-1419), which suggests that the murals on the walls were not completed before the mid-15th century, whereas the corbel drawings and traces of red colour on the ceiling are presumably dated earlier. [61]

61 PANGLUNG 1983: 287.

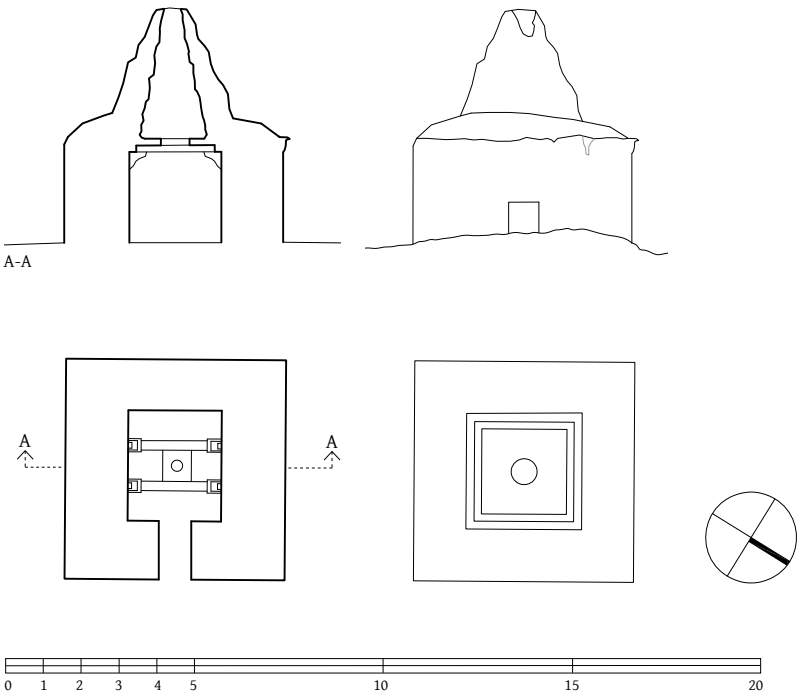


Fig. 213 The ground plan of the painted chörten with the corresponding elevation, the roof plan and the elevation with the entrance on the northeast side. © Neuwirth & Auer, TU Graz 2020.


TABO

Fig. 214 The monastery of Tabo as seen from the western hill range. The area of the monastery lies in the middle of the fertile plain, on the north bank of the Spiti River. Neuwirth 2002.

THE MONASTIC COMPLEX OF TABO

Holger Neuwirth & Carmen Auer

TOPOGRAPHY AND LOCATION

Tabo (Tib. *Ta-po*) is located in the lower Spiti valley, a rugged mountain valley in the north-eastern part of the Indian state of Himachal Pradesh at an altitude of 3280 metres. It is currently a medium-size village with about 135 households and a population of about 600 people.[62] The district of Lahoul and Spiti is bordered by Ladakh in the north, by the Kullu district and the Kinnaur district in the south and by the Tibet Autonomous Region of China in the east. One reaches the Spiti Valley when coming from the north via the Rohtang Pass and via the Kunzum Pass from Manali in the Kullu Valley to get to Kaza, the administrative centre of Spiti. Down the river, past Dangkhar, one arrives in Tabo. Coming from the south along the Sutlej River via Rekong Peo, the administrative centre of Kinnaur, one reaches the confluence of the Spiti River and the Sutlej. Upstream, immediately after reaching the village of Lari, a wide valley opens up, and the visitor has the first view of the village and the monastery of Tabo on the north bank of the Spiti River. From this point, one can see the remains of a series of chörten that lead to Tabo and to the monastery,[63] which is situated on the plain to the south of the village.[64]

Today, the enclosed temple complex is located in the centre of the village. New monastery and administrative buildings, the Serkhong School, residential and commercial buildings are situated on the east and south side of this complex. To the west, barley fields extend up to the monastery wall, which are successively replaced by apple orchards. Houses with residential and commercial uses are situated along the road that passes through the north half of the valley. There are numerous caves located in the rocky slopes above the road on the north side of the valley. One of these caves was extended to form the so-called Cave Monastery, and a narrow footpath from the valley leads up to it.

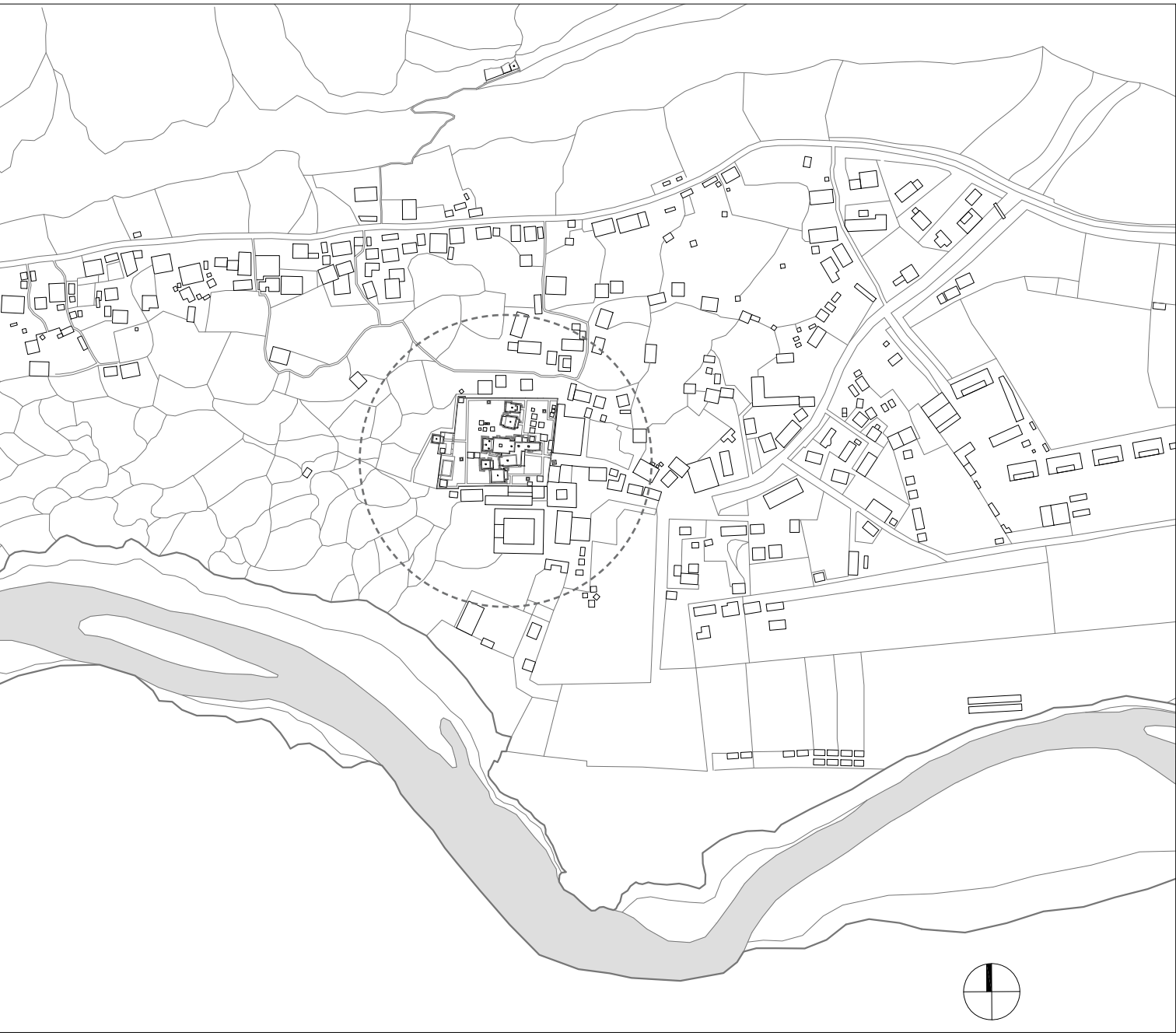
62 INDIAN VILLAGE DIRECTORY, Internet sources.
63 FRANCKE 1999: 38.
64 Foreign travellers still only have limited access, they have to apply for a permit in Rekong Peo or in Kaza.

Fig. 215 The old access path from the east, leading from Lari to Tabo, marked by a weathered row of chörten. Neuwirth 2002.

Fig. 216 North-western view of the valley. The monastery is located in the centre of the surrounding settlement. Neuwirth 2002.

Fig. 217 Western view of the valley. The village is located on the north bank of the Spiti River, the riverbed of which cuts deeply into the topography. Neuwirth 2002.

Fig. 218 The monastery of Tabo as seen from the north-western range of hills. The Main Temple is located in the centre of the sacred compound. The other temples are situated to the south, west and north of the Main Temple. Neuwirth 2002.



0 50 100 200 300 400 500 600

THE SACRED COMPOUND

The sacred compound (Tib. *chos-´khor*) of Tabo currently comprises nine temples and 23 chörten, four of which are said to have paintings inside. Out of the temples within the sacred compound, the Tabo Main Temple is attributable to the earliest period of Buddhism in the 10th century, while the other temples date from the 11th to the 19th century as they are preserved today.[65] The unevenly rectangular area of this compound extends over a length of up to 103 metres along the east-west running wall and a width of up to 87 metres along the north-south running wall, covering an area of 6915 square metres. It is completely enclosed by a wall that consists of a stone base and a top made of rammed earth, which reaches a height of up to 2.20 metres (lowest point is 1.80 metres).

One enters the chos-´khor through a narrow gate on the east side of the monastery wall. The largest building complex of the monastery is situated opposite this portal, 9.20 metres away. The complex consists of the Main Temple (1) with its extensions on the east side and the Large ´Brom-ston Temple (4) on the south side. The two-storey building on the east side of the Main Temple consists of the New Entry Hall (2), the Protector Chapel (3) and the abandoned monastery kitchen on the ground floor, as well as the former abbots' residence and annexes on the upper floor. Today, the entrance to the Main Temple leads from the roofed intermediate area to the Large ´Brom-ston Temple on the south side of the Main Temple in the New Entry Hall (2).

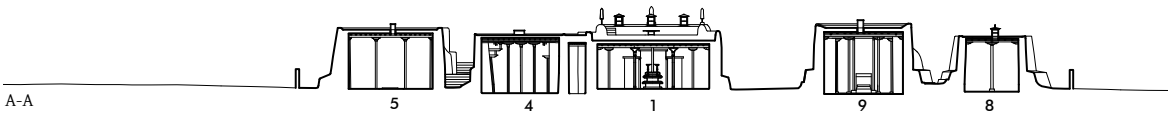
South of the Main Temple Complex, which is less than 2.00 metres away from the Large ´Brom-ston Temple by a staircase, and 14.30 metres further to the west, lies the Golden Temple (5). It is only 3.00 metres away from the south wall of the chos-´khor. A path along this wall leads to the west side of the area.

65 LUCZANITS 2004: 34; KLIMBURG-SALTER 1997: 68.

Fig. 219 Overleaf: Site plan of Tabo, based on the situation in 2018. The plain of the settlement is bordered by the mountain slopes on the north side and by the Spiti River on the south side. The so-called cave monastery is located on the ascending mountain slope north of the village and the monastery. © Neuwirth & Auer, TU Graz 2020.

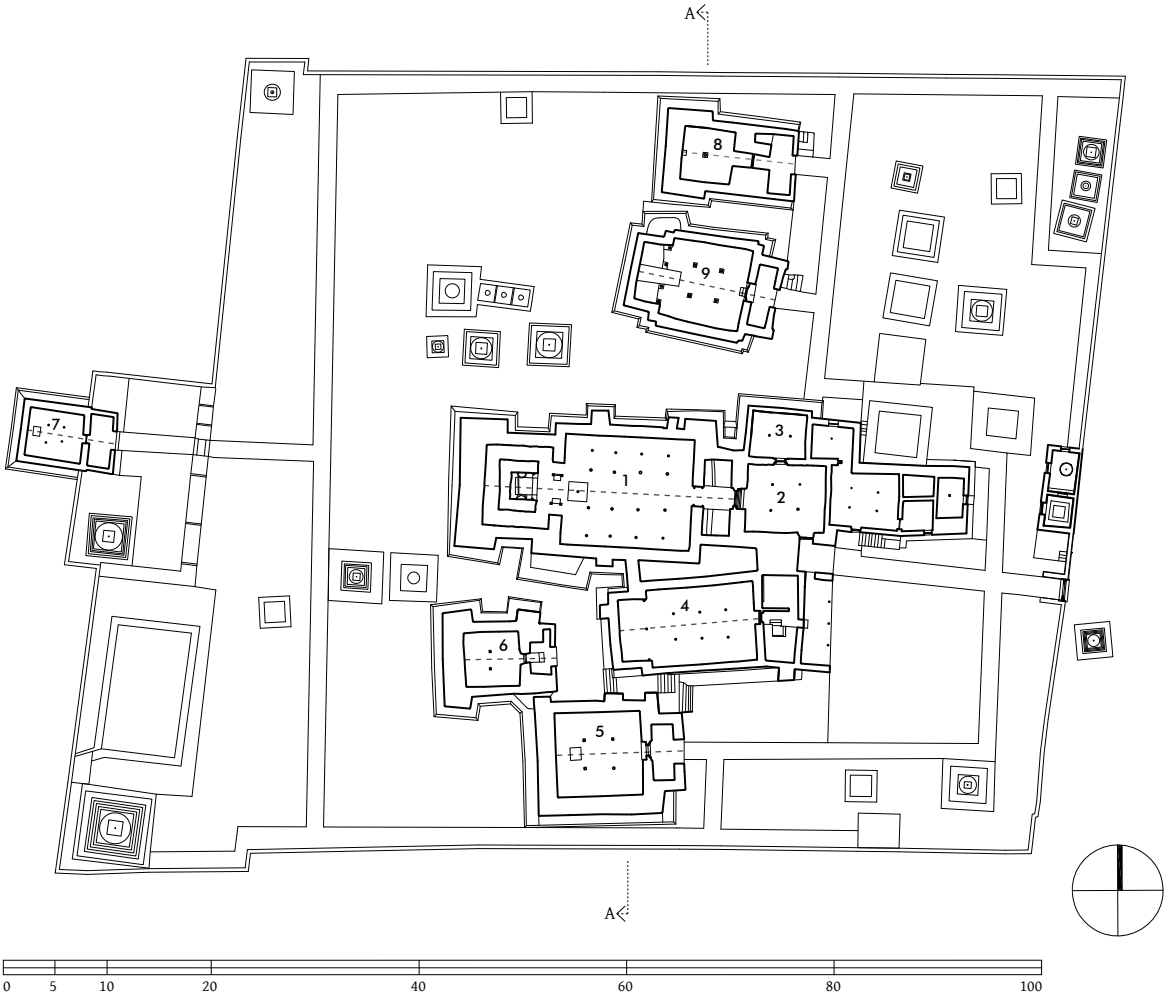
Fig. 220 Left: The entrance on the east side of the walled sacred compound. Auer 2003.

Fig. 221 Right: The forecourt in front of the Main Temple inside the sacred compound. When ritual events are held, this open space can be used for large assemblies. Auer 2003.



THE SACRED COMPOUND *(*Tib. *chos-´khor)*

1 **THE MAIN TEMPLE / VIHARA** *(*Tib. *gTsug-lag-khang)*
2 **THE NEW ENTRY HALL / TEMPLE OF THE MASTER** *(*Tib. *rJe-bla-ma lha-khang)*
3 **THE PROTECTOR CHAPEL / TEMPLE OF THE TUTELARY DEITY** *(*Tib. *mGon-khang)*
4 **THE LARGE ´BROM-STON TEMPLE** *(*Tib. *Brom-ston lha-khang chen-po)*
5 **THE GOLDEN TEMPLE** *(*Tib. *gSer lha-Khang)*
6 **THE MANDALA TEMPLE** *(*Tib. *dKyil-khang)*
7 **THE WHITE TEMPLE / THE NUN´S TEMPLE** *(*Tib. *dKar-'byung lha-khang)*
8 **THE SMALL ´BROM-STON TEMPLE** *(*Tib. *Brom-ston lha-khang chun-ba)*
9 **THE MAITREYA TEMPLE** *(*Tib. *Byams-pa'I lha-khang)*



The Mandala Temple (6) is located 5.00 metres behind the Large ´Brom-ston, on its west side. In the base zone of its vestibule wall, the Mandala Temple immediately adjoins the northwest corner of the Golden Temple. Thereby, a small forecourt is formed that can be reached via the stairs between the Large ´Brom-ston and the Golden Temple. On the west side of this forecourt, there is a 1.75-metre-wide open area that forms the passage between the Main Temple and the Mandala Temple.

The White Temple (7) is located 32 metres away from the Main Temple and is directly integrated into the west wall of the chos-´khor. The height difference on the west side between the ground level inside and outside of the enclosure wall measures 2.13 metres.

Two more free-standing temples are found about 30 metres away from the east enclosure wall on the north side of the Main Temple Complex. The Small ´Brom-ston Temple (8) is located directly next to the north part of the wall, and the base of the northwest corner is only 0.40 metre away. South of the Small ´Brom-ston Temple lies the Maitreya Temple, whose base on the west side is only 0.90 metre away from the Small ´Brom-ston. The distance between the Maitreaya Temple and the Main Temple Complex next to the Protector Chapel is 5.50 metres.

Although the sizes of the temples differ – the interiors vary between 24 square metres in the Small ´Brom-ston Temple and 180 square metres in the Main Temple – their orientations and alignments are very similar. The main axes are oriented east-west, and the entrances and vestibules of all temples open to the east. The Main Temple also follows this orientation, but the New Entry Hall in front of it is entered from the south side. While the longitudinal axis of the Main Temple corresponds to the east-west direction, with a deviation of only 3° clockwise, the longitudinal axes of the other temples deviate between 11° clockwise and 5° counter-clockwise.

In addition to the nine temples, the chos-´khor contains 23 chörten of varying shape and conservation status, most of which are located in the northeast quarter. Some are small with a side length of 1.50 metres, while others are dominant, such as the chörten in the southwest corner of the area with a side length of 7.40 metres and a height of 7.74 metres. A further chörten with a side length of 3.40 metres is located outside the enclosure wall, next to the entrance portal to the monastery, and a smaller group of four chörten is located on the southwest side of the outer ambulatory (see also page 293). Furthermore, a lamp house is found on the east side of the monastery, which is located northward beyond the entrance to the chos-'khor.

Fig. 222 Overleaf: The A-A section of the sacred compound of Tabo. These cross-section through the site shows the height development of the individual buildings as well as the different floor levels in the interior and exterior. The heights of the temples generally remain below those of the Main Temple, whose roofscape with its roof riders and corner markings emphasises the significance of the building in the ensemble. In the interiors of the temples, there is a height difference of 0.51 metre between the floor level in the assembly room of the Main Temple and the floor level of the Maitreya Temple. © Neuwirth & Auer, TU Graz 2020.

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Fig. 223 Overleaf: The site plan of the sacred compound of Tabo shows the orientation, spatial distribution and organization of the nine temples as well as the 23 chörten, which are part of the chos-´khor. © Neuwirth & Auer, TU Graz 2020.

Fig. 224 The settlement of Tabo in 1933, situated north of the monastery. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 225 North side of the enclosing wall with the upper part of the Small ´Brom-ston Temple inside the compound. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

The few photographs taken by Francke in 1909 and by Ghersi in 1933 represent authentic documents that illustrate the historical state of the buildings in the temple complex.[66] These photos depict the buildings and the chörten within the enclosure walls of the monastery complex as well as the surrounding area and the cave monastery.

Only a few sketches made by Francke and Tucci show the monastery buildings in 1909 and 1933.[67] In the 1970s, Romi Khosla was the first to publish detailed plans corresponding to the state of the site,[68] followed by Laxman S. Thakur, who documented the state of the temple complex in November 1988.[69] An analysis of the development and the building phases of the ensemble can be found on page 341.

66 FRANCKE 1999, plate XIV-XVIII. The archive of Guiseppe Tucci's collection with photos by Eugenio Ghersi is located in the Museo delle Civiltá in Rome since 2018.
67 FRANCKE 1999: 39 and TUCCI 1988b: 24, 26.
68 KHOSLA 1979: 38-48.
69 THAKUR 2001: Preface.

Fig. 226 The nine temples and 23 chörten inside the Tabo chos-´khor, seen from the northern range of hills. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

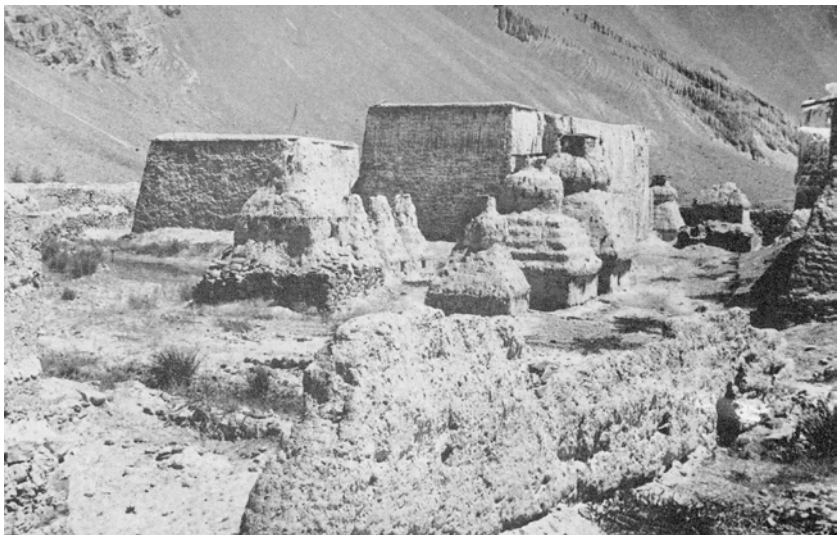


Fig. 227 South-western view of the Small ʼBrom-ston Temple and the Maitreya Temple in the north of the Main Temple Complex. Khosla 1979: Illustration 42.

Since 1991, the entire complex has been restored extensively, which significantly changed the external appearance of the monastery complex.[70] This restoration was executed by the Archaeological Survey of India (ASI) and altered the outer walls of most of the temples. The surrounding wall of the chos-´khor was complemented, the free space was regulated, and most of the paths in the area were levelled, the access paths to the individual temples were paved with stone and a water drainage system with four sewer shafts was installed.

The external façades and vestibules were newly plastered, and the flat roof and lantern constructions were renewed. The outer appearance was substantially changed by the installation of brickwork in the base zones of the outer walls in the form of reinforcing, supporting pillars. New vestibules were built in the Mandala Temple and the White Temple.[71] Inside these temples, the floors were renovated and partly equipped with screeds and wooden floors, which changed the original room height. Some new lanterns were installed in the ceiling area to improve the interior lighting .

70 THAKUR 2001: 284-285.

71 On the site plans of FRANCKE 1999: 39 and KHOSLA 1979: 38, the Mandala Temple and the White Temple are still depicted without vestibules. The site plan of TUCCI 1988b: 24 shows a dotted line in front of the Mandala Temple, where the vestibule is located. In the plans of THAKUR 2001: 65, both temples are already depicted with vestibules.

Fig. 228 Eastern view of the Temples of Tabo. On the left side the Golden Temple, next to it the Large ´Brom-ston Temple. Centre: the Main Temple with the New Entrance Hall with the elevated Protector Chapel in front. Right: the Maitreya Temple and the Small ´Brom-ston Temple. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 229 Spatial representation of the monastery, according to the survey in 2002. Some of the newer monastery buildings outside the enclosure wall were documented as mass models. Below the bird´s eye view. © Neuwirth & Auer, TU Graz 2020.

Fig. 230 Overleaf: Above the north-western view and below the eastern view of the complex. © Neuwirth & Auer, TU Graz 2020.

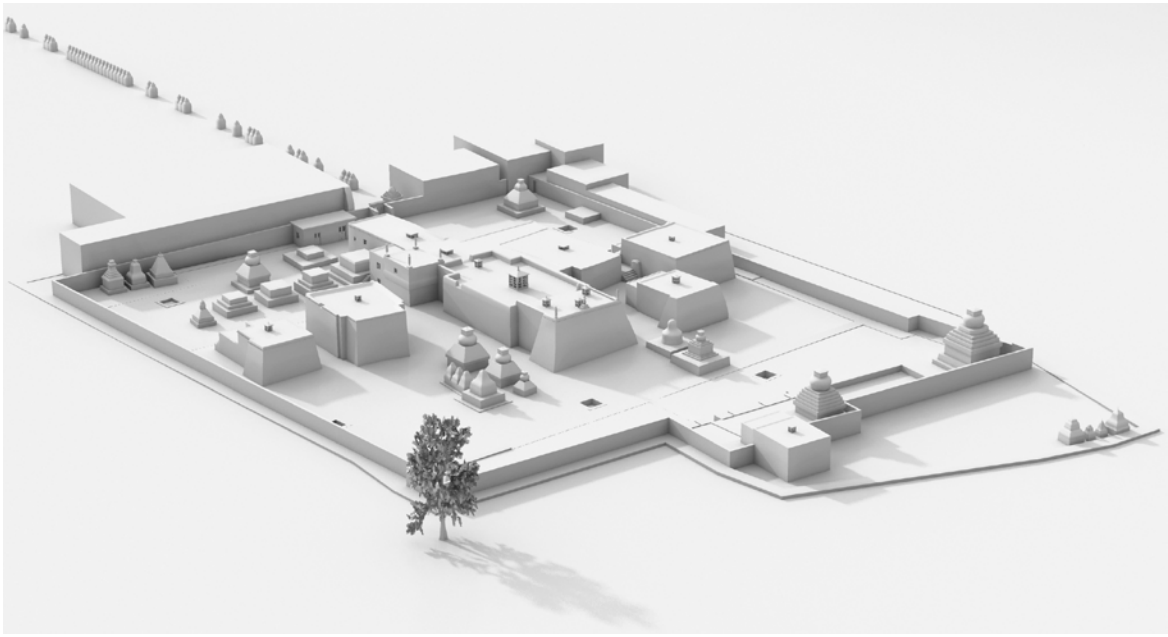


Fig. 231 Northwest view of the Main Temple in the centre of the monastery. The façade shows the different structures of the Main Temple. Auer 2003.

The building complex of the Main Temple is located in the centre of the monastery and consists of a conglomerate of rooms that were built in different construction phases over the centuries. The total length of the complex measures 50.55 metres running from east to west, with a width up to 27.60 metres. The Main Temple, which has been preserved as an authentic unit with a vestibule, an assembly hall and a cella with an encircling ambulatory, forms the core of the complex.[72]

Today, the so-called New Entry Hall is located in front of the original vestibule of the Main Temple, and this hall can be entered on its south side. A door on the west side leads into the vestibule of the Main Temple, while another door on the north side leads into the Protector Chapel. The rooms of an abandoned kitchen and storage rooms are located on the east side of the New Entry Hall. Their entrances are on the east and south sides of the building. The upper floor extends over the New Entry Hall, the Protector Chapel, the former kitchen and the side rooms and is accessed via an open staircase on the south side. The rooms were used as residential rooms by the abbot and monks.

The Large ´Brom-ston is connected to the building complex on the south side of the Main Temple. In front of its entrance, an open veranda extends to the Main Temple. A door on the upper floor, located above the New Entry Hall, leads to the otherwise inaccessible intermediate space between the Main Temple and the Large ´Brom-ston Temple, which was closed to the west and east by massive walls.

72 In comparison with the other buildings, the founding of the Main Temple and its renovation date is evidenced by the inscription on the south wall of the vestibule and the renovation inscription on the south pillar of the cella. The inscriptions report that the temple was founded by Yeshe-ö in the monkey year and was renovated by his great nephew 46 years later. These figures very likely were carved in the years 996 and 1042. Surprisingly, Rinchen Zangpo, to whom the foundation of Tabo is attributed, is not mentioned. LUCZANITS 2004: 34.

Fig. 232 Left: The northeast view of the building complex shows the supporting pillars of the vestibule, the assembly hall and the cella of the Main Temple. Neuwirth 2003.

Fig. 233 Right. South-western part of the complex, where the ambulatory around the cella of the Main Temple is located. Auer 2003.

Fig. 234 East view of the building complex, with the structures adjoining the Main Temple on the south and east sides. In the foreground, the two-storey extension to the New Entry Hall can be seen, and the open veranda in front of the vestibule of the Large ´Brom-ston is in the background. Neuwirth 2002.

Fig. 235 Former entrance to the New Entry Hall in front of the Main Temple, far left the entrance to the Large ´Brom-ston, all seen from the east. The upper floor above the New Entry Hall was accessed from the outside via a door on the east side Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

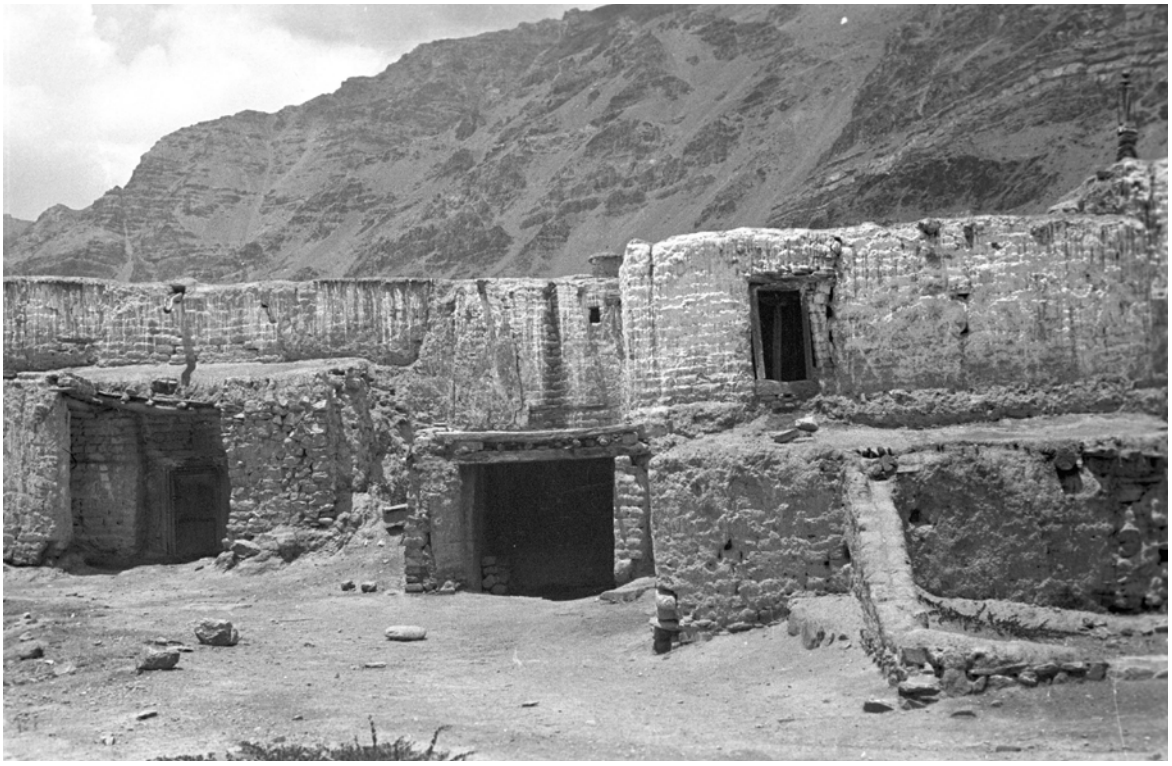
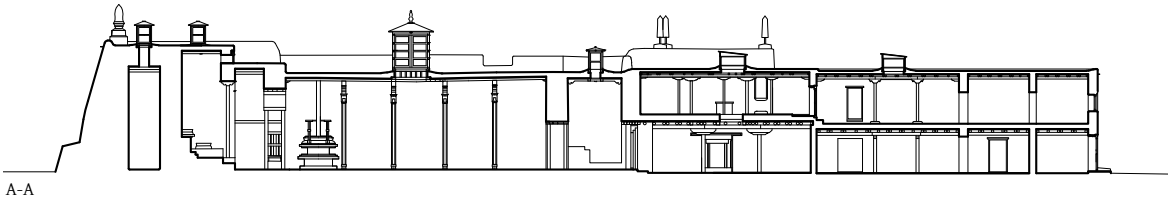


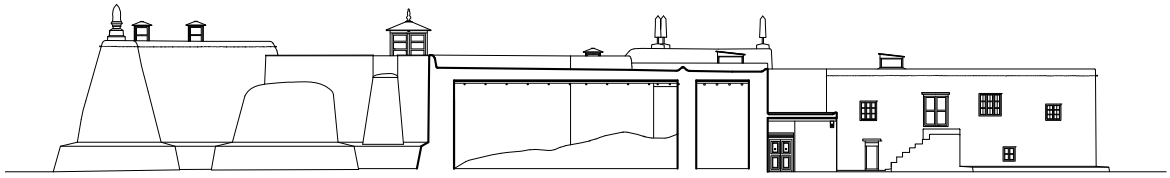
Fig. 236 Left: Southern view of the east building with the former monastery kitchen on the ground floor and residential rooms on the upper floor. Neuwirth 2003.

Fig. 237 Right: Northern view of the higher area of the east building, with the Protector Chapel on the ground floor and residential rooms above. Neuwirth 2002.

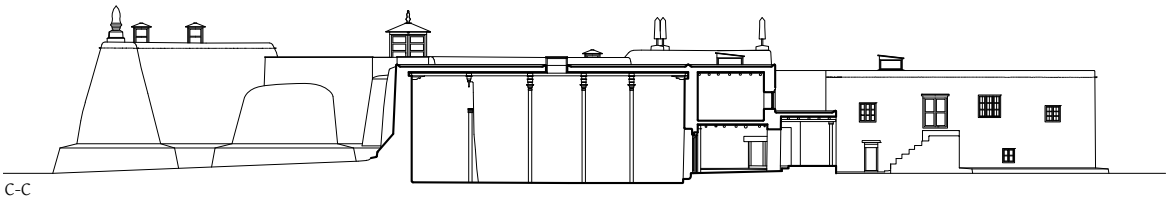
Fig. 238 Eastern view of the former appearance of the Protector Chapel, the floor above the New Entrance Hall and the Protector Chapel, with a window on the east. The former entrance door on the upper floor was already walled up. Khosla 1979: Illustration 43.



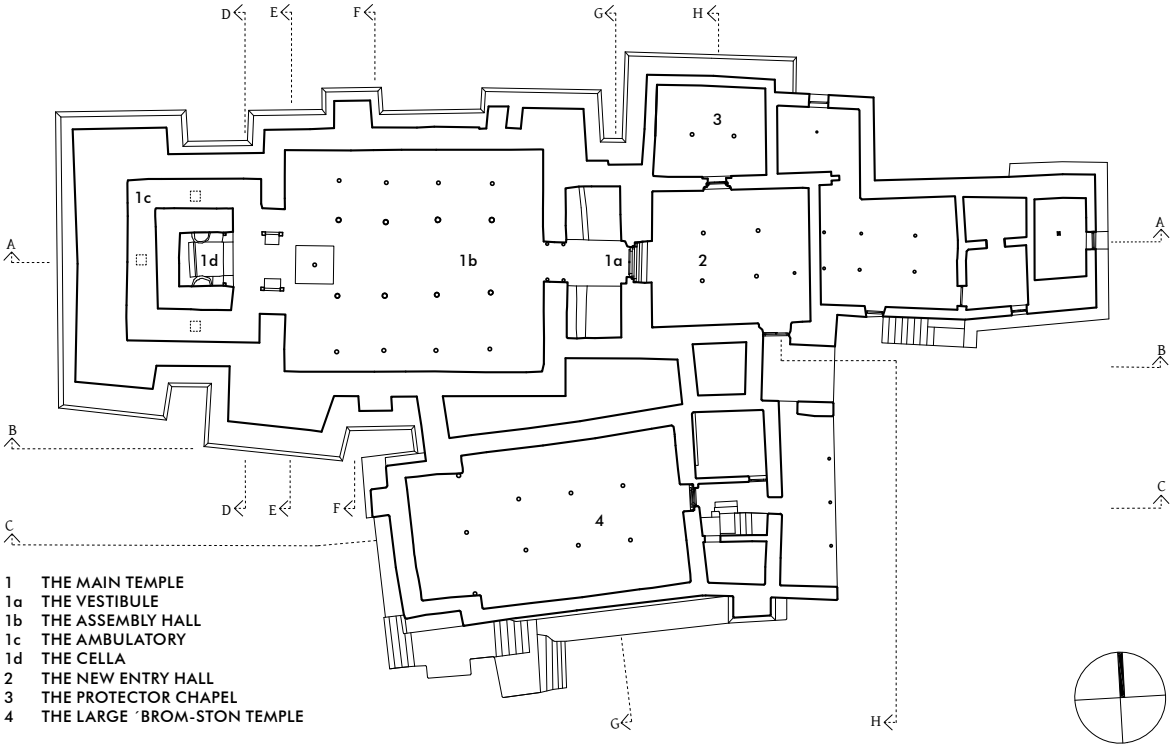
A-A



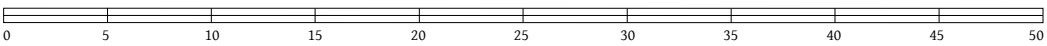
B-B



C-C



1 THE MAIN TEMPLE
1a THE VESTIBULE
1b THE ASSEMBLY HALL
1c THE AMBULATORY
1d THE CELLA
2 THE NEW ENTRY HALL
3 THE PROTECTOR CHAPEL
4 THE LARGE ´BROM-STON TEMPLE



PART 1: THE MAIN TEMPLE

The formerly free-standing Main Temple (Tib. *gTsug-lag-khang)* consists of a small vestibule (1a) on the east side, a large assembly hall (1b) and an adjoining cella (1d) with an ambulatory (1c) on the west side. The structure extends over a total length of 27.65 metres, reaching a width of up to 12.95 metres. The external height is between 4.60 metres in the vestibule area and extends up to 6.30 metres at the west end. The longitudinal axis of the Main Temple is oriented from the east to the west, with a minimal deviation of 3° clockwise, and the entrance faces to the east.

From the New Entry Hall (2), a 2.00-metre-wide, unadorned portal with a double-wing door leads into the vestibule (1a) of the Main Temple. This vestibule is 7.28 metres wide and 2.60 metres deep. The room height in the 2.20-metre-wide central aisle is 4.35 metres, as measured from the floor level to the board level of the ceiling construction. A small ceiling opening with an inset lantern illuminates the room. The floor level of the side wings has been raised by 0.32 metre. Along the west wall on both sides, there is a bricked pedestal with a height of 1.10 metres on which two sculptures of protective deities are positioned next to the entrance of the assembly hall.

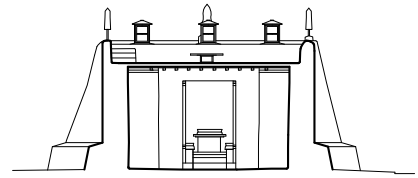
The wall opening to the assembly hall is 1.64 metres wide and 2.38 metres high and lies exactly along the main axis of the temple. Four red-painted round pillars support the two lateral beams which, in turn, support the cross-beams of the lintel over the wall thickness of 1.13 metres.

The assembly hall (1b) is 10.68 metres wide and 12.43 metres deep, and the room height measures 4.40 metres, so it remains at about the same height as in the vestibule. The room was originally conceived as a three-aisled hall with five bays. Along the main axis, two rows of four fluted round pillars, each with a diameter of 0.22 metre, carry the transverse main beams. The free spans of the main beams vary from 3.23 to 3.72 metres. The width of the bays between the supports varies from 2 to 2.43 metres. Later, an additional row of pillars with a diameter of 0.20 metre was inserted between the rows of pillars and the longitudinal walls on the north and south sides of the room to support the ceiling construction. The room is lit by a renewed roof lantern inserted through an opening in the middle of the ceiling.

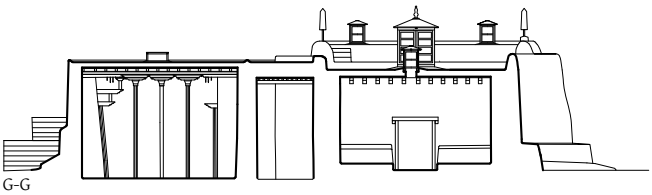
The interior of the assembly hall is dominated by the free-standing sculpture of the four-fold Vairocana on the west side and by the 32 sculptures of the Vajradhatumandala, which are lined up along the walls on semi-circular lotus bases that are integrated into the wall at an average height of 1.50 metres, according to the iconographic order (see Fig. 247, page 193).

Fig. 239 Overleaf: The longitudinal sections (A-A to C-C) of the Main Temple Complex. Section A-A shows the configuration of the interior in the Main Temple (1) and the east room structure (2, 3) with its upper floor, which was added later. Section B-B shows the intermediate space between the Main Temple (1) and the Large ´Brom-ston Temple (4). Section C-C shows the interior of the Large ´Brom-ston (4) with its entrance hall and the veranda in front of it. © Neuwirth & Auer, TU Graz 2020.

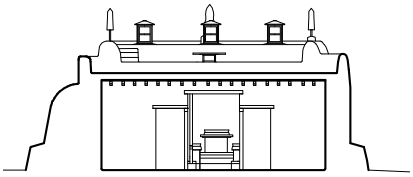
Fig. 240 Overleaf: The floor plan of the Main Temple Complex shows the form and size of the temples as well as the functional rooms in front and in between. The originally three-aisled hall of the Main Temple was turned into a five-aisled hall when lateral rows of pillars were added later. © Neuwirth & Auer, TU Graz 2020.



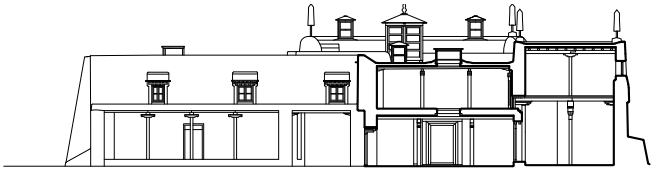
D-D



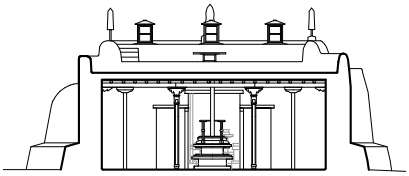
G-G



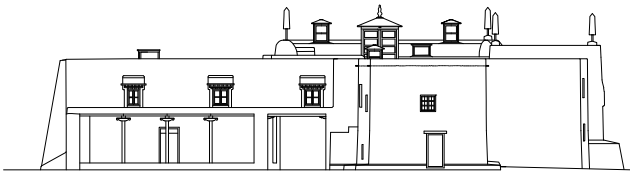
E-E

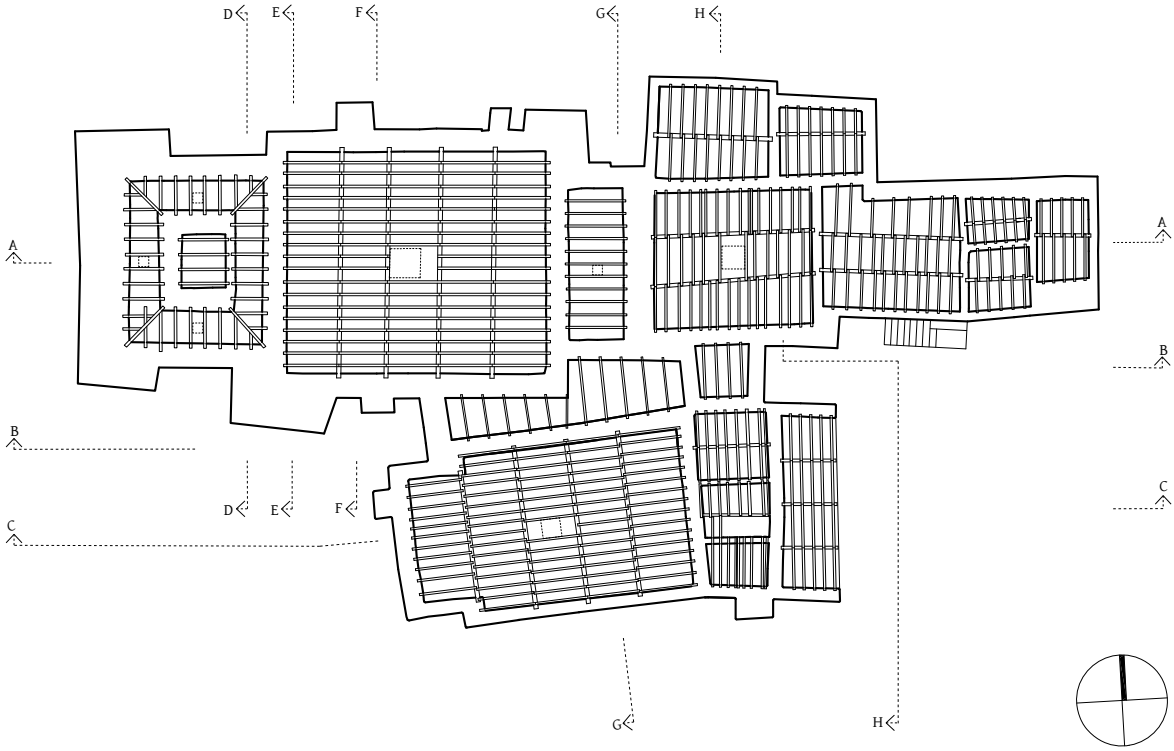


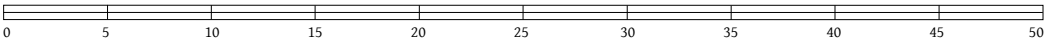
H-H

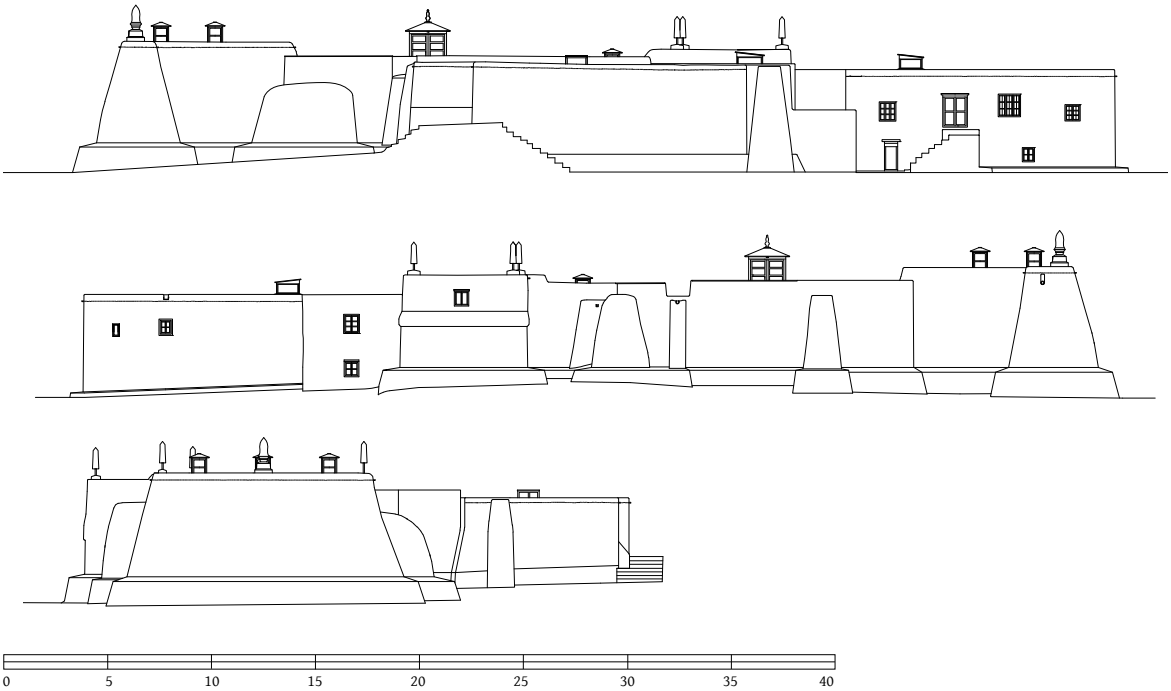


F-F









In 2002, a bookshelf placed in front of the main sculpture formed the west end of the assembly hall. This was not depicted in the plans, because it did not correspond to the authentic spatial concept. In 2003, this shelf was relocated to restore the original concept, allowing a visual relationship between the assembly hall and the cella.

A three-part portal, consisting of a higher middle field and two lower side fields, with a total width of 5.31 metres on the west side of the room, forms the passage from the assembly hall to the cella and the ambulatory. The central part is 2.50 metres wide and 3.64 metres high, and the portal depth of 0.98 metre is covered by wooden cross-beams. Two square, ornamentally painted supports, each with a side length of 0.16 metre, separate the higher middle section from the lower side section and form the support for the cross-beams of the side sections, which are 1.22 and 1.28 metres wide, respectively, and 2.99 metres high. In the course of the restoration, additional square and round supports were added to the sides of all three passages of the portal, but these are not shown in the plans.

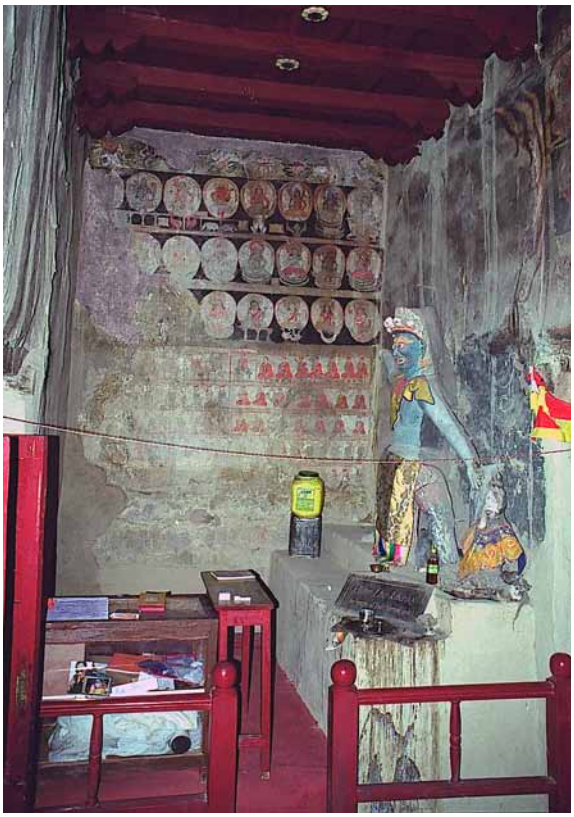
The cella (1d) is raised by a total of 0.57 metre with two steps and is open to the east over the entire width of 2.60 metres and a height of 4.26 metres. It has a depth of 2.60 metres and, with a room height of 5.10 metres, which is clearly visible in the roof area as a heightened top.

Fig. 241 Overleaf: The cross-sections and the east elevation of the Main Temple Complex, as well as the beam plan of the ceiling constructions. Section D-D shows the cella and the ambulatory around it, section E-E shows the construction in front of the three-part portal, and section F-F shows the inner structure of the assembly hall. In section G-G, one can see the different floor levels of the Large ´Brom-ston Temple and the entrance hall of the Main Temple. Section H-H shows the east extension of the complex with the New Entry Hall and the Protector Chapel on the ground floor and the rooms above on the second floor.

Fig. 242 Above: The elevations of the complex, showing the different heights and volumes. Above: the south elevation. Middle: the north elevation. Below: the west elevation of the Main Temple Complex. © Neuwirth & Auer, TU Graz 2020.

Fig. 243 The vestibule of the Main Temple with the entrance to the assembly hall. Neuwirth 2002.

Fig. 244 The southern and northern part of the vestibule with the two sculptures of the protective deities next to the entrance to the assembly hall. Neuwirth 2002.



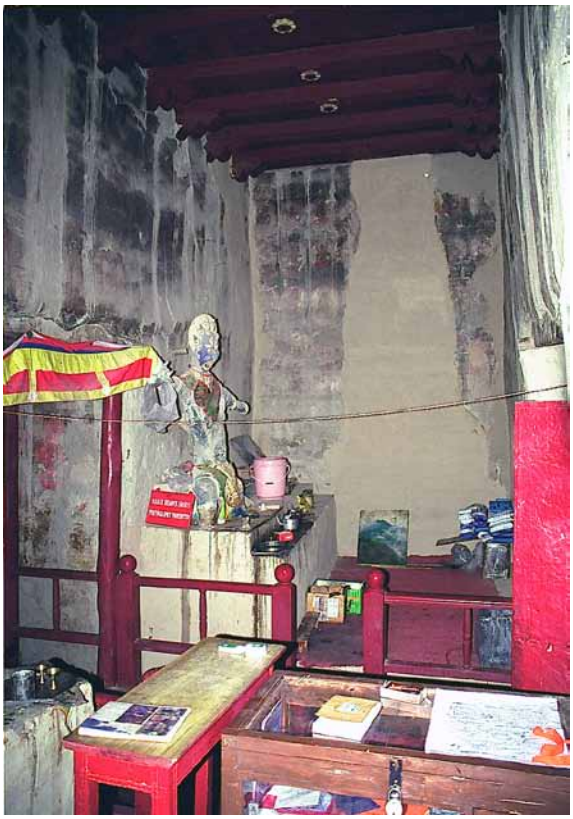


Fig. 245 Wall painting above the entrance to the assembly hall of the Main Temple. The traces of clay on the wall surface are due to water penetrating into the ceiling area, which affected the murals. Neuwirth 2002.

Fig. 246 The protectresses and their retinue above the lintel of the entrance to the assembly hall. Neuwirth 2002.


I
II
III
IV
V
Vajrapasa
Vajrasphota
Mala Puspa
Aloka Gita
Vajrahasa
Vajradharma
Vajraketu
Vajratiksna
VAIROCANA
RATNASAMBAVA
AMITABHA
Vajratejas
Vajrahetu
Vajraratna
Vajrabhasa
Vajrasadhu
Vajrakarma
Vajraraga
Vajraraksa
AKSOBHYA
AMOGHASIDDHI
Vajraraja
Vajrayaksa
Vajrasattva
Vajrasandhi
Lasya Dhupa Vajrankusa
Vajravesa Gandha Nrtya
South
North
14 15 16
17 18 19
13 12 11 10 9 8 7 6 5 4
20 21 22 23 24 25 26 27 28 29
3 2 1
32 31 30
South-Yellow
West-Red
East-Blue
North-Green
W
S
N
E
0 1 2 3 4 5 10 15 20

The horizontal light opening on the east side of the cella ceiling, which results from the different room heights, allows light to reach the sculpture of Buddha Vairocana (I), who is sitting on the lion's throne on the west wall of the cella. Two Bodhisattva sculptures flank it on the south (II) and north (III) wall of the cella and on the central pillars of the portal (IV and V), respectively.

An entrance to the ambulatory (1c) is found on both sides of the cella, and this ambulatory surrounds the cella on the south, west and north sides. The renewal inscription can be found on the left front wall of the cella and, specifically, at the beginning of the ritual circumambulation, which leads clockwise around the cella. The width of the passage varies between 1.32 and 1.55 metres, and the height measures 4.92 metres.

The dramaturgy of the sequence of rooms results in a staggering of their heights, which range from 4.35 metres for the vestibule, 4.40 metres for the assembly hall, 4.92 metres for the ambulatory and on to 5.67 metres for the cella. The walls of the Main Temple are between 1.00 metre and 1.20 metres thick. The east wall of the vestibule is considerably thicker (i.e. 1.50 metres), probably due to the later extension of the new vestibule. An analysis of the geometrical principles provides information about the original concept of the planning (see page 373).

Outside, the west wall of the Main Temple is constructed as a conical, massive abutment that extends around the corners like a brace. Here, the wall thickness is 2.40 metres at the bottom and 1.50 metres in height at the point of the ambulatory ceiling. The width of the abutment on the west facade is 12.15 metres in the lower area and 4.50 and 3.73 metres, respectively, on the north and south facades. Apart from the Main Temple, this independent construction element can only be found in the Mandala Temple and the Small ´Brom-ston Temple. Even more massive, conical supporting pillars to reinforce the walls, which also determine the present appearance, are located on the outside of the assembly hall, and especially at the southwest corner and at the northeast corner.

The existence of a former outer circumambulation path in Tabo, as partially preserved in Nyarma and Alchi at the assembly halls, could only be verified by conducting archaeological research (see page 347). With regard to the iconography of the sculptural and painted decoration of the Main Temple, reference is made to the extensive publications on Art History and Tibetology.[73]

Fig. 247 Overleaf: The Deities of the Vajradhatumandala in the Tabo assembly hall. The names of the deities refer to the description of Anandagaranbha, which is the closest early written description of the representation at Tabo. Next to it, the quarters of the Vajradhatumandala in the Tabo Assembly Hall are shown. The coloured sections indicate the different quarters to which the deities belong. The five images of the earlier cella group are numbered: starting with the main image of Buddha Vairocana (I) on the west wall, which is flanked by the Bodhisattva Avalokitesvara (II) on the south wall and the Bodhisattva Vajrasattva (III) on the north wall. Two additional Bodhisattva images are placed in the central part of the portal (IV and V). According to Luczanits 2004: 35-37, 48.

73 FRANCKE 1907 and 1999; TUCCI 1988b; KLIMBURG-SALTER 1997; THAKUR 2001; LUCZANITS 2004; RAHULA 2013.

Fig. 248 View toward the altar and the bookshelf in the assembly hall of the Main Temple, which stood on the west side of the room in front of the portal leading to the cella and the gallery. The sculptural decoration on the walls of the assembly hall consists of 32 figures whose iconography corresponds to the representation of the Vajradhatumandala. Neuwirth 2002.

Fig. 249 The sculptures on the southeast wall of the assembly hall with Aksobhya and Vajraraga in the centre. Neuwirth 2002.

Fig. 250 The assembly hall of the Main Temple with the three-part portal on the west side of the room. The altar with the bookshelf, still existing in 2002, was subsequently removed, allowing a view into the cella again. Neuwirth 2003.

Fig. 251 The view of the three-part portal with the raised central area, which forms the passage from the assembly hall to the cella and the ambulatory. The free-standing sculpture of the four-fold Vairocana is seen in front of it. Neuwirth 2003.

Fig. 252 The head of the Vajrasphota sculpture, the gatekeeper on the right side of the portal, as seen from the assembly hall. Neuwirth 2002.

Fig. 253 North part of the three-part portal at the passage from the assembly hall to the cella with the ambulatory. Only the decorated support between the lower side part and the higher middle part corresponds to the original construction; all other supports were added later to reinforce the portal. Neuwirth 2002.

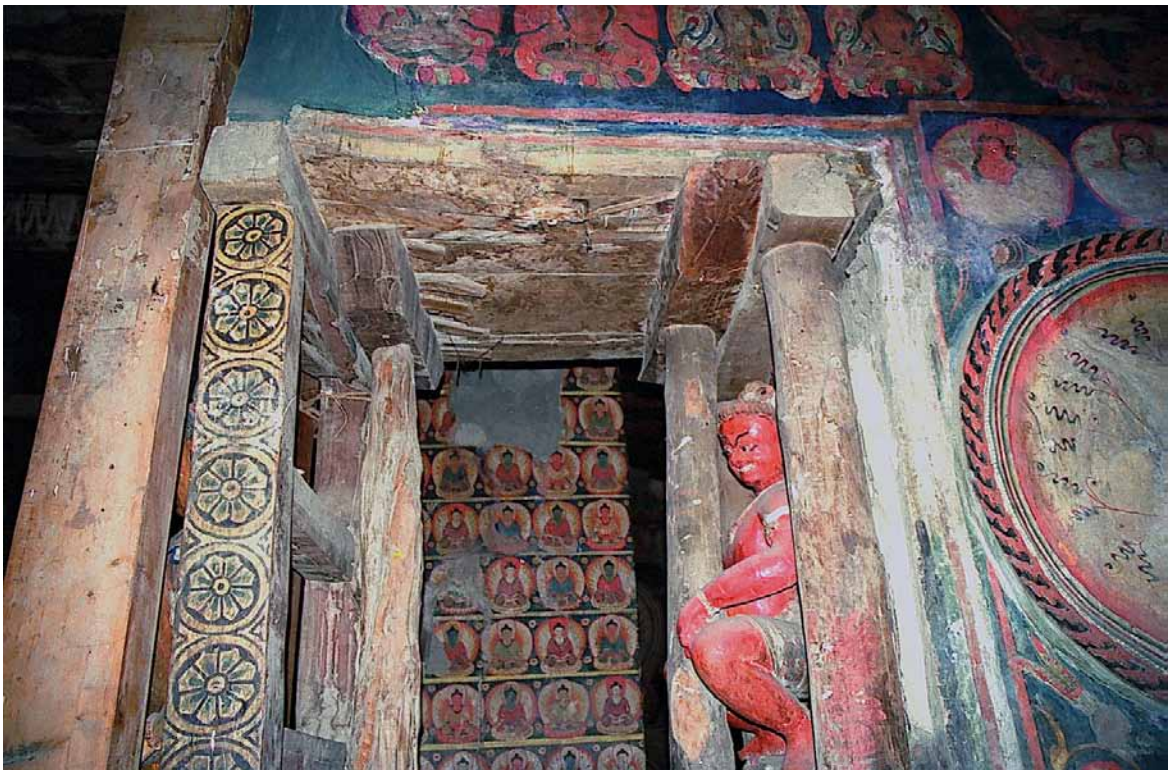
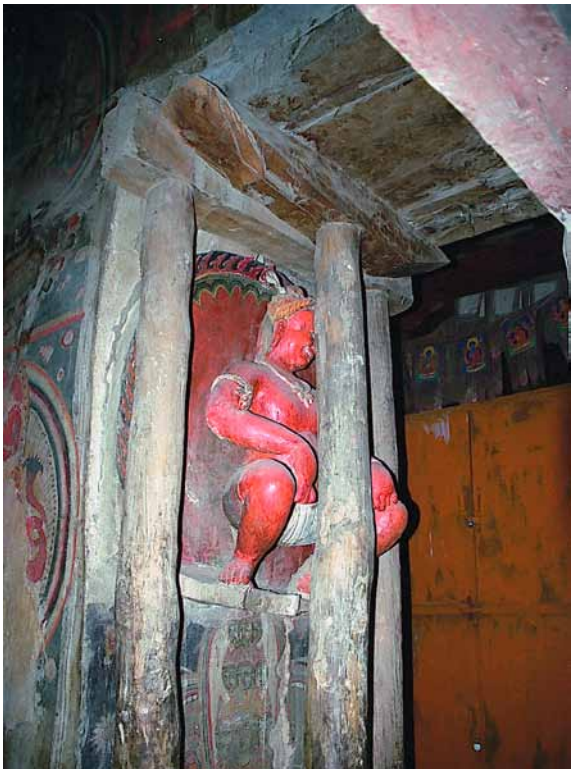


Fig. 254 South portal of the passage from the assembly hall to the cella. Here, the wooden pillars inserted later also dominate the appearance of the portal. Neuwirth 2002.

Fig. 255 Left: The side areas of the portal, as seen from the cella. Left: the sculpture of Vajrasphota and the gate-keeper of the north entrance portal. Neuwirth 2002.

Fig. 256 Right: the sculpture of Vajrapasa, the gatekeeper of the south entrance portal. Neuwirth 2002.



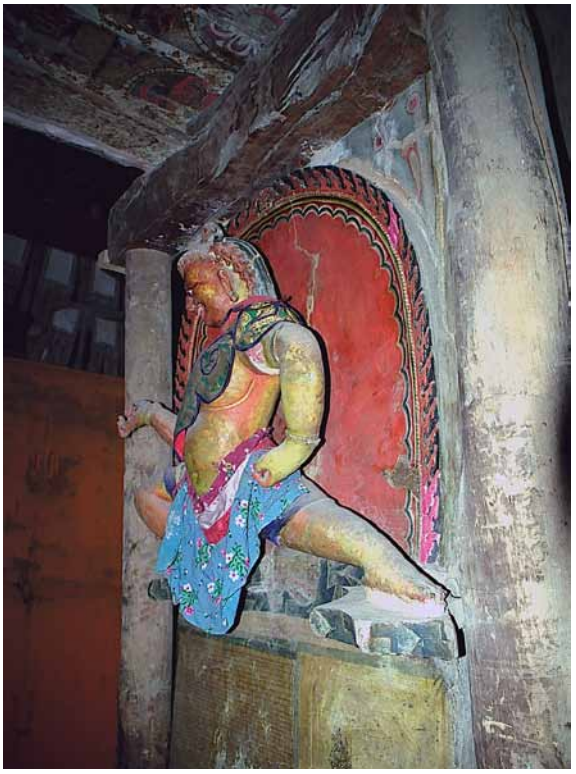


Fig. 257 The Bodhisattva sculptures IV and V on the south side and on the north side of the central part of the portal, which lies directly in front of the cella. Neuwirth 2002.

Fig. 258 The sculpture of Bodhisattva Avalokitesvara (II) on the south side wall of the cella and of Bodhisattva Vajrasattva (III) on the north side wall of the cella. Neuwirth 2002.

Fig. 259 View from the cella to the sculpture of the four-fold Vairocana on the lion throne, located on the west side of the assembly hall. Neuwirth 2003.

Fig. 260 View into the cella to Mahavairocana (I) with the sculptures of two Bodhisattvas (II and III) on the side walls of the cella. Neuwirth 2003.

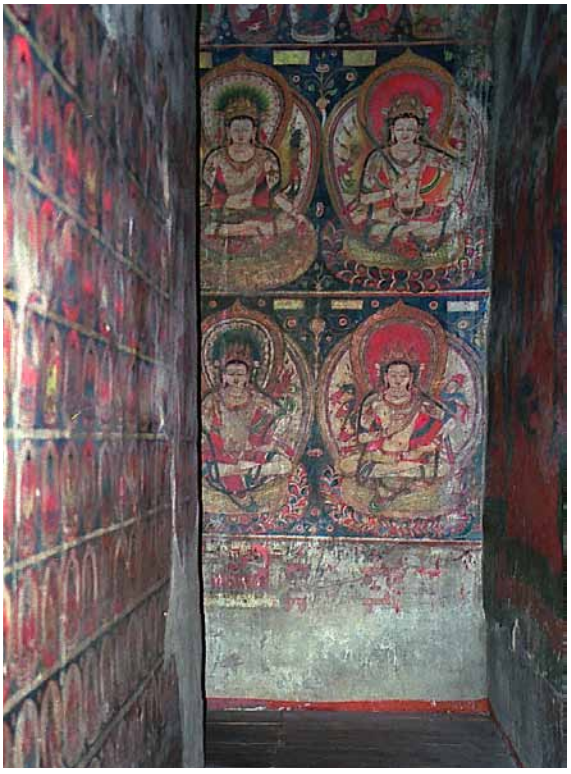
Fig. 261 The wooden construction above the central part of the three-part portal between the assembly hall and the ambulatory facing the assembly hall. Neuwirth 2002.

Fig. 262 The ceiling painting in front of the cella, between the three-part portal to the assembly hall (right) and the entrance to the cella (left). Neuwirth 2002.

Fig. 263 The ceiling of the ambulatory on the north side. A skylight allows light to reach the area from above, and neon lights on the diagonal beams in the corner provide additional illumination. Neuwirth 2002.

Fig. 264 Left: the west part of the ambulatory, in front of the murals on the south wall. Neuwirth 2002.

Fig. 265 Right: Next to it, the north part of the ambulatory, in front of the murals on the west wall. Neuwirth 2002.



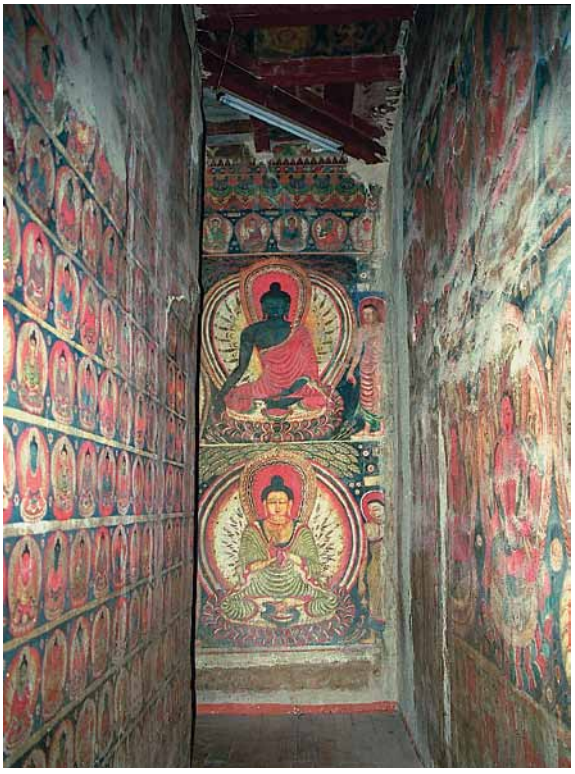


Fig. 266 Scaled photomontages of the murals in the New Entry Hall. Above: the south interior wall with the entrance. Below: the west interior wall with the access to the vestibule of the Main Temple. © Neuwirth & Auer, TU Graz 2020.

Fig. 267 Scaled photomontages of the murals in the New Entry Hall. Above: the north interior wall with the access to the Protector Chapel. Below: the east interior wall. © Neuwirth & Auer, TU Graz 2020.

PART 2: THE NEW ENTRY HALL

The New Entry Hall (Tib. *rJe-bla-ma lha-khang*) connects the Main Temple on its west side with the Protector Chapel on its north side. The access from outside is located in the southeast corner of the room. The south wall and the opposing north wall are 7.60 metres wide on average, while the side walls on the east and west sides are about 6.50 metres long.

The ceiling construction is supported by four pillars placed at a distance of 2.40 metres from one another, and the main beams run transversely toward the entrance, thus, in east-west direction. The distance between the main beams is about 2.00 metres. Below the south main beam, another support was added on the east side of the room to provide additional support for the ceiling beam. The room height is about 4.45 metres, as measured from the floor level to the poles, which complete the ceiling construction above the secondary beams. In the middle of the ceiling, there is an opening with a side length of 1.10 metres. This opening allows a view into the upper floor and permits light to enter the room from above. All the interior walls are fully painted, including the deep lateral reveals of the entrance to the Main Temple on the west side of the room.[74]

The upper floor can be accessed via the adjacent rooms on the east side. This room is also provided with four supports, and its room height measures 2.00 metres, resulting in a total height of 5.30 metres on the external façades. In the central area of the ceiling, there is an opening which allows light to enter the room on the upper floor and also indirectly illuminate the New Entry Hall below.

74 THAKUR 2001: 211-214. A description of the iconography is given in RAHULA 2013: 523-525.

Fig. 268 Above: Supporting system of the ceiling construction in the New Entry Hall. Left: one of the pillars with consoles supporting the main beams. Middle: the opening in the ceiling through which one can see the upper floor above. Right: the zone above the lateral reveal of the entrance portal of the Main Temple. Neuwirth 2002.

Fig. 269 Below: the doors in the New Entry Hall. Left: the entrance from outside on the southeast side of the room. Middle: the renewed access portal to the Main Temple on the west wall. Right: the entrance to the Protector Chapel on the north side of the New Entry Hall. Neuwirth 2002.

PART 3: PROTECTOR CHAPEL

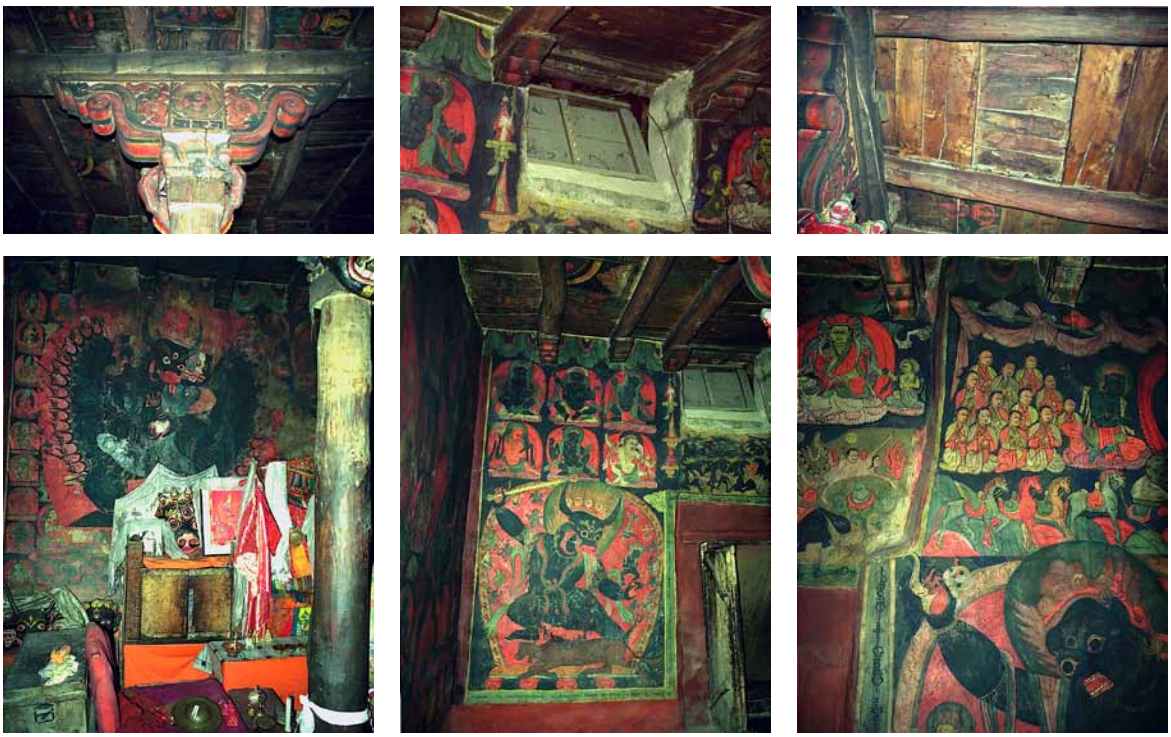
Fig. 270 Above: The interior of the chapel in the north of the New Entry Hall. Left: the painted console capital above one of the pillars. Middle: the window to the upper floor above the entrance on the south side of the room. Right: the ceiling construction, which shows traces of a former opening. Neuwirth 2002.

Fig. 271 Below, left: the north wall of the chapel with the altar table in front. Middle: the south wall with the murals next to the entrance. Right: a detail of the murals on the south wall. Neuwirth 2002.

The Protector Chapel (Tib. *mGon-khang*) is located on the north side of the New Entry Hall. The entrance is 1.34 metres wide and 1.20 metres high and has a simple wooden door. Above a threshold of 0.25 metre, one enters the 5.40-metre-wide and 4.40-metre-deep room. The floor level here is set a little lower than the floor in the New Entry Hall. Two pillars are located a distance of 1.84 metres from one another and bear the transverse main beam of the ceiling construction, which is supported on the side walls by wall consoles. The room height measures 3.33 metres up to the level of the boards forming the ceilings, and both wall and ceiling surfaces are painted.[75]

A 0.51-metre-high hinged window is located inside the room above the entrance. Due to the difference in room heights, respectively in floor level on the lower and upper floor, this window extends into the room above the New Entry Hall. A small door is found to the right of this window on the upper floor, through which one can enter the room above the Protector Chapel. This room is equipped with a window on the north façade. The room height measures 2.30 metres, which results in the larger total height of 6.00 metres on the outer facade.

75 THAKUR 2001: 200-203.



MONASTERY KITCHEN AND ABBOT APARTMENT

The former monastery kitchen is located on the ground floor on the east side of the New Entry Hall , and the abbot´s apartment is located on the upper floor above. These rooms are rarely used today. The entrance to the kitchen is located on the south front; the room is 6.60 metres wide and 5.44 metres deep, and four pillars support the ceiling. A storage room is connected to this room on the north side; this storage room measures 4 x 3.30 metres, with a window to the north. Two more small rooms, which can be accessed from the kitchen, are located on the east side of the building and are illuminated by light entering through a window from the south. Another adjoining room, 3.88 metres wide and 2.47 metres deep, can be accessed from the east side of the building, and its ceiling is supported by a central pillar. The room height of the ground floor measures about 2.10 metres.
A bricked stairway found next to the entrance of the kitchen leads to the upper floor on the south façade. On the west side, the lobby leads to the rooms above the New Entry Hall and the Protector Chapel and, on the east side, it leads to the former residential rooms of the abbot. With a room height on the upper floor of 2.35 metres, the building reaches an outside height of 5.00 metres.


Fig. 272 Left: the west wall of the room above the New Entry Hall. Right: the hinged window on the north wall, which extends from the Protector Chapel below, into the upper floor of the New Entry Hall. Neuwirth 2002.


Fig. 273 Left: the entrance from the outside stairway to the lobby in the upper floor above the kitchen. Right: the entrance room with the accesses to the other rooms of the upper floor. Neuwirth 2002.


Fig. 274 Left: the former monastery kitchen on the ground floor, with the door to the storage room on the north side. Right: the ceiling above the kitchen, which, like the entire room, is covered with a thick layer of soot. Neuwirth 2002.

INTERMEDIATE SPACE

A walled-up space connects the Main Temple with the Large ´Brom-ston to form a contiguous building complex. A photo taken by Ghersi in 1933 (see Fig. 235, page 184) still shows the separate entrances to the Large ´Brom-ston Temple and the Main Temple. Today, an open vestibule forms a shared roof for the entrances to the Large ´Brom-ston Temple and the New Entry Hall, located in front of the Main Temple.

The position of the Main Temple (1) and the Large ´Brom-ston Temple (4) defines a space that was closed by a wall to the west and east and is accessible only from the upper floor above the New Entry Hall (see Fig. 239, page 187). These walls are both about 2.00 metres long and include a 24-square-metre room with a height of 4.20 metres, covered by a simple ceiling construction. The loose material on the floor reduces the distance to the ceiling on the east side to 2.70 metres, and the access opening on the northeast corner of the space extends to just below the ceiling.

The façades of the two temples, which now form the north and south walls between them, were not renovated here and, thus, show interesting structural evidence. The traces of colour on both side walls make it clear that this room was not originally walled up. The construction of the eaves on the original vestibule of the Main Temple, which has been preserved on the north side of the intervening space, also allows us to draw clear conclusions regarding the appearance of the formerly free-standing Main Temple. The different masonry techniques and brick formats used also provide interesting information: For example, the brickwork on the west side consists of small-format clay bricks, while the brickwork on the east side, which is 1.25 metres thick, consists of a rammed clay wall. Directly adjacent to the east wall, there is a bricked room with an area of about 6.00 square metres, which is not accessible

Fig. 275 The south wall in the room above the New Entry Hall. The entrance to the space between the Main Temple and the Large ´Brom-ston Temple is located in the corner. It can only be entered from here. Neuwirth 2002.


Fig. 276 Original eave details on the south outer façade of the entrance hall of the Main Temple, which have been preserved under the later erected ceiling construction. The picture on the right shows the corner on the façades between the vestibule and the assembly hall of the Main Temple, which today can be seen in the space in between. Neuwirth 2002.


Fig. 277 The space between the outer walls of the Large ´Bromston and the Main Temple. The traces of the red wall painting in the lower part of the façades are still clearly visible. Left: the east walling in the back, which consists of a rammed clay wall. Right: the corner between the vestibule and the assembly hall of the Main Temple. The brick formats and a settlement crack are clearly visible in the lower area of this picture. Neuwirth 2002.


Fig. 278 The ceiling construction above the intermediate space consists of irregular round beams and logs. On the right, the west outer walling is visible, consisting of clay bricks which were not plastered inside. This walling closes the gap. Neuwirth 2002.

Fig. 279 The former vestibules with the entrances to the Golden Temple on the left, to the Large ´Brom-ston Temple in the middle, and to the New Entry Hall in front of the Main Temple on the right. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

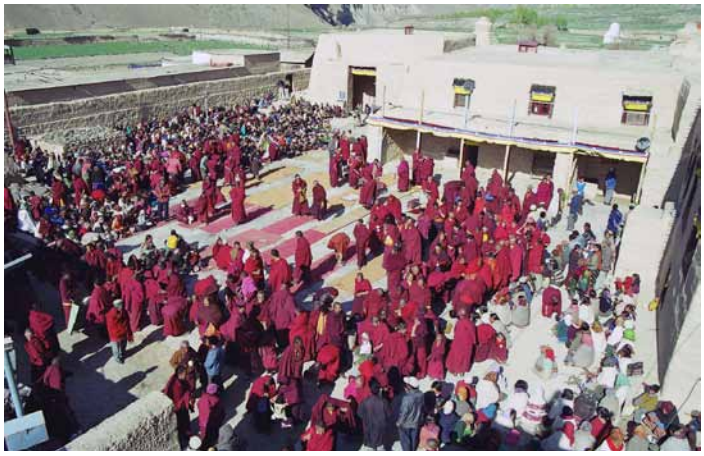


Fig. 280 The forecourt of Main Temple Complex with a huge gathering as part of the Kalacakra Ceremony in Tabo in July 2003. Today, an open veranda with a door to the temple´s vestibule is located in front of the Large ´Brom-ston Temple. Auer 2003.

Fig. 281 The west façade of the Large ´Brom-ston Temple with the wall of the intermediate space to the Main Temple Complex on the north side, and the stairway between the Large ´Brom-ston Temple and the Golden Temple on the south. Neuwirth 2003.

PART 4: THE LARGE ´BROM-STON TEMPLE

The Large ´Brom-ston Temple (Tib. *Brom-ston lha-khang chen-po)* consists of an anteroom with an upper floor and an assembly hall with an apse. Its external dimensions are 19 x 9.25 metres, with a height of 5.13 metres. An open veranda is located in front of this temple. Like the Main Temple, the Large ´Brom-ston Temple is oriented from east to west, with its entrance on the east side. While the veranda and the vestibule correspond to the orientation of the Main Temple, the main axis of the assembly hall deviates by 5° counter-clockwise from due east.

Eugenio Ghersi's photographs from 1933 show the former configuration of the temple with a simple, small vestibule that does not extend across the full width of the temple. Since then, the vestibule has been gradually enlarged and now extends over two storeys.

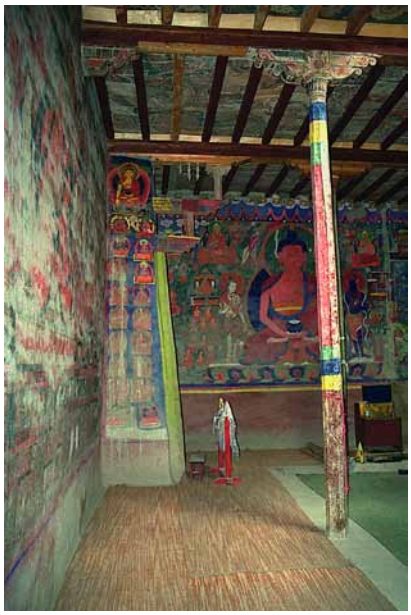
The open veranda, which is located today in front of the vestibule, extends over a total of 12.20 metres on the east side of the building complex and extends to the corner of the New Entry Hall, which is clearly visible on the outer façade. With a clearance height of 2.38 metres, the veranda forms a roofed space in front of the Temple, which is 8.30 metres wide and 2.60-2.70 metres deep and is closed in to the south and north by a side wall. The wooden ceiling above is supported by three wooden pillars, and the floor level of the veranda is 0.36 metre above the terrain. The north part of the veranda, under which the entrance to the New Entry Hall is located, is 2.72 metres wide and freely spanned.

A door in the middle of the veranda leads into the vestibule, whose side areas are separated. The northern area is bordered by a wall and accessible by a side door. The staircase to the upper floor is located in the south side area, and the other space is used as a storage room. The width of the free central area is about 1.50 metres, and the height of the space up to the wooden ceiling is 2.32 metres. The upper floor extends not only over the vestibule but as far as the north façade. The rooms on the upper floor are equipped with a total of three windows on the east side, whereby the room height here is 2.28 metres, so that the level of the flat roof above corresponds to that of the adjoining assembly hall.

The assembly hall can be accessed on the east side; the entrance opening is 0.88 metre wide and 1.84 metres high and consists of a multiple-stepped wooden portal, which is aligned exactly with the longitudinal axis of the hall. The hall is 7.50 metres wide, 10.30 metres deep up to the apse which adjoins it in the west and 5.30 metres high. The apse is a bit smaller, measuring 6 x 2.80 metres, while the height of the assembly hall remains unchanged.

Fig. 282 Left: The south wall of the assembly hall in the Large ´Brom-ston Temple with the south corner of the apse area and the supporting structure of the consoles under the main beam in front of the apse. Neuwirth 2002.

Fig. 283 Right: The east wall with the entrance to the assembly hall of the temple. Neuwirth 2002.



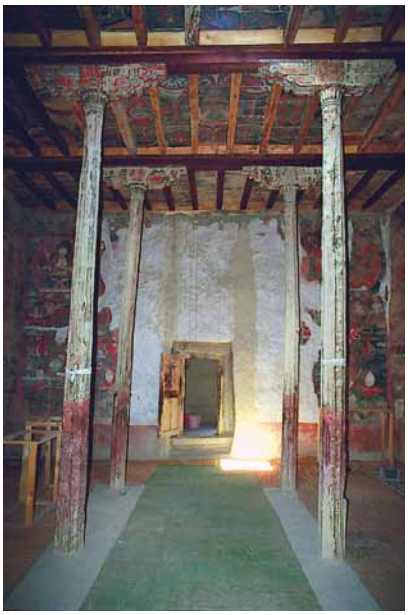
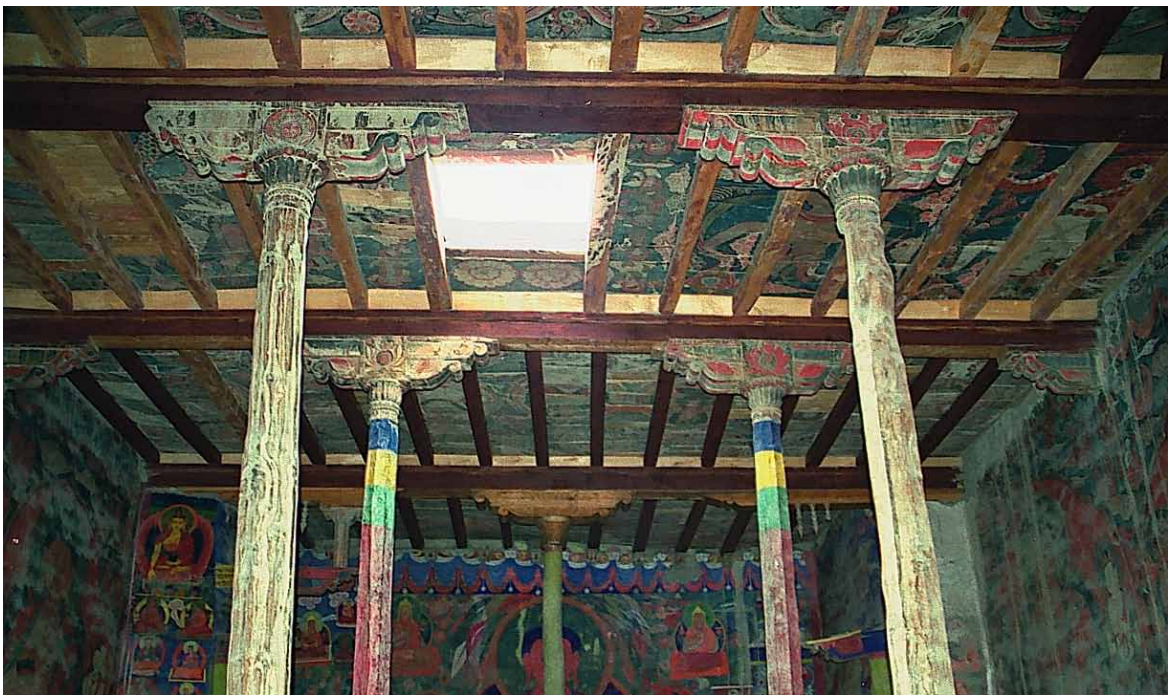


Fig. 284 The ceiling construction above the hall and the apse of the Large ´Brom-ston Temple with its coloured console capitals of the main beams and the ceiling opening in the middle of the room. The main beam in the rear, at the transition to the apse, was reinforced by a new central support. Neuwirth 2002.



Six pillars without bases support the three main beams of the ceiling construction. These beams run transversely to meet the main axis and divide the hall into three naves and four bays. The free spans of the main beams are between 2.20 and 2.50 metres long. The carved console capitals and the wall consoles of the main beams are painted. In the middle of the ceiling, there is a lantern that provides light in the room.

The change in the space between the assembly hall and the somewhat narrower apse is accentuated by the presence of three-staggered wall consoles with intermediate supports on both sides of the apse, which reduce the free span available for the ceiling beam above. However, this construction is only completely preserved on the south side; on the north side, only marginal remains of this structure have survived. In order to support the main beam above, another central, green-painted pillar was added later. The richly painted wooden ceiling represents an excellent example of preserved interior decoration. The wall surfaces are also decorated with murals. Around the entrance on the east wall of the assembly hall, this mural is missing in large areas, which have been newly plastered and whitewashed.[76]

The wall thicknesses of the Large ´Brom-ston Temple vary between 0.60 metre on the south wall and 1.00 metre on the west wall. The massive façades on the south and west sides were reinforced in the base area, partially by conical supporting pillars. Two supporting pillars reinforce the northwest corner of the apse. The intermediate space leading toward the Main Temple on the west side has been walled up, supporting the course of the wall. On the south façade, the corner between the hall and the apse has been reinforced by the raised staircase, while another massive supporting pillar secures the masonry of the two-storey vestibule

76 THAKUR 2001: 205-207.

Fig. 285 The wall paintings on the south wall in the assembly hall, starting at the east corner and extending across the middle part to the west corner. Neuwirth 2002.

Fig. 286 Above: two Examples of the coloured console capitals in the assembly hall of the Large ´Brom-ston Temple, supporting the main beam of the ceiling construction. Below: one of the coloured wall consoles is shown on the side walls of the assembly hall. Neuwirth 2002.

Fig. 287 Left: the subsequently installed central pillar is shown under the main beam in front of the apse. Neuwirth 2002.

Fig. 288 Below left: the three-staggered wall consoles which form the south support of the main beam in front of the apse. The upper wall console is decorated with three lathed cones. Right: the remains of the corresponding construction at the north support. Neuwirth 2002.

Fig. 289 Scaled photomontage of the paintings in the apse niche. © Neuwirth & Auer, TU Graz 2020.

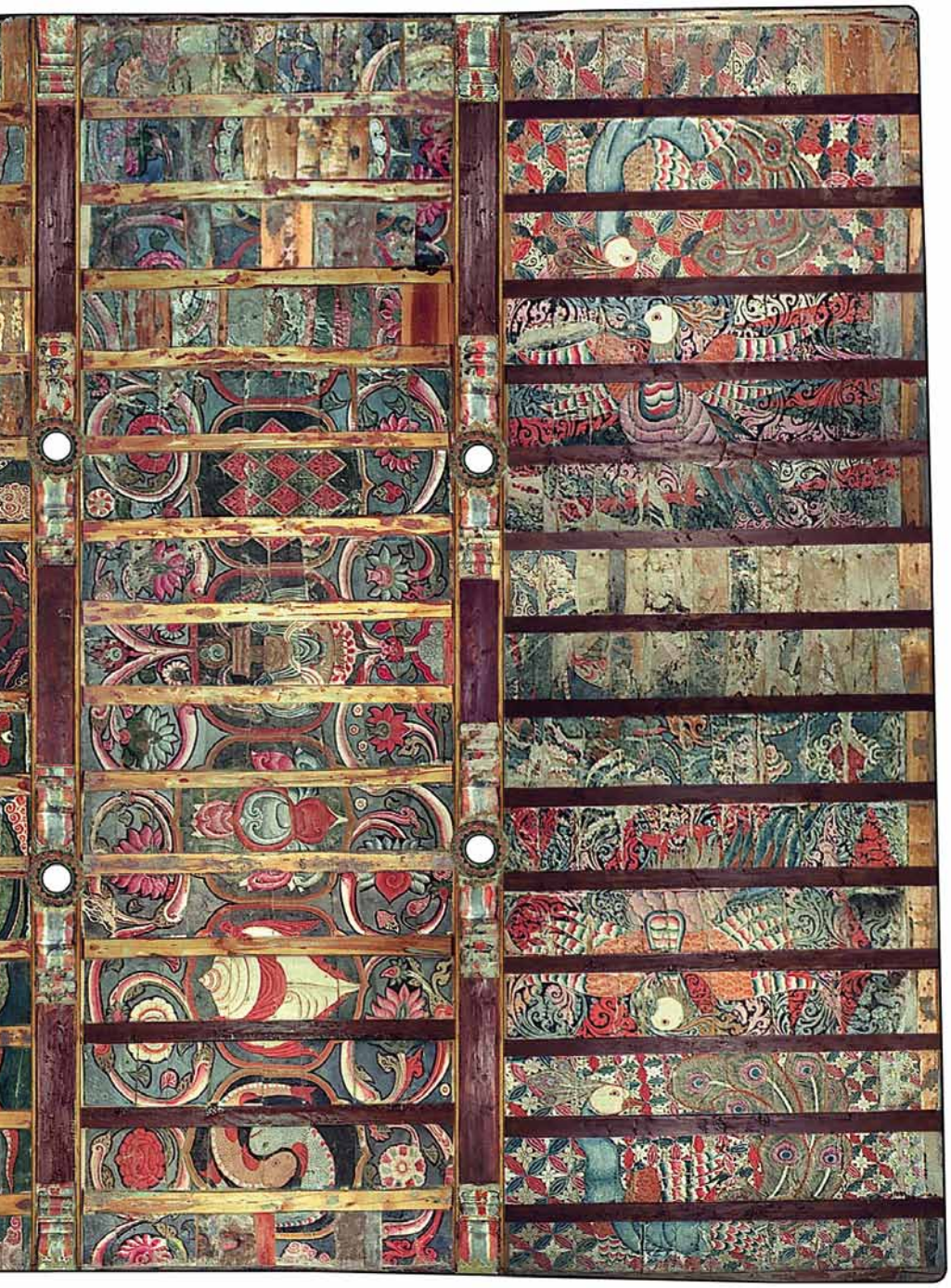


Fig. 290 Scaled photomontage of the painted wooden ceiling above the assembly hall and the apse of the Large ´Brom-ston Temple. Most of the fields of the wooden post ceiling are still painted, with the bays between the main beams painted with figures, animals, symbols and ornaments. © Neuwirth & Auer, TU Graz 2020.

Fig. 291 Spatial representation of the Main Temple Complex. Above: the eastern view of the building complex, with the two-storey wing in front of the Main Temple in the foreground; the open veranda in front of the Large ´Brom-ston Temple appears in the background © Neuwirth & Auer, TU Graz 2020.

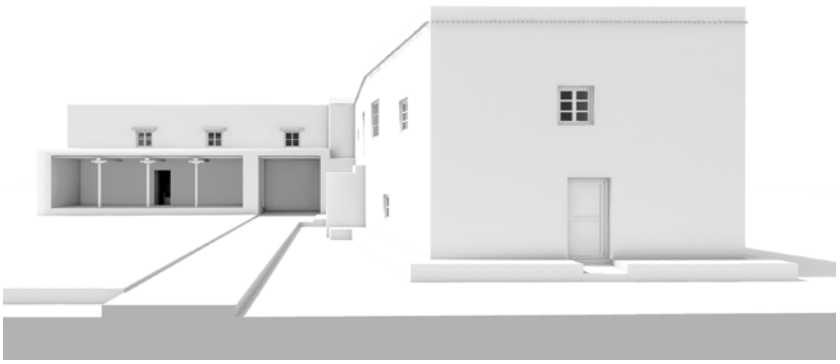
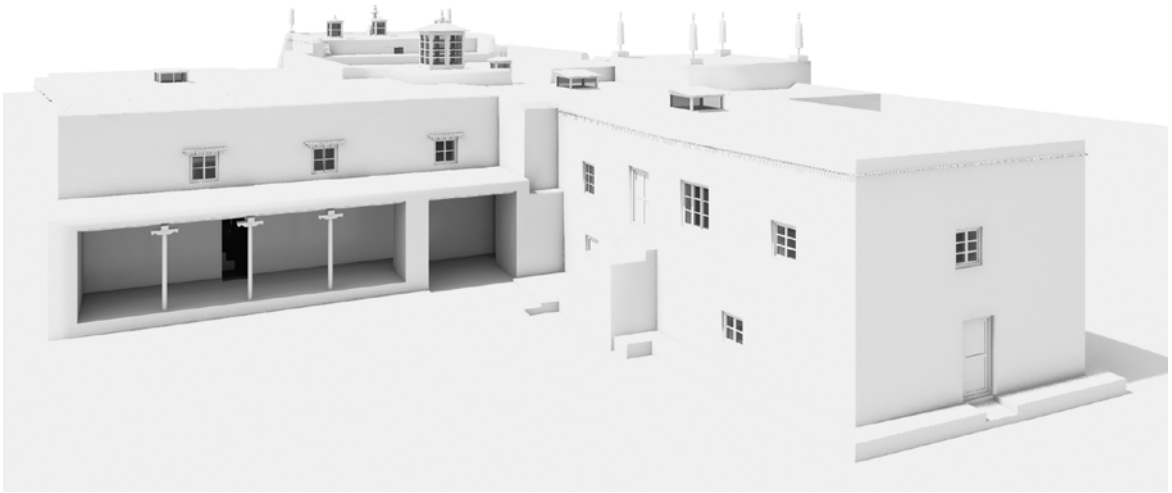


Fig. 292 Bird´s eye view of the Main Temple Complex, as seen from southeast with the open veranda in front of the vestibule of the Large ´Brom-ston Temple and the two-storey wing in front of the Main Temple. © Neuwirth & Auer, TU Graz 2020.



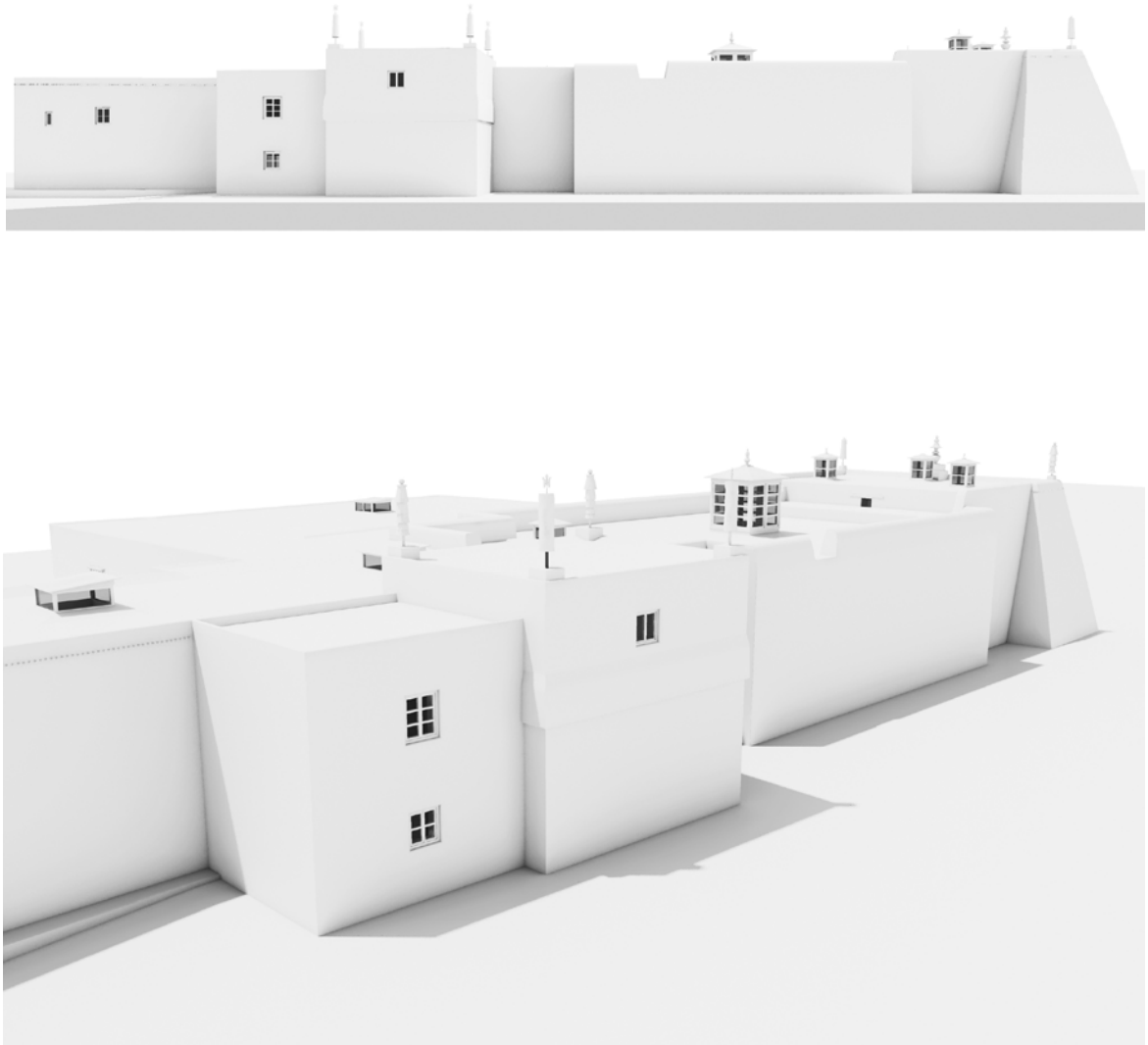
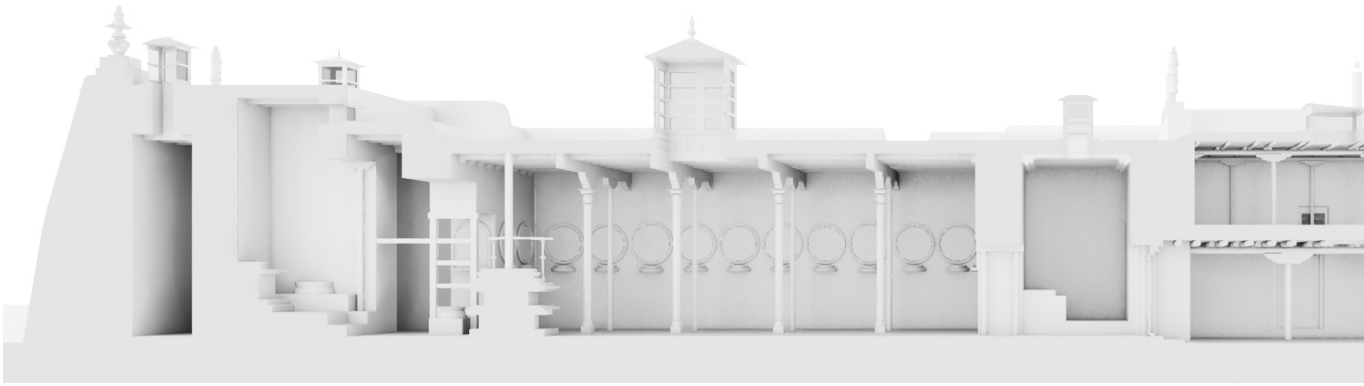
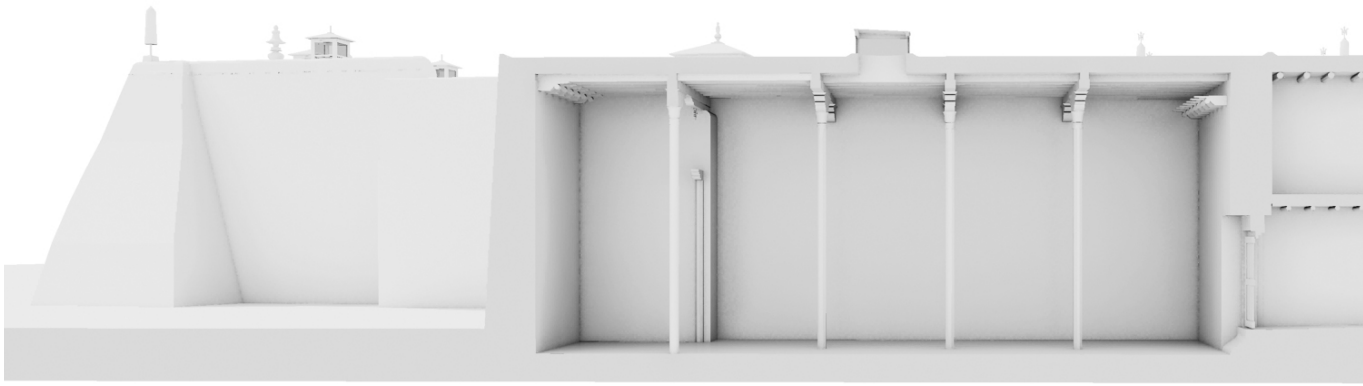


Fig. 293 Spatial representation of the Main Temple Complex. Above: the north facade. Below: the bird´s eye view from the northeast with the two-storey wing in front of the Main Temple. The extensions in the base zone of the outer walls added during the last restoration are not shown to illustrate the original appearance. © Neuwirth & Auer, TU Graz 2020.





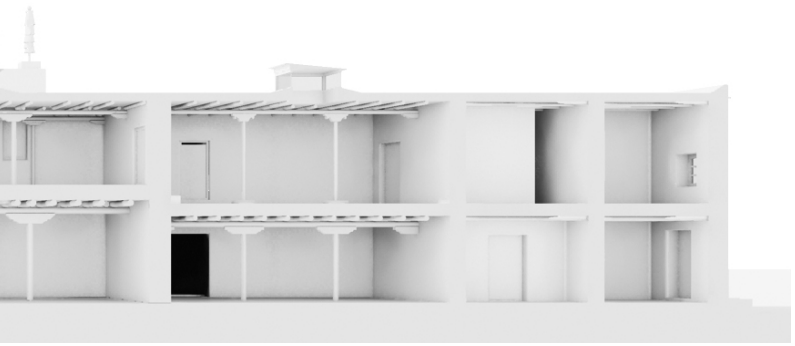


Fig. 294 The longitudinal section through the interior of the Main Temple, the New Entry Hall and the adjoining rooms on the east side. © Neuwirth & Auer, TU Graz 2020.

Fig. 295 The longitudinal section through the Large ´Brom-ston and its vestibule, with the Main Temple and its annexes shown in the background. © Neuwirth & Auer, TU Graz 2020.

Fig. 296 Southern view of the Main Temple complex, with the façade of the Large ´Brom-ston Temple in the foreground and the Main Temple and its annexes in the background. © Neuwirth & Auer, TU Graz 2020.

Fig. 297 The cross-sections of the Main Temple Complex. Above: the cross-section in front of the cella and the ambulatory.

Fig. 298 The cross-section through the assembly hall with a view of the portal in front of the cella.

Fig. 299 Below: the cross-section through the assembly hall of the Main Temple and the adjoining assembly hall of the Large ´Brom-ston Temple to the south. © Neuwirth & Auer, TU Graz 2020.

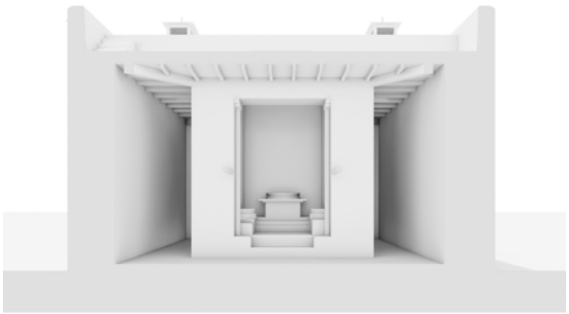
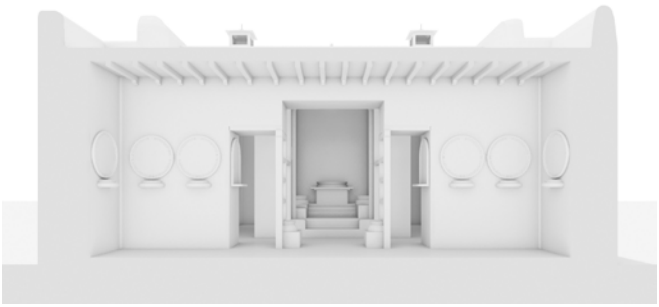
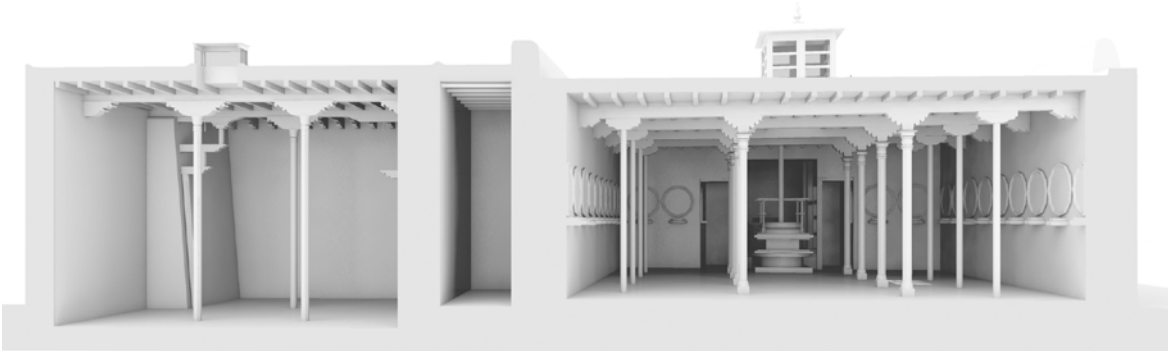


Fig. 300 Overleaf: On top, the cross-section through the vestibule of the Main Temple and the assembly hall of the Large ´Brom-ston Temple to the south.

Fig. 301 The cross-section through the New Entry Hall and the Protector Chapel and their rooms above and the Large ´Brom-ston Temple to the south.

Fig. 302 Below: the cross-section through the two-storey wing on the east side; the veranda in front of the Large ´Brom-ston is shown in the background. © Neuwirth & Auer, TU Graz 2020.





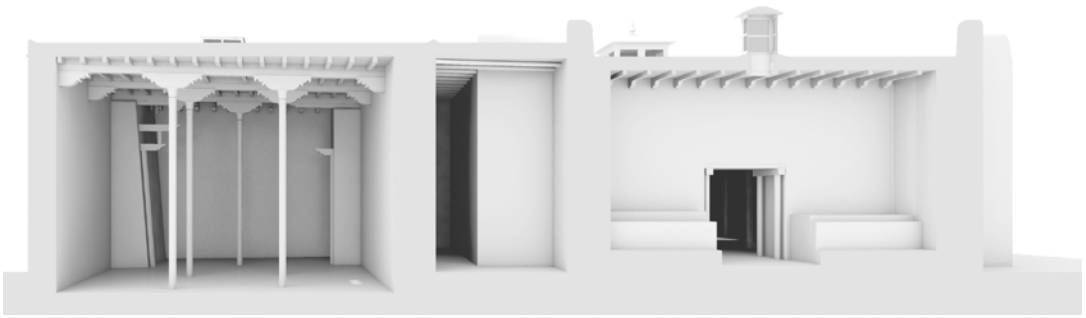


Fig. 303 The east façade of the Golden Temple with its vestibule and, next to it, the stairway connecting to the Large ´Bromston Temple. Neuwirth 2002.

The Golden Temple (Tib. *gSer lha-Khang)* is located on the south side of the Large ´Brom-ston, set back to the west, creating an open forecourt which is bordered on the south side by the monastery wall. The Golden Temple consists of an approximately square main room with an open vestibule and is oriented from east to west. Its main axis deviates by 2° counter-clockwise from the eastern orientation.

The outer façades of the temple are 11 metres wide and 12 metres long with a total height of 5.80 metres. With a width of 7.50 metres, a length of 2.20 metres and a total height of 3.70 metres, the vestibule is considerably smaller than the main structure. A walled support pillar reinforces the northeast corner, following the stairway between the Golden Temple and the Large ´Brom-ston Temple. This stairway reinforces the north façade of the Golden Temple, and it reaches a height of about 2.50 metres at the highest point. In addition, the north façade is supported on the northwest corner by a half-height supporting pillar, which almost reaches the corner of the Mandala Temple. The base zone of stone masonry on the east, south and west sides, which is about 1.00 metre high and between 1.20 and 0.90 metres deep at the top, was erected during the restoration work.

The roof of the vestibule can be accessed via the stairway pedestal on the north side, while some steps on the south side of the vestibule´s roof lead further up to the main roof. Both roofs are flat and have no attics. In the middle of the main roof, there is a small glazed lantern that provides interior lighting.

Fig. 304 Left: The roof above the Golden Temple, with the enclosing wall of the monastery in the background. Auer 2003.

Fig. 305 Right: The west façade of the Golden Temple, which clearly shows the conical form of the wall. Neuwirth 2002.

Fig. 306 View toward the stairway between the Golden Temple and the Large ´Brom-ston Temple, leading to the Mandala Temple, located behind. Auer 2003.

Fig. 307 Eastern view of the Golden Temple before the comprehensive restoration of the monastery complex. Khosla 1979: Illustration 46.

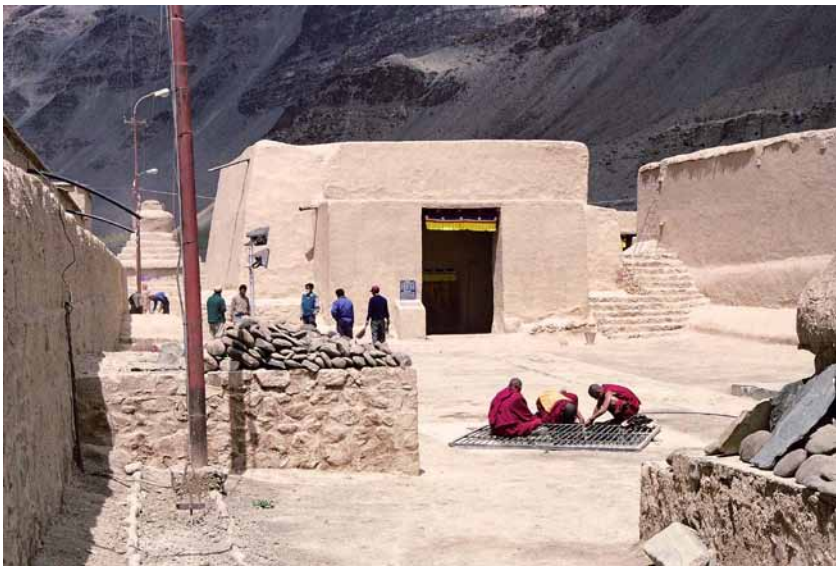
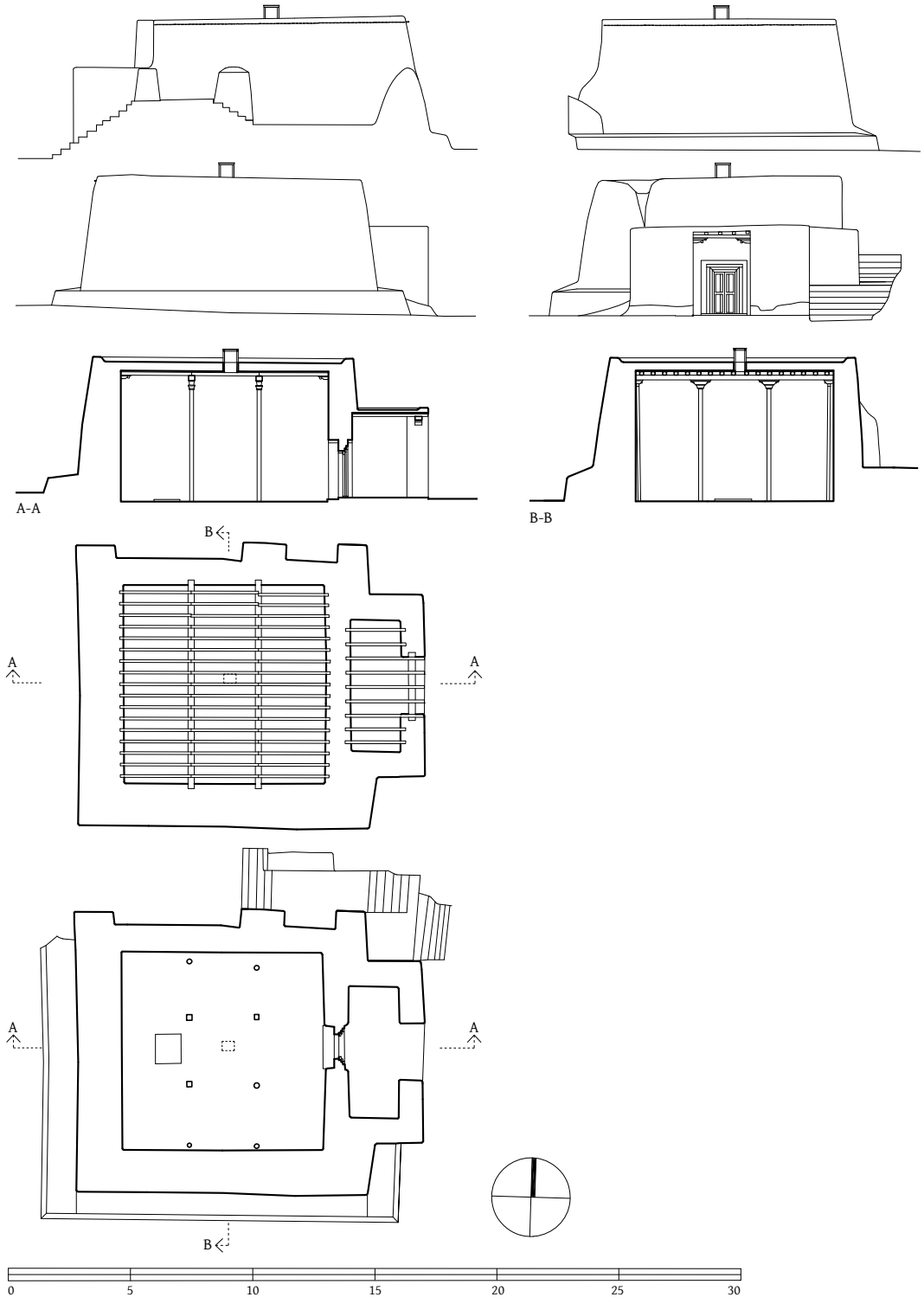


Fig. 308 Eastern view of the Golden Temple after the restoration and redevelopment of the area. Neuwirth 2003.


A-A
B-B
B
A
A
A
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30

The room-high opening on the east side of the vestibule is 2.30 metres wide and leads into a room which is 5.40 metres wide, 2.00 metres deep and 3.40 metres high. From this vestibule, one enters the interior of the temple through a door in the middle of the east wall. This temple is almost completely preserved. The floor level in the interior is about 0.20 metre lower than that in the vestibule. The almost square hall is 8.10 metres wide, 8.30 metres deep and 5.30 metres high. This results in an approximate space ratio of 3:2.

Four pillars without bases – three with square and one with round profile – support the two transverse main beams of the ceiling construction and divide the hall into three naves and three bays. To reinforce the wall consoles, four additional pillars were inserted under the lateral wall consoles of the main beams. The carved, richly decorated and coloured console capitals of the four pillars and the four wall consoles of the main beams are striking. The free spans for the main and secondary beams vary between 2.50 and 2.70 metres in length. The figural and ornamental painting of the ceiling has been partly well-preserved, especially on the west and north sides of the room. Other parts of the ceiling painting are hardly recognizable due to water damage.[77]

The walls of the main room are partially conical, which means that they are significantly thicker in the lower part of the wall than at the level of the ceilings. Accordingly, they vary between 1.70 metres and 1.30 metres in thickness on the south and west façades. The wall thicknesses of the north and east walls as well as the vestibule walls vary between 1.00 and 1.10 metres.

77 THAKUR 2001: 186-192.

Fig. 309 Overleaf: Plan documentation of the Golden Temple. Above: the north, west, south and east elevation. Middle: the longitudinal section and the cross-section. Below: the floor plan with the entrance hall facing east and, next to it, the ceiling plan. © Neuwirth & Auer, TU Graz 2020.

Fig. 310 Left: The wall paintings inside the Golden Temple. View of the east wall with the entrance door. Neuwirth 2002.

Fig. 311 Middle area of the north wall. Neuwirth 2002.

Fig. 312 Right: Middle part of the west wall with the altar standing in front of it. Neuwirth 2002.

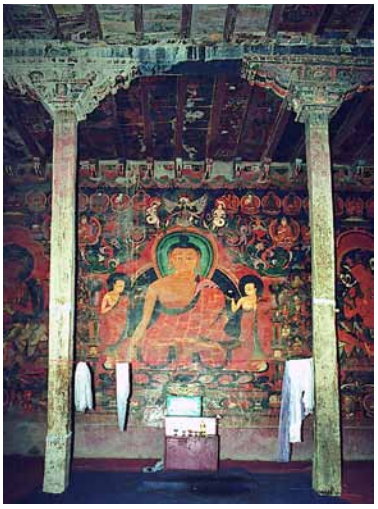


Fig. 313 The carved, coloured wall consoles, which are used as lateral supports of the main beams. The wall consoles were subsequently reinforced with wooden pillars. Above: the right console of the southern wall with the representation of a human hybrid. Middle: the left console of the north wall, showing another representation of a human hybrid. Below: the right console of the north wall, showing a representation of a lion. Neuwirth 2002.

Fig. 314 West side of the carved and coloured console capital above the northwest support of the ceiling construction. Neuwirth 2002.

Fig. 315 East side of the carved and coloured console capital above the northwest support of the ceiling construction. Neuwirth 2002.

Fig. 316 The two main beams of the ceiling construction facing northwest. Neuwirth 2002.

Fig. 317 The west main beam and the painted wooden ceiling above, next to the north wall with the image of the four-headed Vairocana. Neuwirth 2002.

Fig. 318 Scaled photomontage of the painted ceiling in the Golden Temple. The painting in the third yoke in front of the west wall shows the best state of preservation. © Neuwirth & Auer, TU Graz 2020.

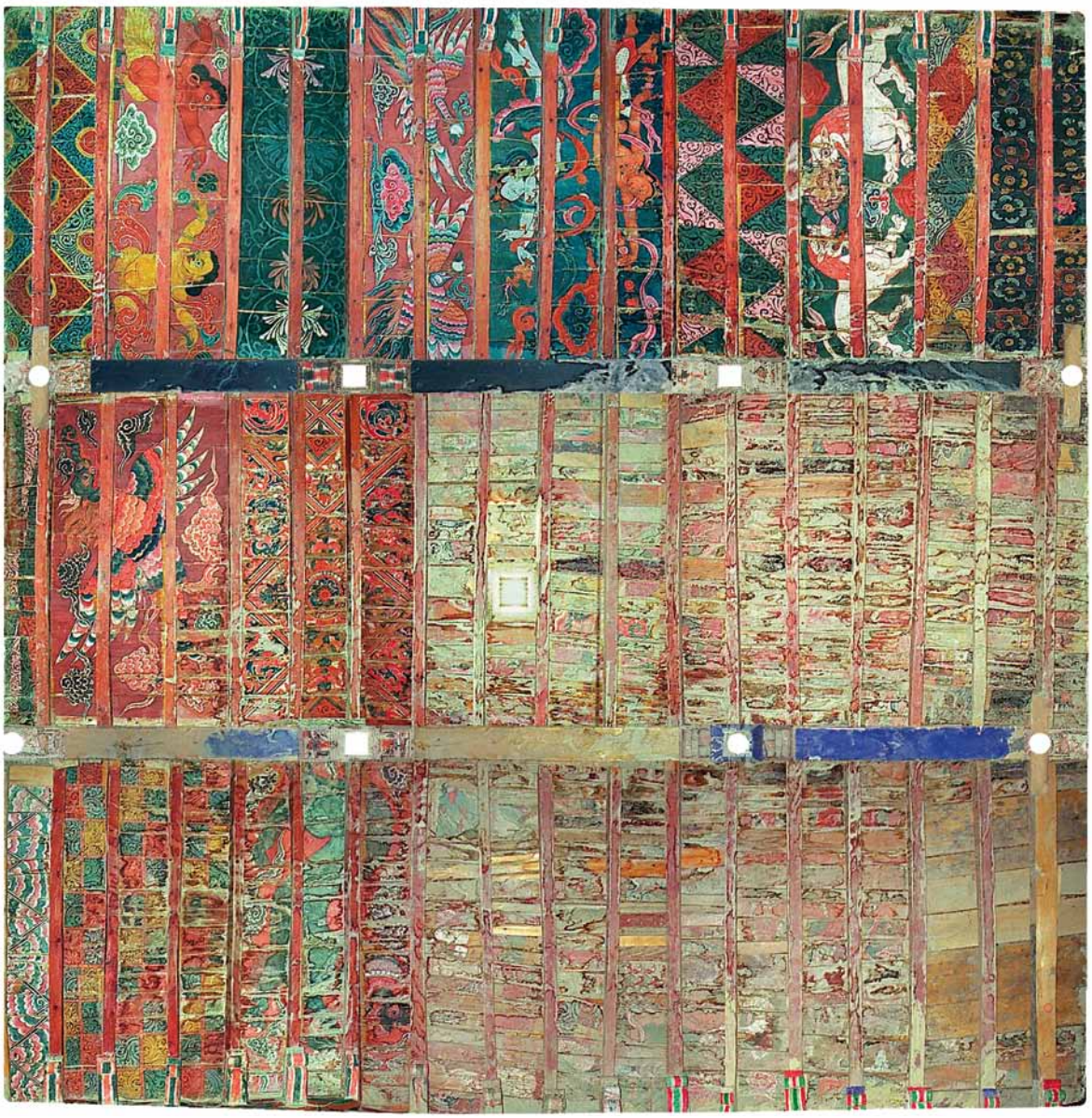


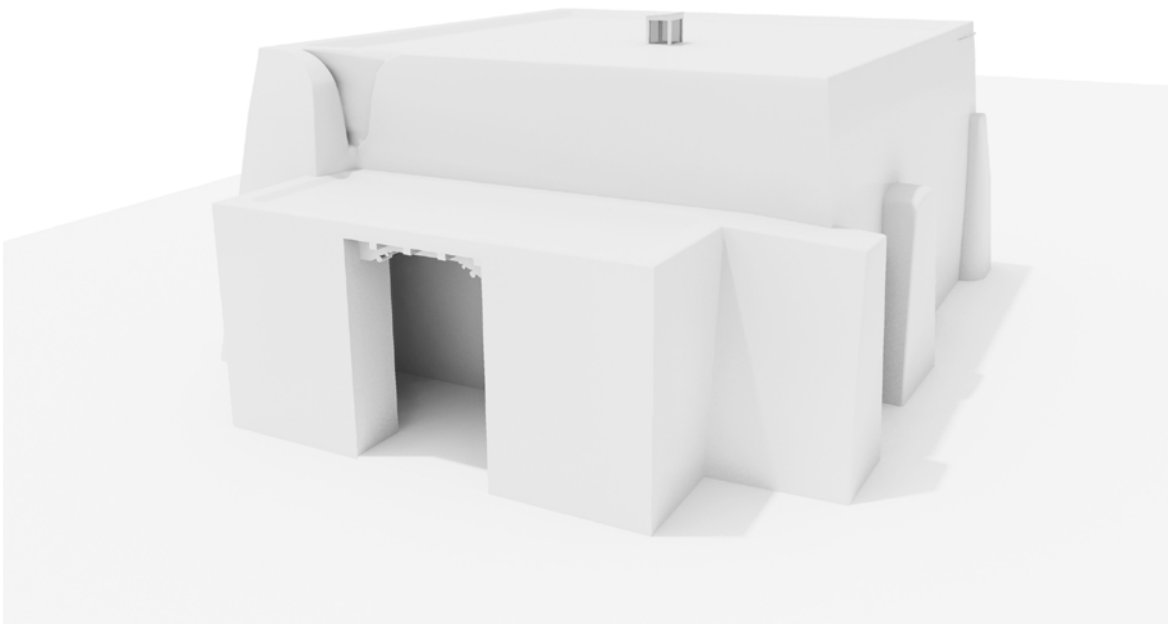
Fig. 319 Scaled photomontage of the murals in the Golden Temple: The east wall. © Neuwirth & Auer, TU Graz 2020.

Fig. 320 Scaled photomontage of the murals in the Golden Temple: The south wall. © Neuwirth & Auer, TU Graz 2020.

Fig. 321 Scaled photomontage of the murals in the Golden Temple: The west wall. © Neuwirth & Auer, TU Graz 2020.

Fig. 322 Scaled photomontage of the murals in the Golden Temple: The north wall. © Neuwirth & Auer, TU Graz 2020.

Fig. 323 Spatial representation of the Golden Temple. Bird´s eye view from northeast. In the representation of the outer appearance, the wall pedestals and the stairs were omitted in order to show the original cubature. © Neuwirth & Auer, TU Graz 2020.



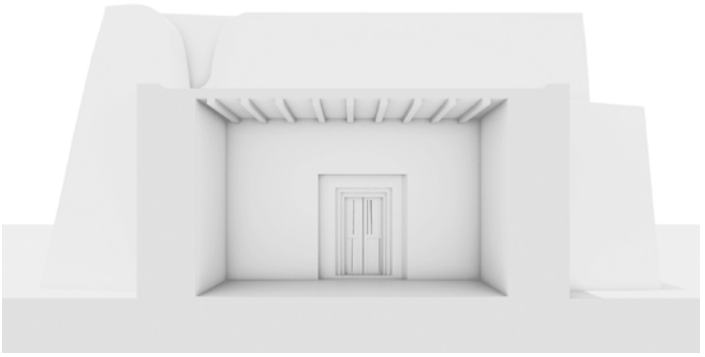


Fig. 324 The cross-section through the vestibule with the entrance to the main room. © Neuwirth & Auer, TU Graz 2020.

Fig. 325 The cross-section through the main room facing west. © Neuwirth & Auer, TU Graz 2020.

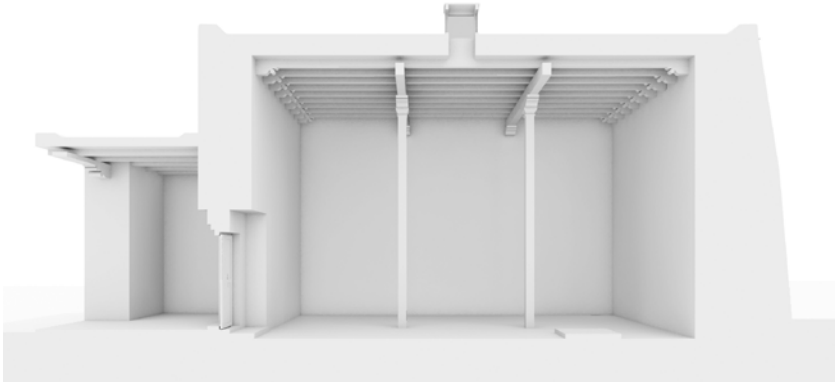


Fig. 326 The longitudinal section through the open vestibule and the main room facing south. Here, the conicity of the west wall is particularly evident. © Neuwirth & Auer, TU Graz 2020.

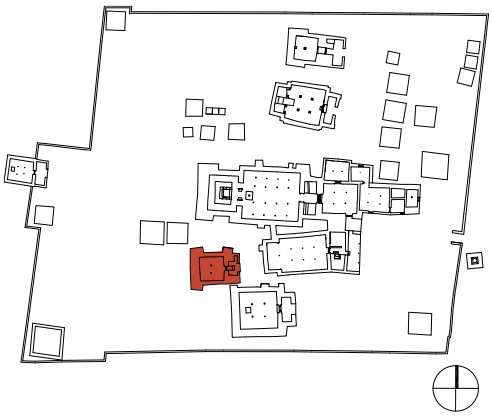


Fig. 327 Northeast view of the Mandala Temple with the open vestibule on the east side, seen from the roof of the Main Temple. Neuwirth 2003.

THE MANDALA TEMPLE

The Mandala Temple (Tib. *dKyil 'khor lha khang)* is located south of the Main Temple, hidden behind the Large ´Brom-stone and the Golden Temple. The stairway between the Large ´Brom-ston and the Golden Temple leads to a small forecourt on the west side, which leaves a passageway open along the south façade of the Main Temple.

The almost square Mandala Temple is equipped with a small vestibule that opens onto the courtyard. Its orientation deviates by 1° counter-clockwise from the east and has thus nearly the same orientation as at the Golden Temple, which stands directly in front of it. The outer appearance shows wall reinforcements on the north side, on the southeast corner next to the Golden Temple and in the massive construction of its west wall. Francke and Khosla reported that, during their visit, the Mandala Temple did not yet have a vestibule.[78]

In its external dimensions , the Mandala Temple is up to 7.10 metres wide and 8.40 metres long with a total height of about 4.00 metres. The protruding reinforcements on the west façade extend along the width of the base area (i.e. 9.30 metres). The vestibule is 6.40 metres wide and 2.50 metres long with an external height of 2.90 metres. Where the vestibule joins the wall of the main room, the north façade is reinforced by a striking supporting pillar that is rounded at the top. The north, west and south façades are again reinforced by a horizontally levelled base zone, which follows the course of the façades and is between 0.30-0.80 metre high and 0.70-1 metre wide. The roof areas are flat and without parapets. In the middle of the main roof, an entirely glazed lantern construction provides interior lighting.

78 FRANCKE 1999: 39; KHOSLA 1979: 38-39.

Fig. 328 Left: Northern view of the Mandala Temple with the conical abutment on the west side of the temple, reaching far beyond the façade. Neuwirth 2003.

Fig. 329 Right: The west façade is formally determined by the massive abutment. Neuwirth 2002.

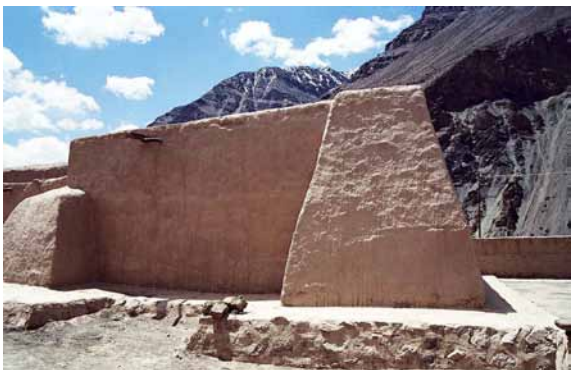


Fig. 330 View from the stairway between the Golden Temple and the Large ´Brom-ston to the east façade of the Mandala Temple with the supporting pillar directly adjoining the Golden Temple on the south side of the vestibule. Neuwirth 2002.

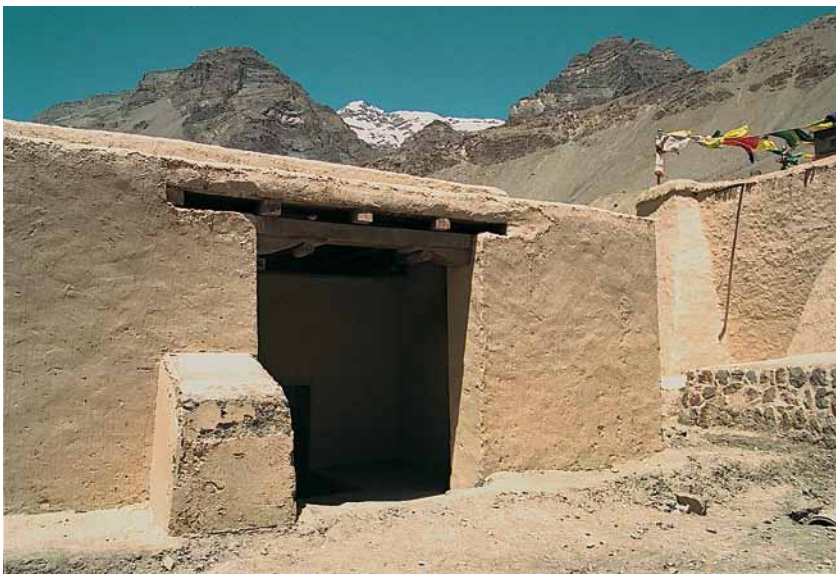


Fig. 331 Entrance on the east side of the Mandala Temple. Neuwirth 2002.

Fig. 332 The forecourt in front of the Mandala Temple is formed by the north façade of the Golden Temple and the west façade of the Large ´Bromston Temple. Auer 2003.

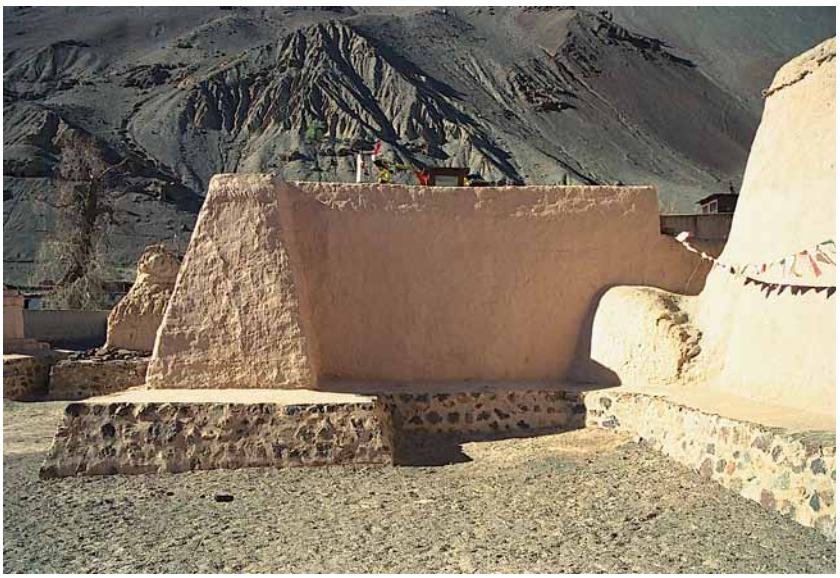
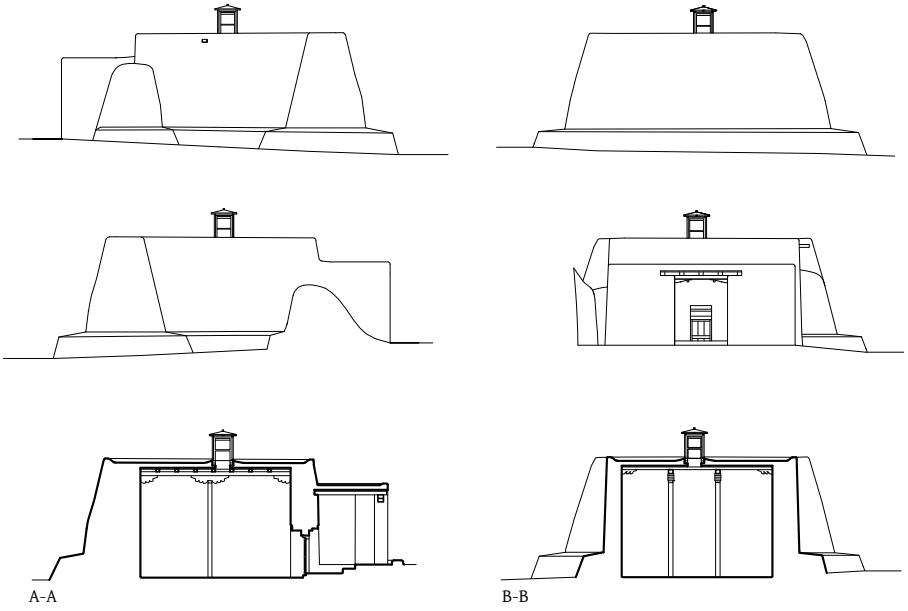


Fig. 333 South view of the Mandala Temple with the projecting abutment on the west side of the temple and the surrounding base zone made of stone masonry. Neuwirth 2002.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The entrance to the vestibule consists of a 1.90-metre-wide and 2.35-metre-high opening in the east wall, which leads over a threshold into an asymmetrical room, which is 3.00 metres wide, 2.00 metres deep and 2.50 metres high. A 0.68-metre-wide niche next to the north inner wall expands the room by 1.20 metres. From this vestibule, three steps lead through a door in the middle of the east wall to the interior level of the main room, whose floor level lies 0.46 metre lower.

The main room is square with a width and depth of 5.30 metres, the height of the room up to the board layer is 3.80 metres, which corresponds to the height of the painted wall surfaces. Two pillars support the main beams of the ceiling construction, which divide the space into three naves. The orientation of the main beams, which here run in parallel to the longitudinal axis of the temple, is remarkable, whereas these are arranged transverse to the longitudinal and access axis in all other temples in the monastery complex. The pillars are not positioned in the middle of the room, as it is usually the case, but are shifted slightly to the west, so that the distance between the pillars is 2.40 metres on the west side and 2.80 metres on the east side. The width of the naves varies between 1.60 and 1.80 metres. The console capitals and wall consoles are painted. The painted wooden ceiling is almost completely preserved in a good condition.

The wall thicknesses range between 0.80 and 1.00 metre, with the exception of the conical abutment of the west wall, where the wall has a considerable 2.00-metre thickness, which is reduced to 1.50 metres in the ceiling area. This construction feature can be found in a similar form on the west side of the Main Temple and the Small ´Brom-ston and may be related to the building age, since we assume that the mural painting was reimplemented later based on the building age of the Mandala Temple.[79]

Particular attention has been paid to a detail in the mural painting on the lower-left part of the north wall, which inscriptions refers to the Golden Temple of Tholing and the monastery complex in Tabo. The names of the buildings depicted were translated by Tucci as: "*plan of the Gser khang of Tholing*" and "*ground plan of the temple, ornament of Tabo*".[80] Some of the building depictions in the central area are interrupted by an overlaid painting that includes a collection of figural scenes.[81] If one looks at the representation, however, one recognizes views of individual temples, which cannot be clearly related to the mentioned buildings.

Fig. 334 Overleaf: Plan documentation of the Mandala Temple. Above: the northern view and the western view. In the second line: the southern view with the retaining wall in connection with the Golden Temple and, next to it, the eastern view with the open vestibule. Middle: The longitudinal section and the cross-section of the temple, next to the strongly conical wall of the west façade caused by the abutment. Below: the floor plan with the open vestibule to the east and the interior with the two pillars. Above it, the beam position of the ceiling construction. © Neuwirth & Auer, TU Graz 2020.

79 TUCCI 1988b: 109; THAKUR 2001: 198; HELLER 2017: 221-225.
80 TUCCI 1988b: 112-113; THAKUR 2001: 198.
81 THAKUR 2001: 192-200.

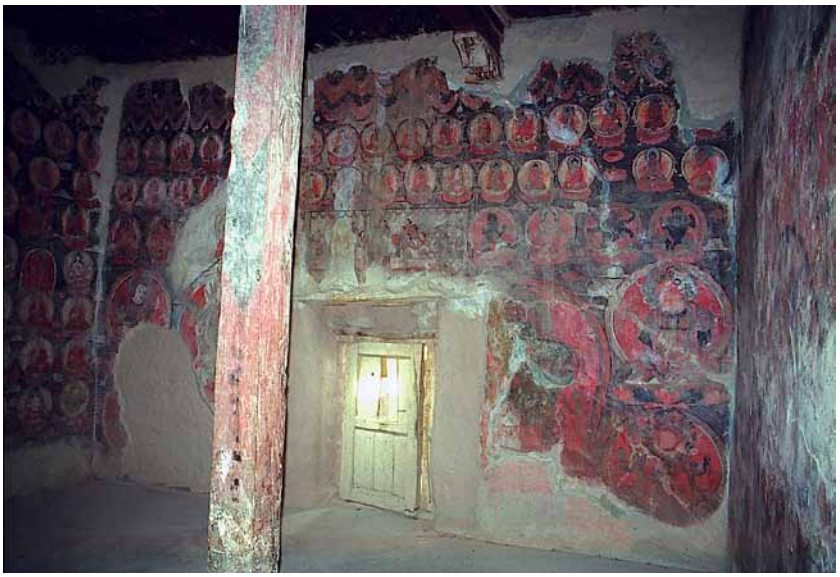


Fig. 335 The east wall with the entrance door to the main room of the Mandala Temple. Neuwirth 2002.

Fig. 336 View toward the west and north wall. The main beams run in the longitudinal direction and divide the room and the ceiling into three naves. Neuwirth 2003.

Fig. 337 Representation of the four-headed Vairocana in the centre of the west wall. Neuwirth 2002.

Fig. 338 The hardly recognizable representation of the monasteries in Tholing and Tabo on the lower left-hand side of the north wall. Neuwirth 2002.

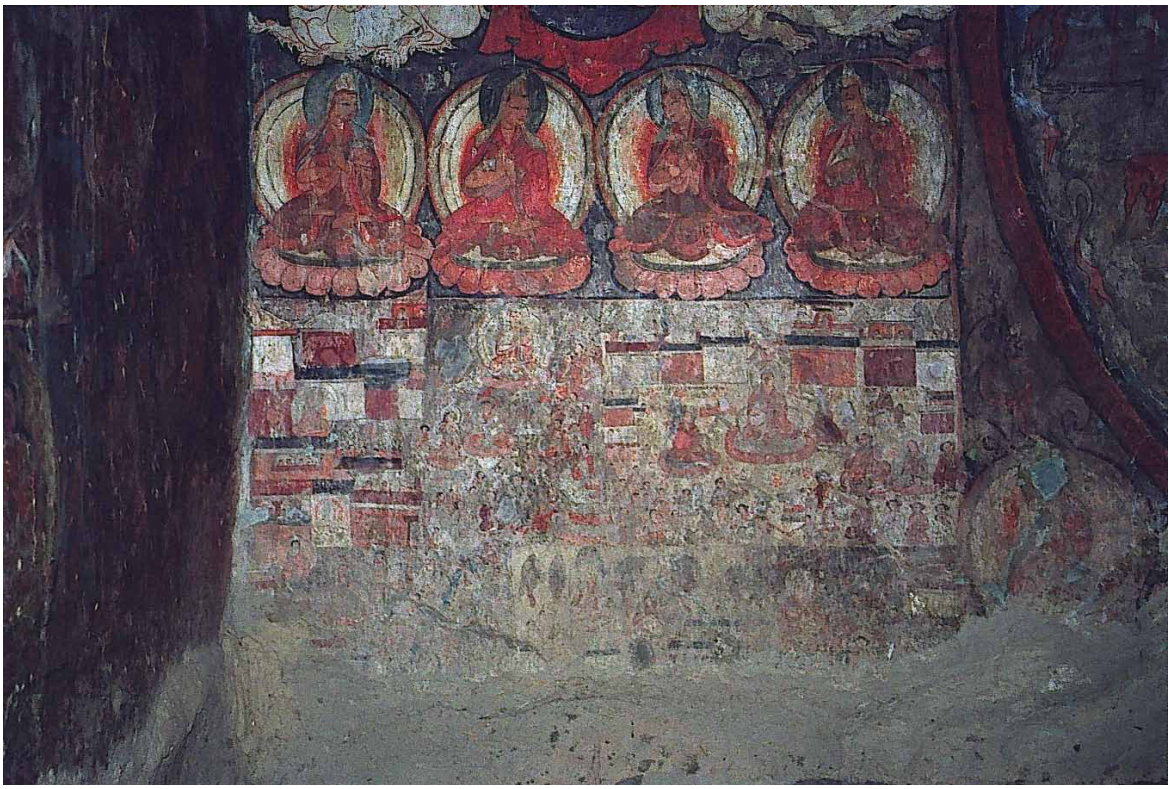


Fig. 339 Scaled photomontage of the murals in the Mandala Temple: The east wall. © Neuwirth & Auer, TU Graz 2020.

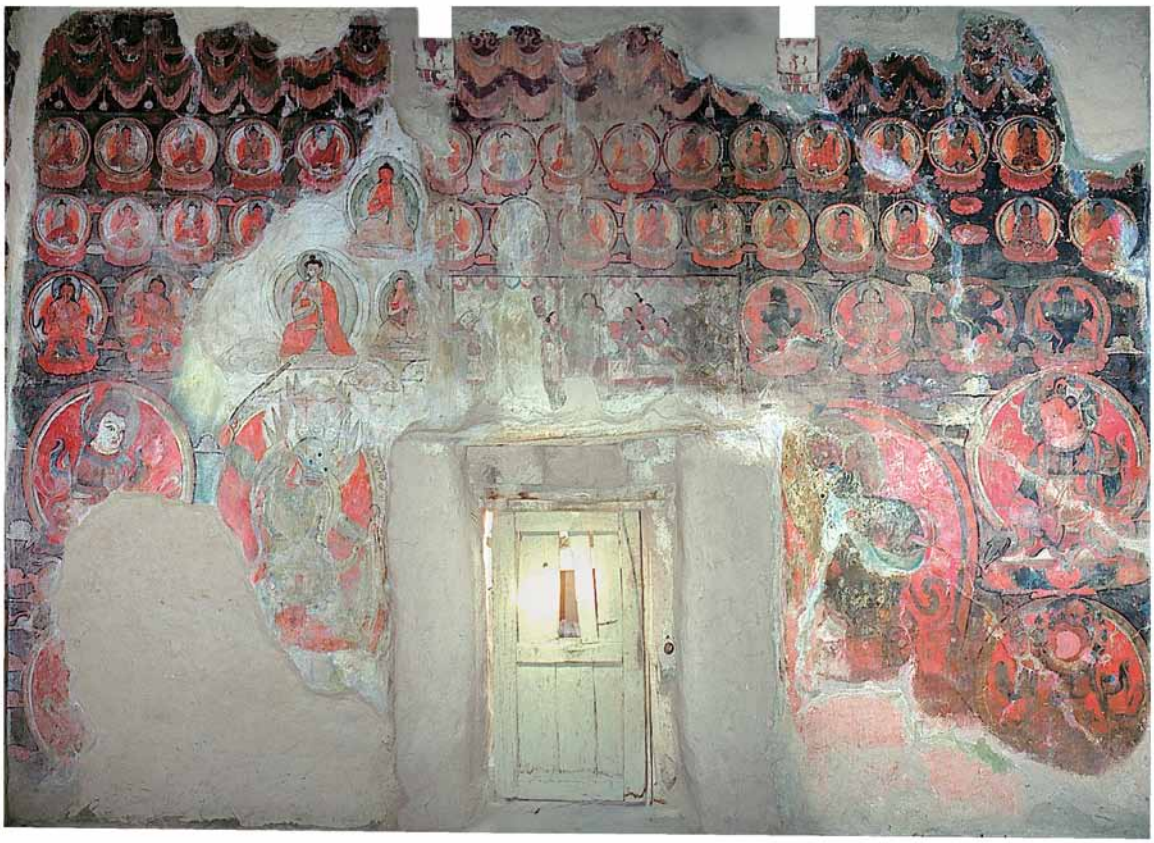


Fig. 340 Scaled photomontage of the murals in the Mandala Temple: The south wall. © Neuwirth & Auer, TU Graz 2020.

Fig. 341 Scaled photomontage of the murals in the Mandala Temple: The west wall. © Neuwirth & Auer, TU Graz 2020.

Fig. 342 Scaled photomontage of the murals in the Mandala Temple: The north wall. © Neuwirth & Auer, TU Graz 2020.

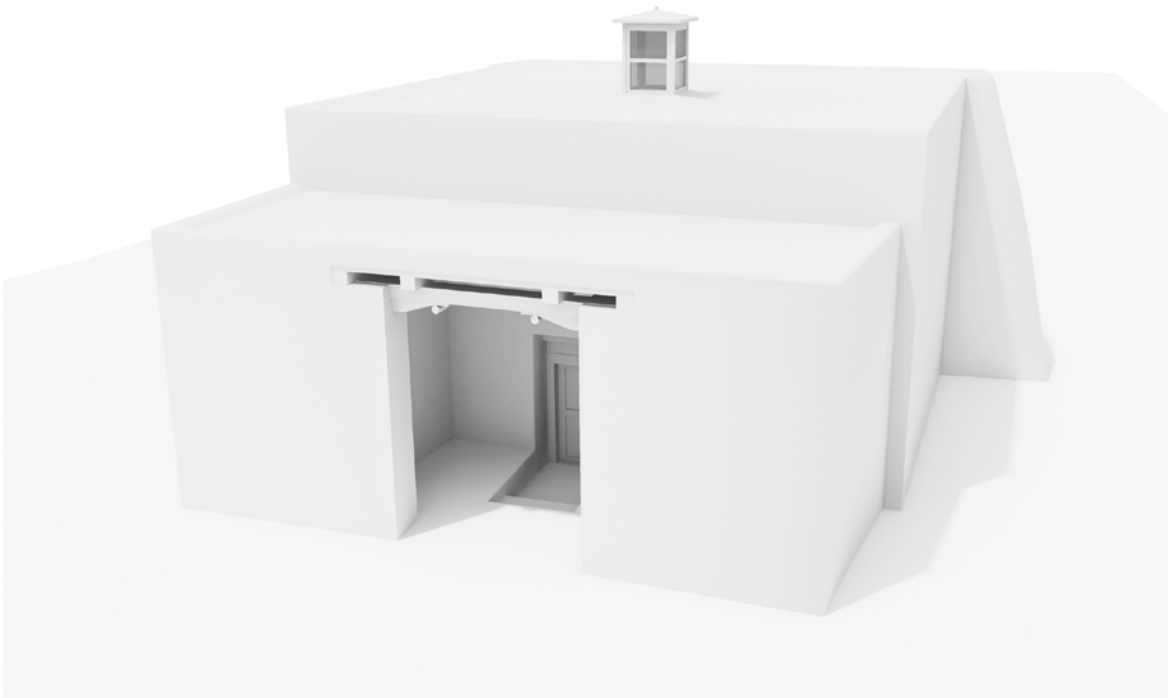
Fig. 343 Skylight of the lantern in the central area of the painted ceiling. Neuwirth 2003.

Fig. 344 The coloured wall consoles supporting the secondary beams next to the north wall. Neuwirth 2003.

Fig. 345 The wall consoles of the secondary beams in the northeast corner, supporting the painted ceiling. Neuwirth 2002.

Fig. 346 Scaled photomontage of the painted ceiling in the Mandala Temple, which is almost completely preserved. © Neuwirth & Auer, TU Graz 2020.

Fig. 347 Spatial representation of the Mandala Temple. Bird´s eye view from the northeast. In the representation, the supporting posts that were added later and the surrounding stonework base were omitted in order to clarify the original appearance. © Neuwirth & Auer, TU Graz 2020.



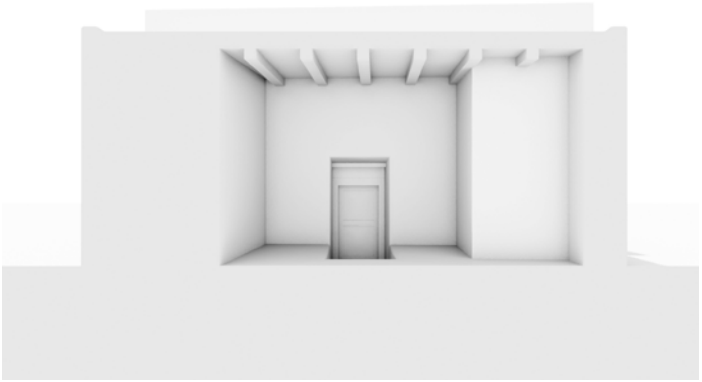


Fig. 348 Cross-section through the vestibule with the door into the temple room. © Neuwirth & Auer, TU Graz 2020.

Fig. 349 Cross-section through the interior of the temple, view to the west. © Neuwirth & Auer, TU Graz 2020.

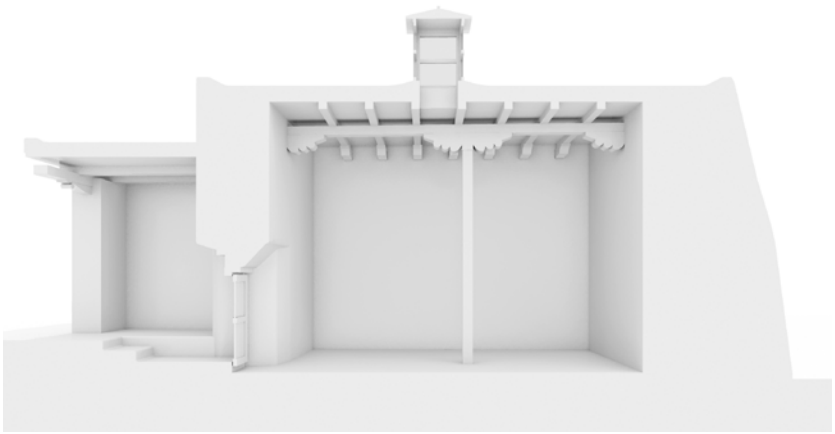
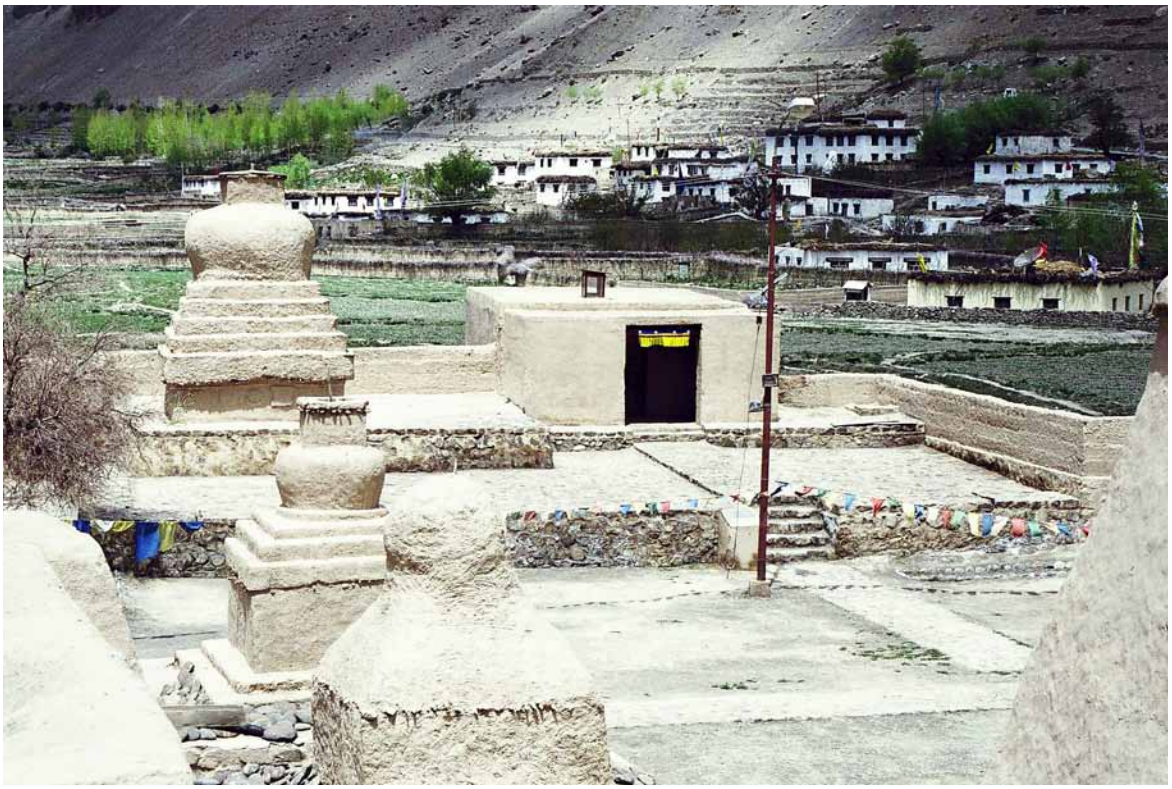


Fig. 350 Longitudinal section through the open vestibule and the temple interior, view to the south. © Neuwirth & Auer, TU Graz 2020.

Fig. 351 View from the southeast toward the White Temple, located on the stepped terraces on the west side of the monastery area. Auer 2003.



To the west of the Main Temple Complex, there is an elevated plateau that is paved with stone slabs and extends up to the enclosure wall of the sacred compound. One of the large chörten stands on the south side of this plateau, at a distance of four meters from the White Temple (Tib. *dkar chung lha khang)*. Five steps lead upwards to the White Temple, which is located on the west side of the plateau. Although the White Temple's entrance and the vestibule – just like all other temples – faces east, its longitudinal axis deviates 9° clockwise from due east.

With a width of 6.10 metres and a depth of 6.50 metres, the temple protrudes to the west, extending beyond the enclosure wall of the monastery area. The outer walls of the temple on the south, west and north sides bridge the difference in ground level between the monastery area and its surroundings (2.20 metres in height on average). On these three sides, the outer façades reach a total height of 5.27 metres, while the east facade, which is located inside the monastery area, is only 3.13 metres high. The façades outside the walled enclosure were reinforced in the base zone by conical retaining walls 1.44 metres high and 0.70-0.90 metre deep and have characterised the appearance of the structure since the last restoration.

The enclosure wall of the monastery area is directly connected to the northeast and southeast corners of the temple. The vestibule is only slightly narrower and lower than the main building. From the upper terrace, two steps lead upwards via a 1.80-metre-wide and room-high wall opening into the vestibule of the White Temple.[82]

82 There was no vestibule before the restorations performed in the 1980s or 1990s. FRANCKE 1999: 39; TUCCI 1988b: 24; KHOSLA 1979: 42.

Fig. 352 Left: Eastern view of the White Temple with the spacious terraces that extend to the surrounding wall of the monastery. Neuwirth 2002.

Fig. 353 Right: South-western view of the White Temple. Outside of the temple area, west of the enclosure wall, the temple reaches a height of 5.27 metres from the ground level to the attic due to the differences in the terrain between the inner and outer areas of the monastery. Neuwirth 2002.

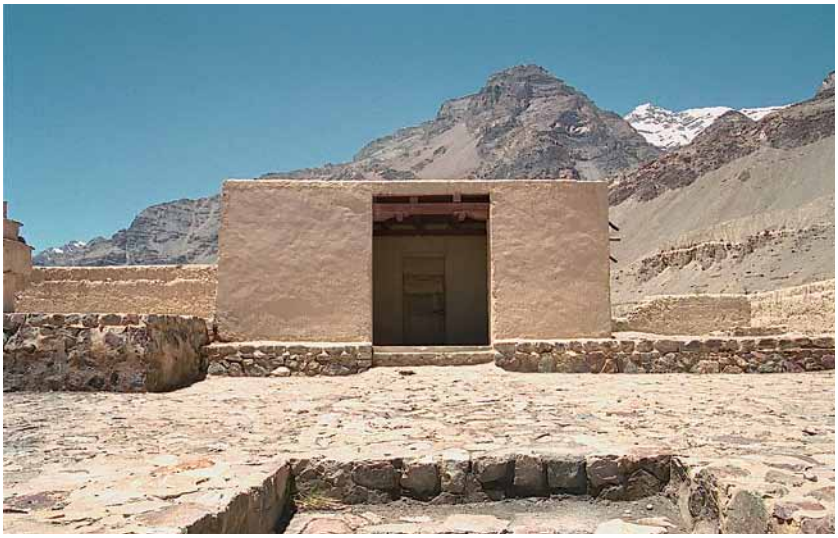


Fig. 354 Eastern view of the White Temple with the vestibule, which was not set up until the renovation. The surrounding walls of the monastery are directly connected to the side walls of the main room. Neuwirth 2002.

Fig. 355 View from the northwest. The main room of the temple is located outside the monastery area on a massive pedestal which compensates for the differences in level. Neuwirth 2002.

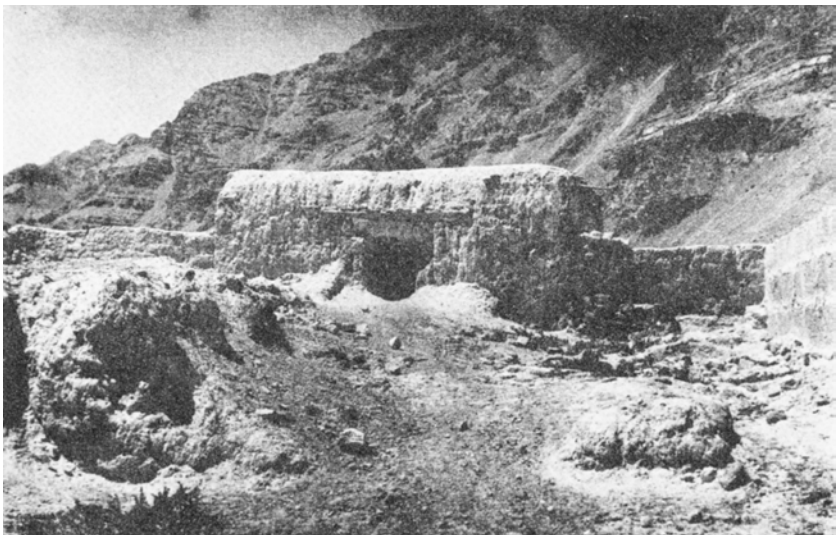
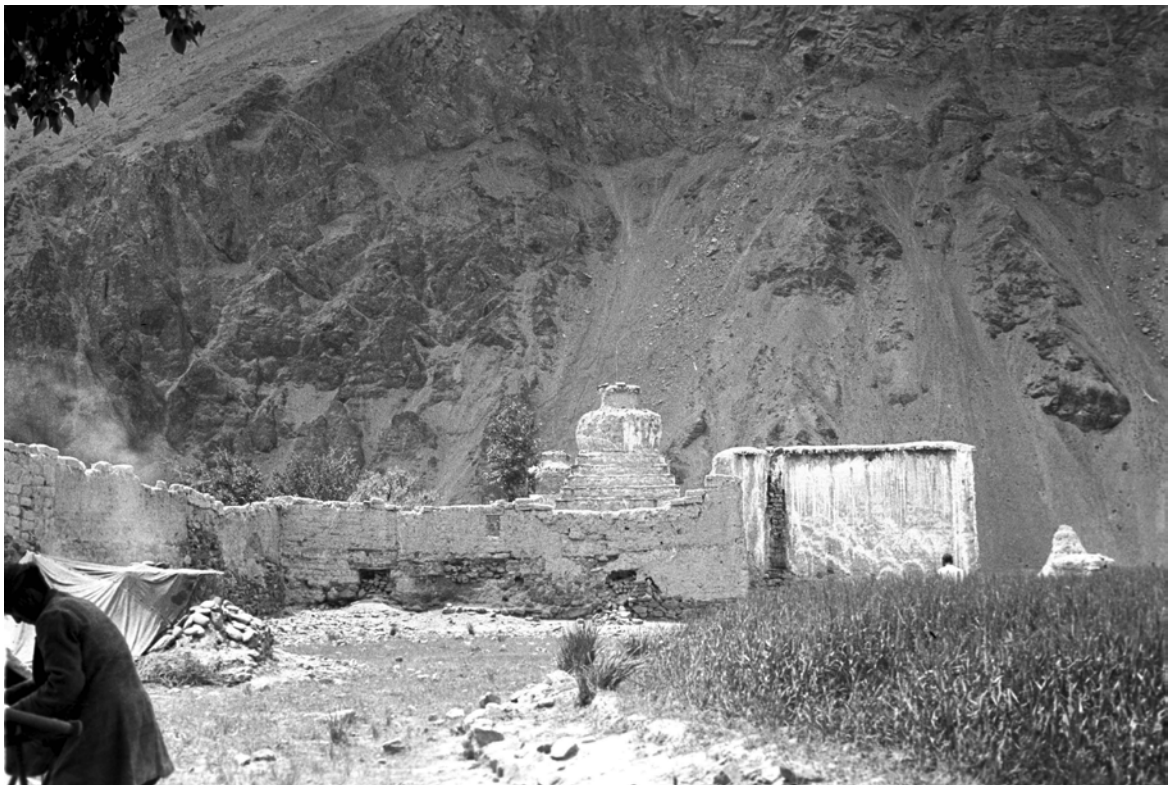


Fig. 356 Eastern view of the White Temple without vestibule before the renovation. Khosla 1979: Illustration 47.

Fig. 357 Northern view of the White Temple, parts of which protrudes from the surrounding walls of the monastery area. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.



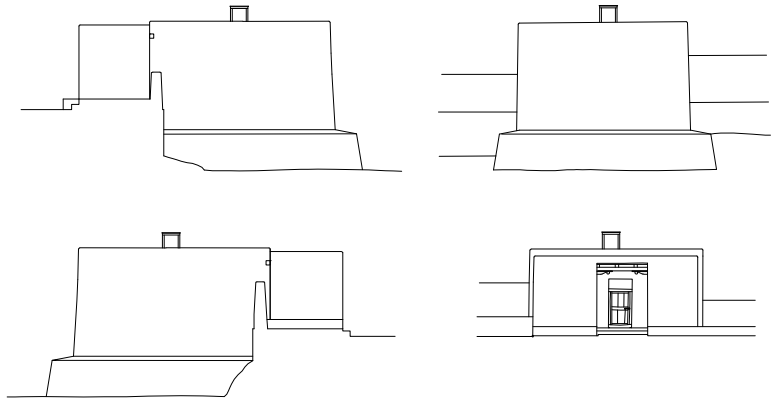


Fig. 358 Elevations of the White Temple. Above: the north and the west elevation. Below: the south and the east elevation. The terrain level along the monastery wall is striking, creating strong differences in the height of the façade. © Neuwirth & Auer, TU Graz 2020.

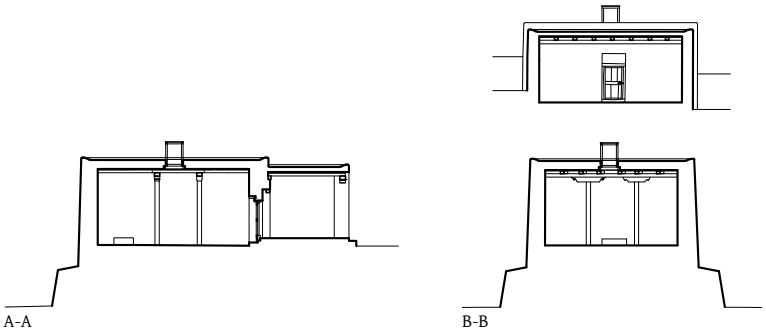


Fig. 359 The longitudinal section with the view to the north, next to it the cross-sections through the vestibule and through the main room with the view toward the west. Here, you can see the massive size of the pedestal, which is created by the terrain step. © Neuwirth & Auer, TU Graz 2020.

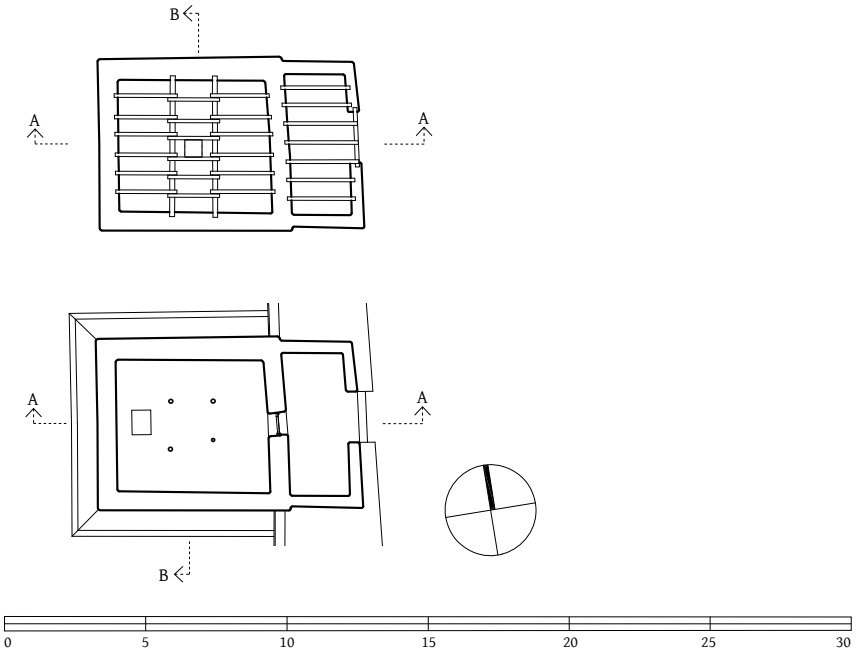


Fig. 360 The floor plan and the ceiling plan of the White Temple with the four supports and the main beams of the ceiling construction. © Neuwirth & Auer, TU Graz 2020.

The vestibule is 5.10 metres wide and 2.12 metres deep, with a room height of 2.30 metres. One enters the somewhat low-lying, trapezoidal interior of the White Temple via two further steps from the vestibule, accessing the space through the central 0.80-metre-wide and 1.33-metre-high entrance door.

The temple interior is 4.70 metres wide, the north wall is 5.26 metres deep and the south wall is 5.40 metres deep, whereby the east wall deviates slightly from the orthogonal angle. The room height is 2.68 metres from floor level to the poles of the ceiling. Four irregularly set, simple wooden pillars with red lacquered console capitals support the two transverse, red lacquered main beams, which also support the red secondary beams. The free spans vary between 1.30 metres and 1.90 metres. The wooden construction is relatively simple compared to the other interiors and has no decorations. Instead of a board or post layer, the uppermost layer of the ceiling consists of a simple pole layer. In the middle of the ceiling, there is a square opening with a side length of 0.60 metre, the glazed lantern above provides interior lighting. All four walls of the White Temple are decorated with murals. Major damage can be seen on the left side of the east wall and on the right side of the north wall.[83]

The wall thicknesses of the main room vary between 0.63 metre on the south wall and 0.83 metre on the north wall. The walls of the vestibule, which was erected in the course of a restoration performed after the 1980s, are only 0.40 metre thick.

83 THAKUR 2001: 207-209.

Fig. 361 Left: The east wall in the temple interior with the entrance door and the ceiling construction with the red painted main and secondary beams as well as the untreated pole layer above. Neuwirth 2002.

Fig. 362 Right: Lateral area of the wall painting of the east wall in the White Temple. Neuwirth 2002.

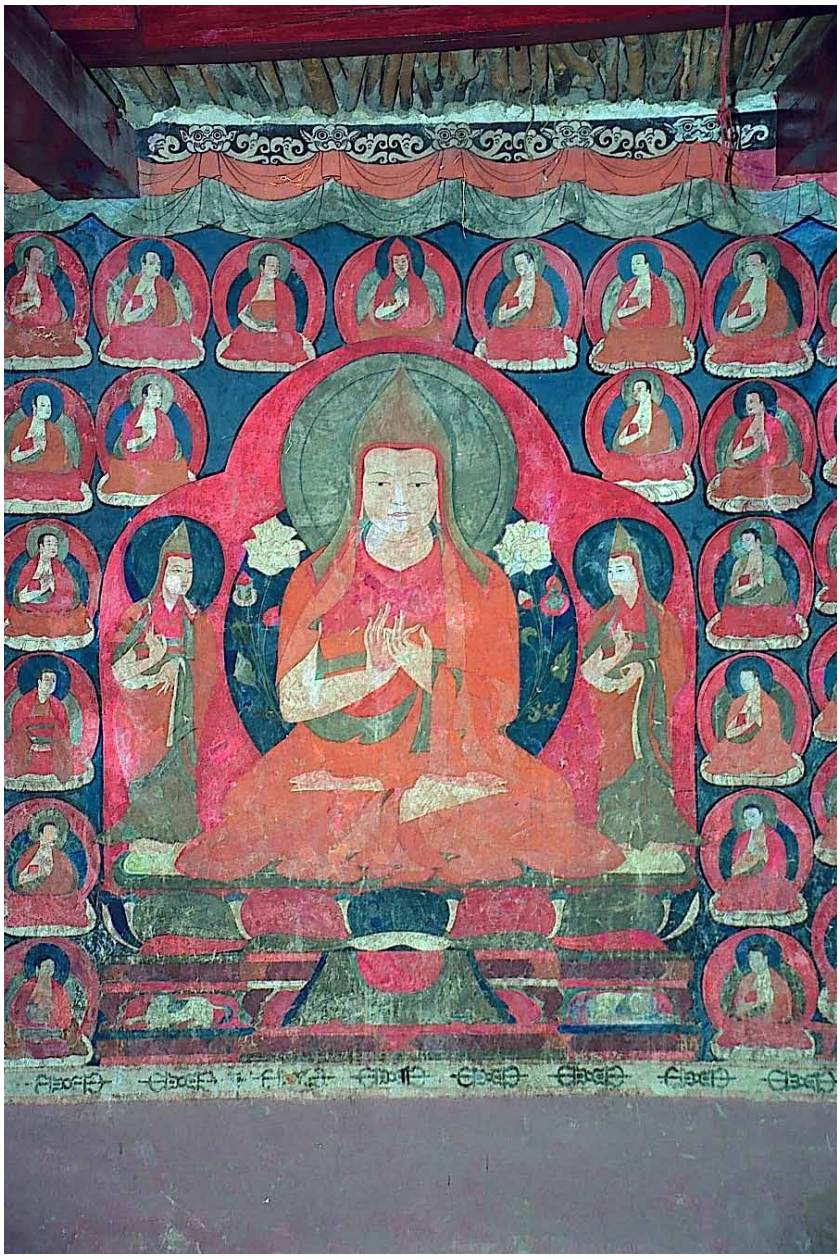
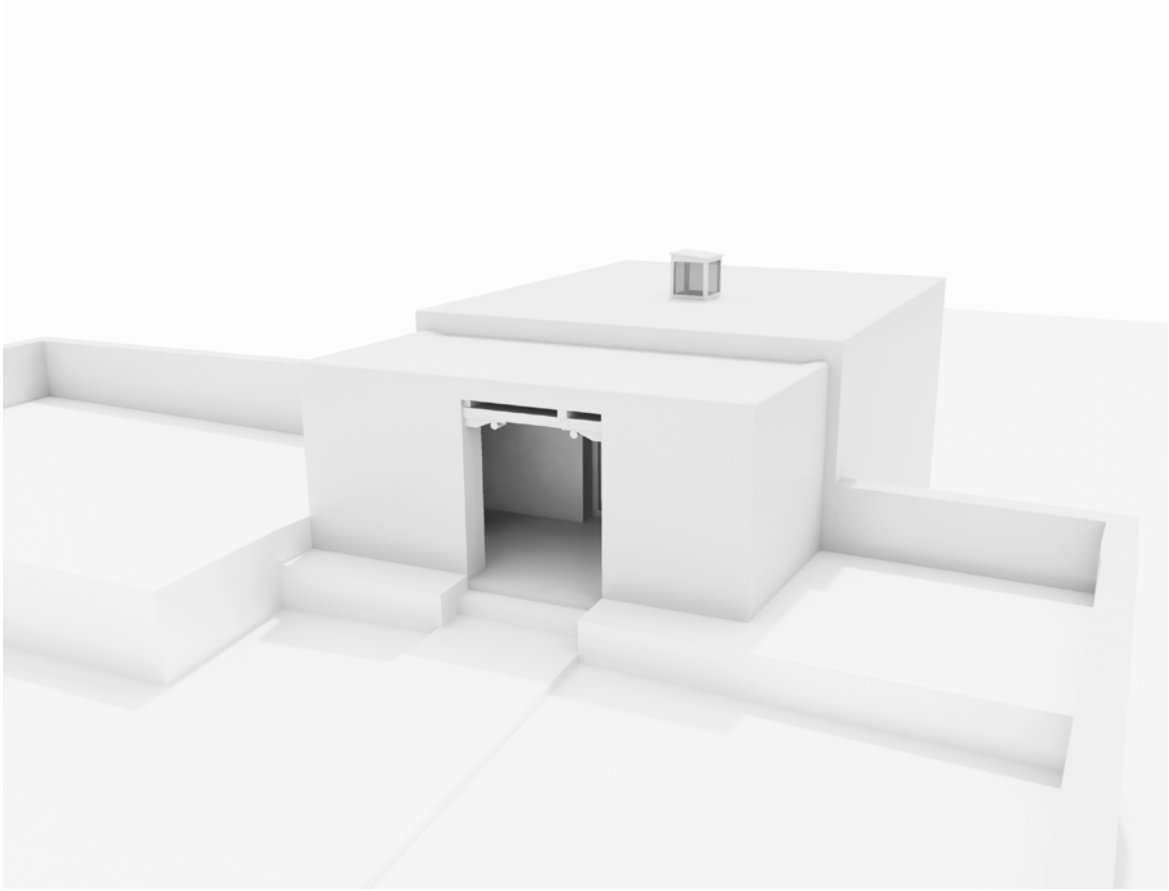


Fig. 363 The middle field of the mural painting on the south wall of the White Temple. Neuwirth 2002.

Fig. 364 Detail of the wall painting on the north wall with clear traces of water damage. Neuwirth 2002.

Fig. 365 The ceiling construction is supported by four simple wooden pillars. The capitals, main beams and secondary beams of the ceiling are painted red. In the background, the wall painting on the west wall is shown with the altar standing in front of it. Neuwirth 2002.

Fig. 366 Spatial representation of the White Temple. Bird´s eye view from the northeast. The representation omits the stone pedestals at the ground zone which were erected during the restoration, in order to clarify the original appearance. © Neuwirth & Auer, TU Graz 2020.



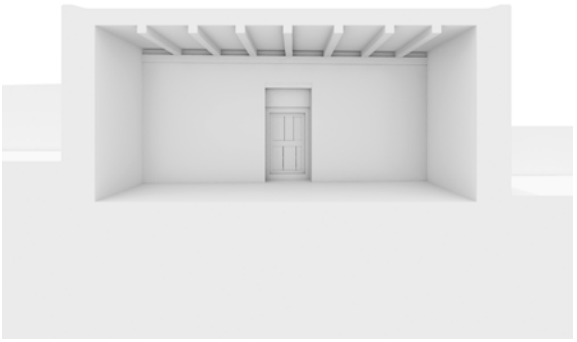


Fig. 367 Cross-section through the vestibule with the entrance door leading into the temple interior © Neuwirth & Auer, TU Graz 2020.

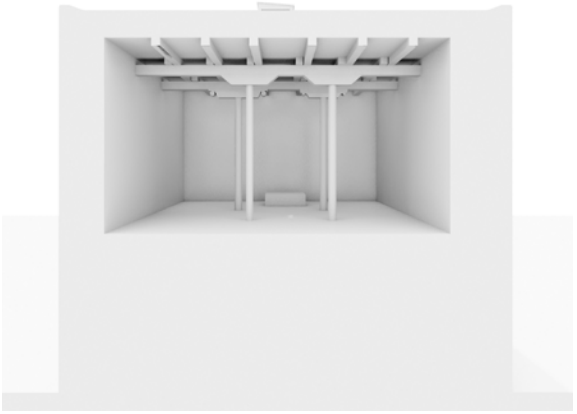


Fig. 368 Cross-section of the interior with a view toward the west. © Neuwirth & Auer, TU Graz 2020.

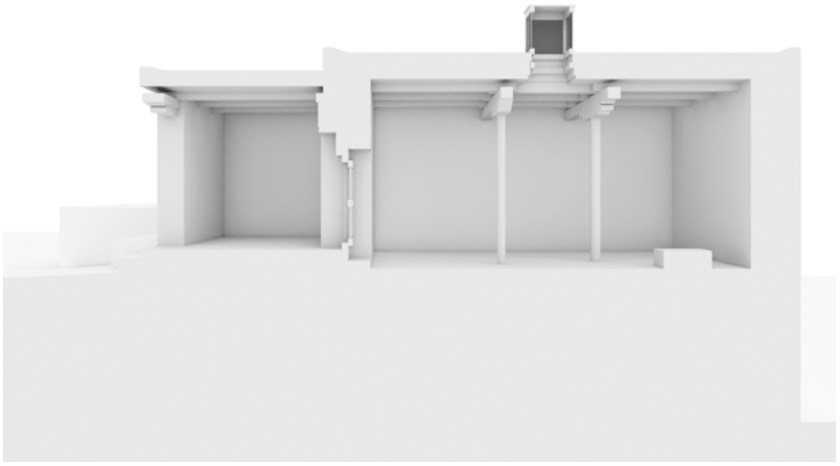
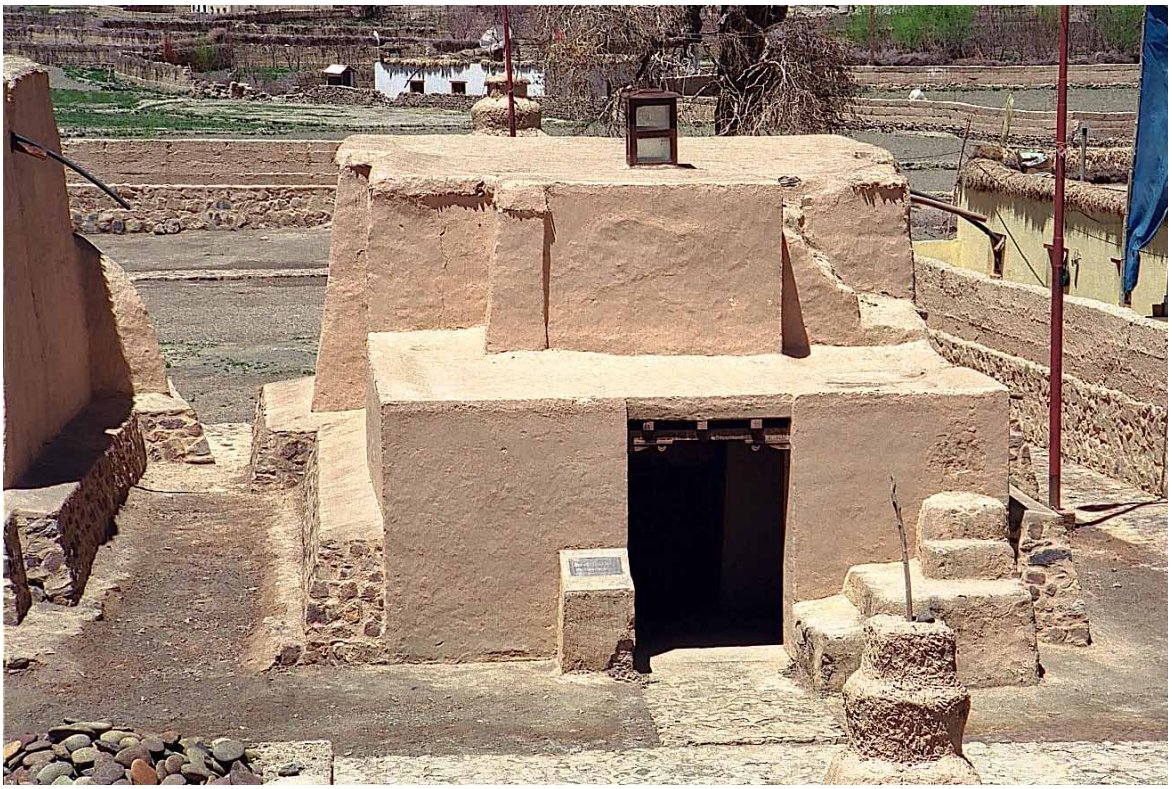


Fig. 369 Longitudinal section through the vestibule and the main room with a view toward the south. © Neuwirth & Auer, TU Graz 2020.

Fig. 370 Eastern view of the Small ʼBrom-ston Temple with the vestibule in front and the step pedestal on the north side of the entrance, which gives access to the roof. Neuwirth 2002.



The Small ´Brom-ston Temple (Tib. *'Brom ston lha khang chung)* is the northernmost temple of the monastery complex and stands close to the enclosure wall. Only a narrow (i.e. 3.00 metres wide) passage between the north wall and the Small ´Brom-ston Temple leads to the northeast area of the monastery complex, where numerous chörten are located.

The vestibule of the Small ´Brom-ston Temple opens to the east, and the main axis deviates 6° clockwise from due east. The architectural form of the vestibule, which is as wide as the main hall and proportional very deep, is quite unusual. The width of the vestibule, like that of the temple hall, is 6.90 metres. The depth is 5.27 metres in the vestibule and another 6.94 metres in the main hall. The external height, as measured from the floor level of the entrance area, is 2.88 metres for the vestibule and 5.00 metres for the main hall.

The conical reinforcement of the walls on the west façade, which covers parts of the walls to the north and south, is conspicuous. This reinforcement is comparable with the west wall construction at the Main Temple and at the Mandala Temple. In addition, a conical base of exposed stone walls (1.20-1.50 metres high and between 0.60 and 1.00 metre wide) was installed to reinforce the outer walls along the north, west and south façades during the last restoration. A massive stepped pedestal on the right side of the east façade leads to the roof of the vestibule, where another massive staircase leads to the main roof. The entrance opening of the vestibule is 1.80 metres wide and 2.38 metres high and leads into a room which is 5.70 metres wide, 2.14 metres deep and 2.52 metres high.

Fig. 371 Left: Western view of the temple with the surrounding base zone and the conical facade. Neuwirth 2002.

Fig. 372 Right: North-eastern view with the Maitreya Temple in the background. On the right side, one can see the course of the north monastery wall. Neuwirth 2002.

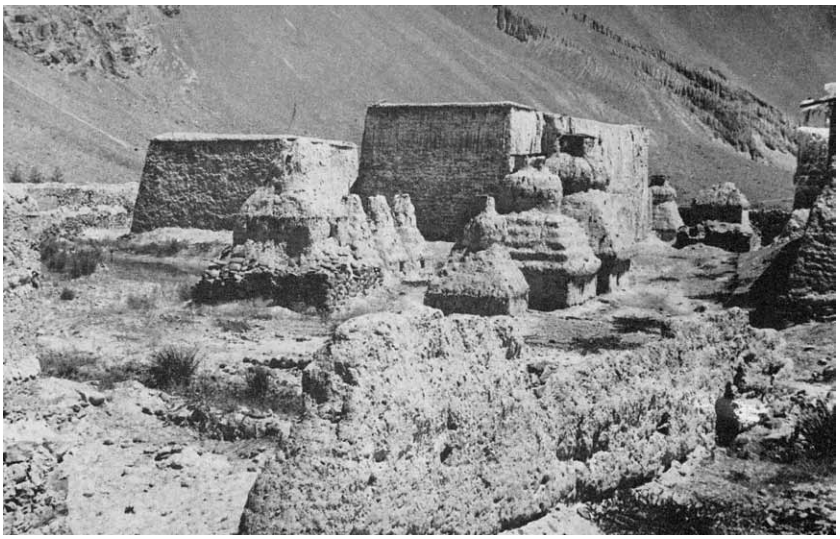


Fig. 373 South-western view of the Small ´Brom-ston Temple and the Maitreya Temple in the north of the Main Temple Complex. Khosla 1979: Illustration 42.

Fig. 374 Western view of the Small ´Brom-ston Temple before its restoration. Khosla 1979: Illustration 45.

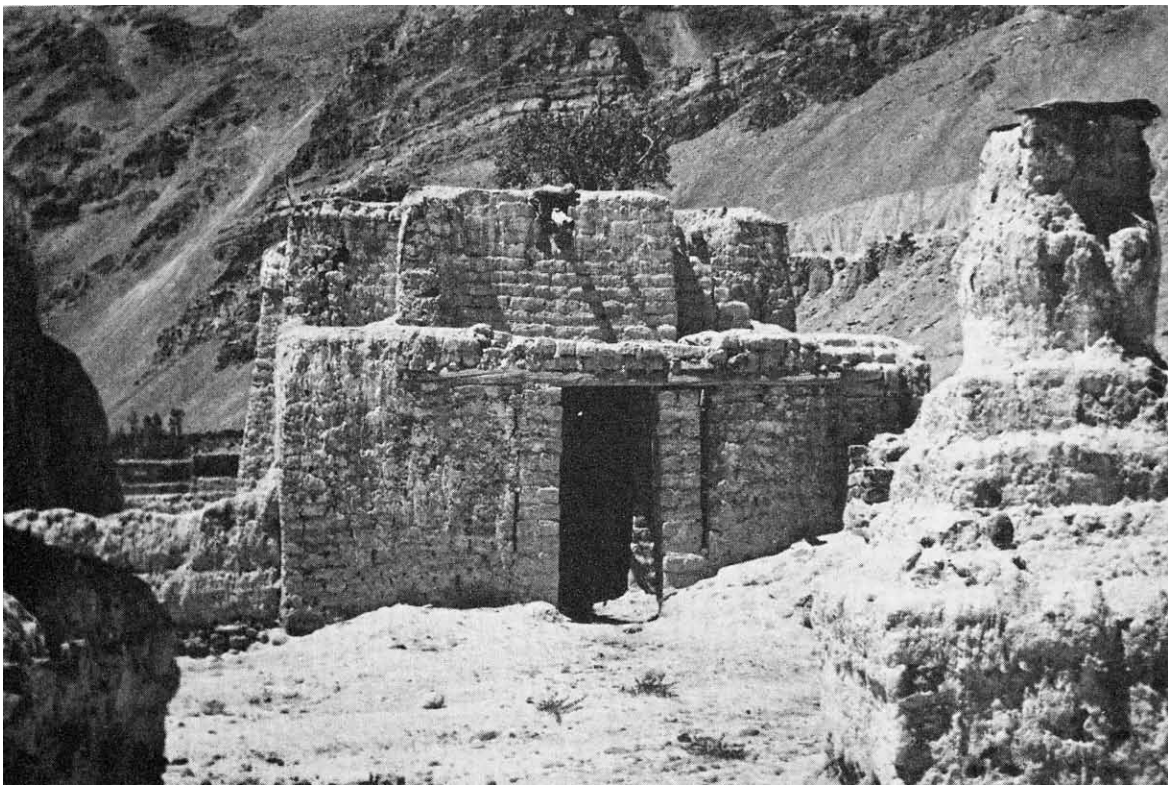
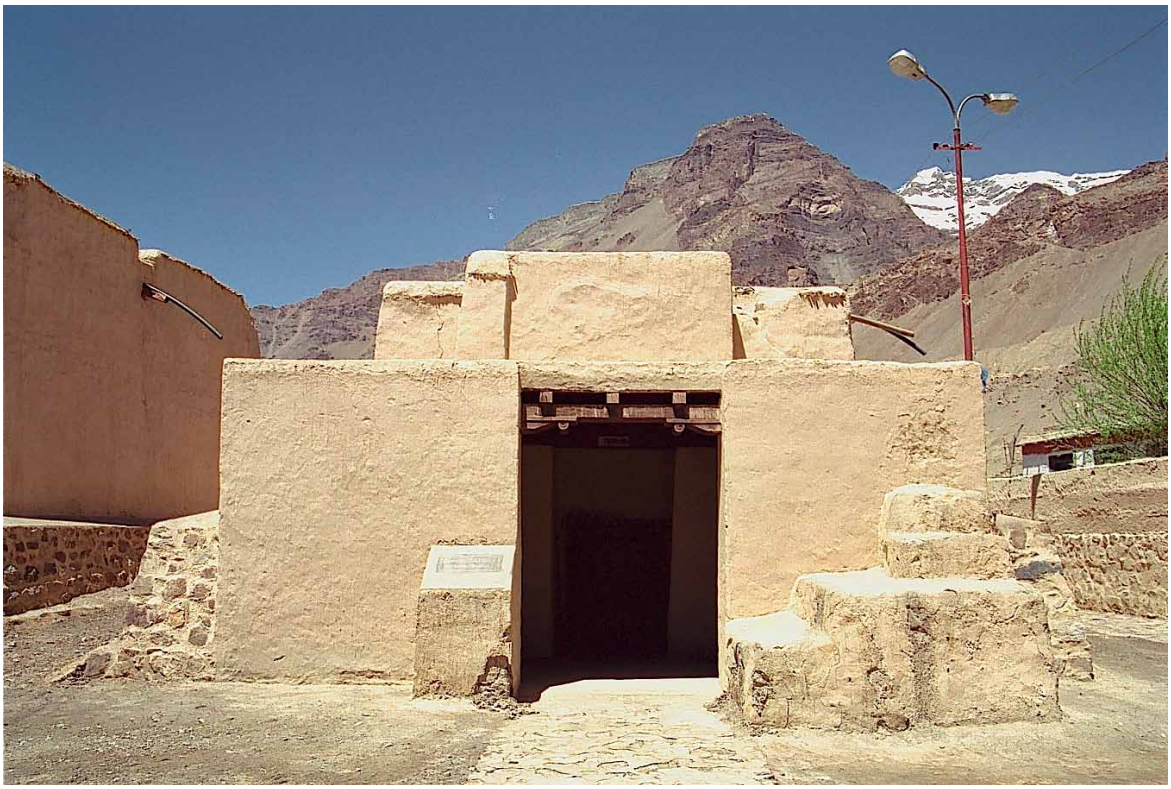
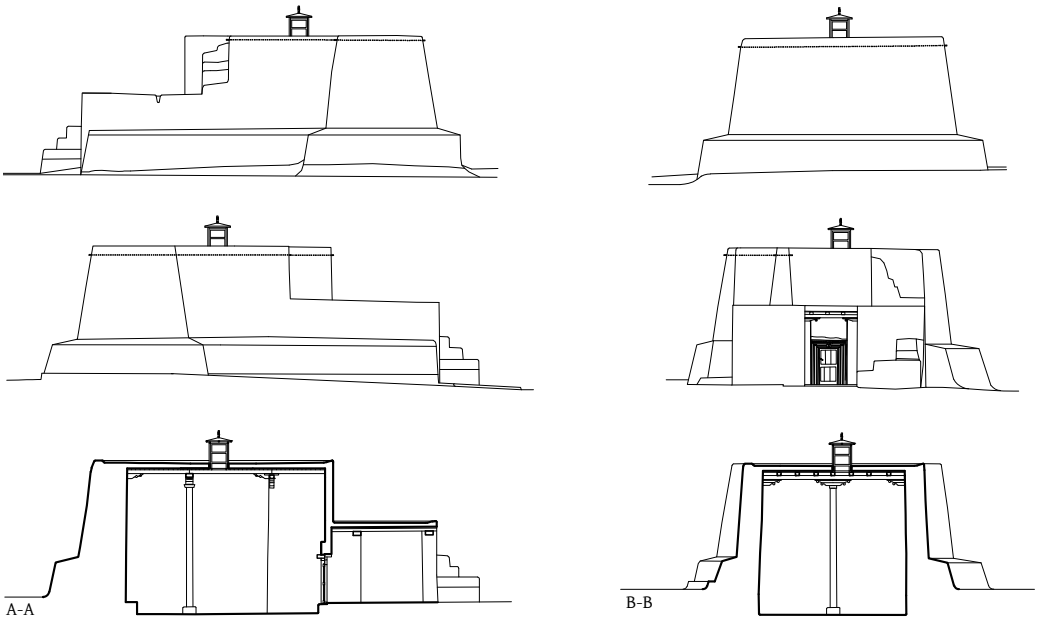


Fig. 375 Entrance door to the temple interior with wooden carvings on the lintel and frames. Neuwirth 2002.

Fig. 376 Eastern view of the Small ´Brom-ston Temple after its restoration. Neuwirth 2002.

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Inside the vestibule, a side niche is found along the north wall, which was formed by the gradual extension of the vestibule. One reaches the entrance door, whose wooden frame and lintel show carvings, by passing through a 1.25-metre-wide and 1.53-metre-deep corridor, accessed from the centre of the west wall. Behind the entrance door, the room-high corridor continues for 1.75 metres, increasing in width to 1.40 metres upon entering the main room. The interior of the temple is between 5.10 and 5.23 metres wide and 4.93 metres deep, and the room height is 5.10 metres, as is the height of the corridor area on the east side. The proportions of the rooms thus correspond approximately to a cube. All wall surfaces are painted, whereby the condition of the painting on the east side is rather poor.[84]

Only one pillar supports the primary transverse beam of the ceiling construction with a free span of 2.50 metres. A sculptured stone base with an elephant relief supports the pillar; this, however, is shifted by 0.20 metre lengthwise away from the centre of the room. Since the supports of the wall consoles of the new main beam were repositioned during the restoration, the pillar may originally have been located in the centre of the room. The cross-beams bridge a free span between 2.12 metres (toward the west wall) and 2.60 metres (toward the east wall). In the east half of the painted wooden ceiling, there is an opening with a side length of 0.60 metre and a lantern above it which provides interior lighting.

The wall thicknesses of the conically formed wall areas in the west and up to half of the north and south walls are 1.65 metres in the base zone and 1.30 metres at the point of the roof connection. This conicity and the increase in wall thickness, which is also seen in a similar form in the Main Temple and the Mandala Temple, can be assigned to the foundation phase as a technical measure of masonry formation. The non-reinforced walls of the north and south walls are about 0.90 metre thick, and the wall thickness of the east wall is 1.00 metre on average. The walls of the vestibule, on the other hand, are only about 0.50 metre thick, which indicates that they were erected in a later construction phase.

84 THAKUR 2001: 203-205.

Fig. 377 Overleaf: Plan documentation of the Small ´Brom-ston Temple. Above: the north and west elevation. in the second line: the south and east elevation. Middle: The longitudinal section and the cross-section show the spatial configuration of the interiors and the different levels and room heights. Below: The floor plan and the ceiling plan show the unusual shape of the vestibule and the reinforced walls between the vestibule and hall, as well as those on the west side of the hall. © Neuwirth & Auer, TU Graz 2020.

Fig. 378 Left: Renewed console of the central pillar in the temple interior, which supports the main beam. Neuwirth 2002.

Fig. 379 Right: Carved and painted wall console under the main beam. Neuwirth 2002.

Fig. 380 Above: the ceiling construction with wall consoles above the corridor of the entrance area. Neuwirth 2002.

Fig. 381 Below: the narrow corridor between the entrance door and the hall. The lateral walls show the remains of the murals. Neuwirth 2002.

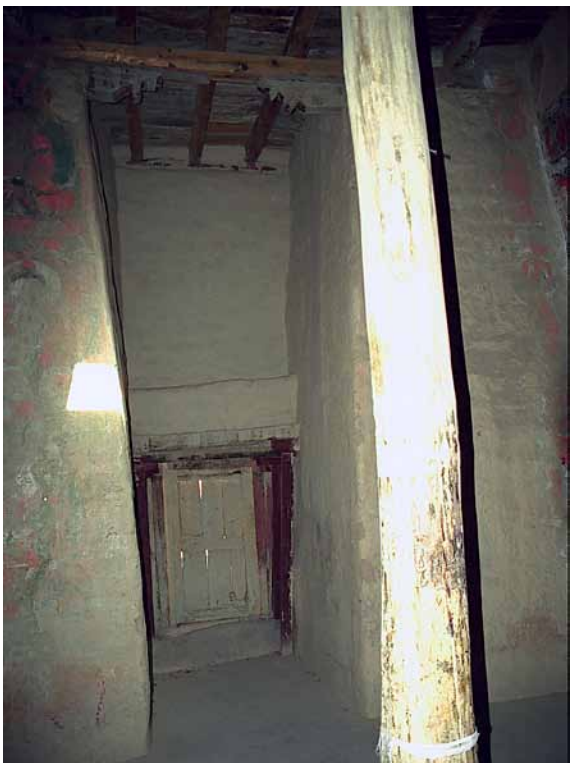


Fig. 382 The ceiling above the south wall of the Small ´Brom-ston Temple. The renewed areas are clearly visible on the wooden beams. Neuwirth 2002.

Fig. 383 The painted ceiling above the northwest corner of the Small ´Brom-ston Temple. Neuwirth 2002.

Fig. 384 Detail of the painted wooden ceiling in the Small ´Brom-ston Temple. Neuwirth 2002.

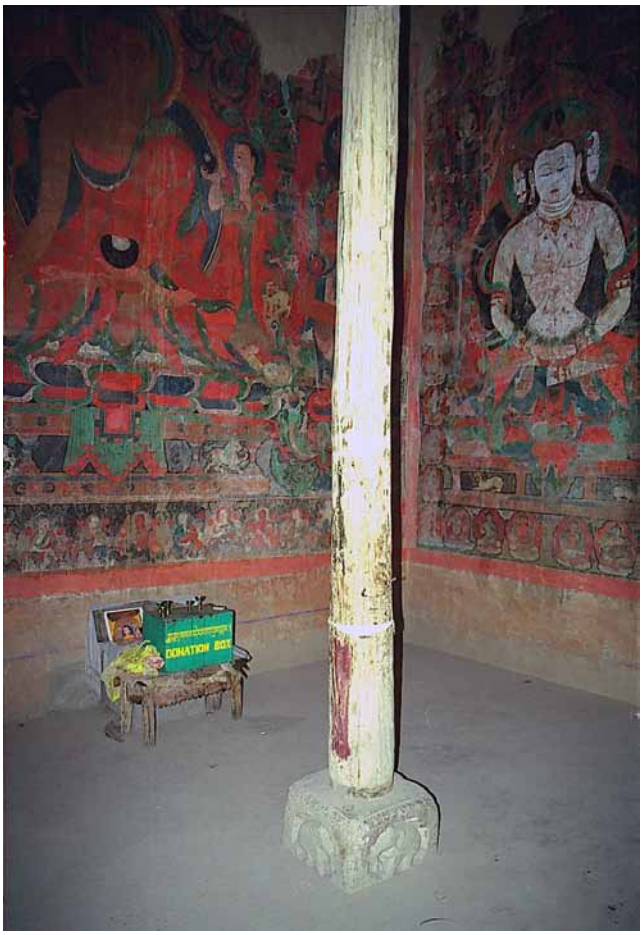


Fig. 385 The pillar in the centre of the room with its stone base, which has reliefs on all four sides. Neuwirth 2002.

Fig. 386 The stone reliefs on the base show an elephant on each side. Neuwirth 2002.

Fig. 387 Right part of the wall painting on the south wall. Neuwirth 2002.

Fig. 388 Detail of the wall painting on the south wall. Neuwirth 2002.

Fig. 389 Detail of the wall painting on the north wall, showing a four-headed Vairocana. Neuwirth 2002.

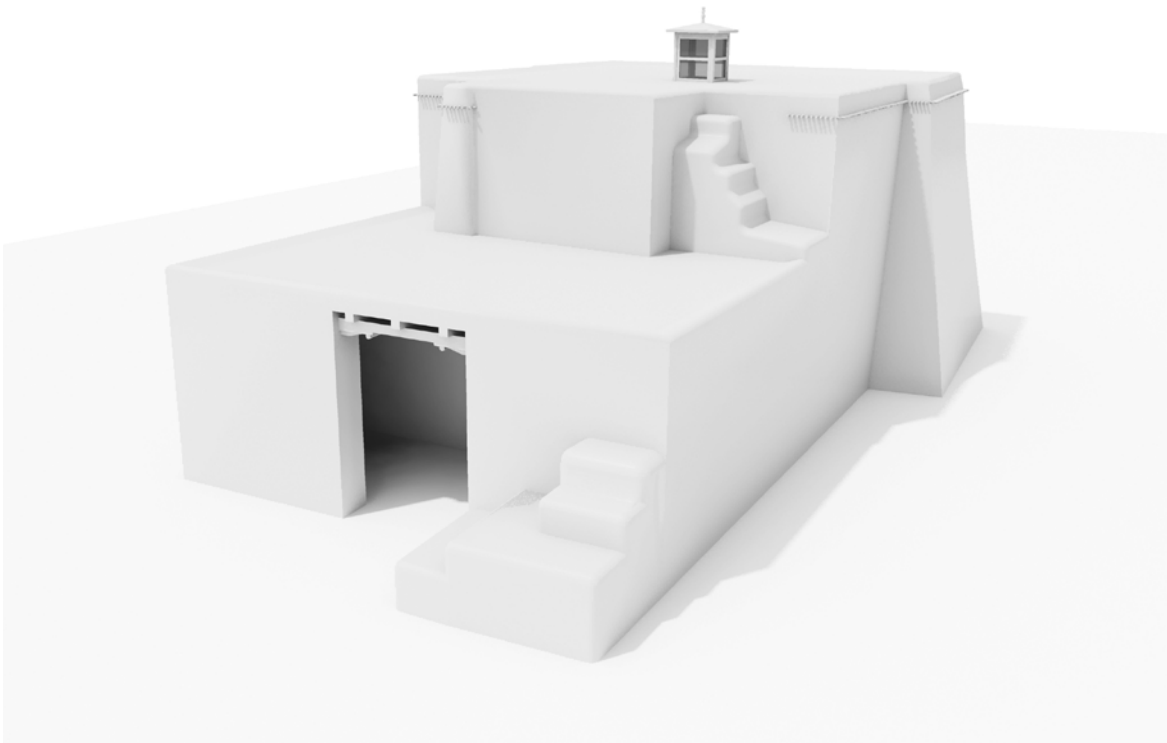
Fig. 390 Scaled photomontage of the murals in the Small 'Bromston Temple: The east wall. © Neuwirth & Auer, TU Graz 2020.

Fig. 391 Scaled photomontage of the murals in the Small ʼBrom-ston Temple: The south wall. © Neuwirth & Auer, TU Graz 2020.

Fig. 392 Scaled photomontage of the murals in the Small ´Bromston Temple: The west wall. © Neuwirth & Auer, TU Graz 2020.

Fig. 393 Scaled photomontage of the murals in the Small ʼBrom-ston Temple: The north wall. © Neuwirth & Auer, TU Graz 2020.

Fig. 394 Spatial representation of the Small ´Brom-ston Temple. Bird´s eye view from northeast. In the representation, the stone pedestals in the base zone, erected in the course of the last restoration, were omitted in order to clarify the outer appearance. © Neuwirth & Auer, TU Graz 2020.



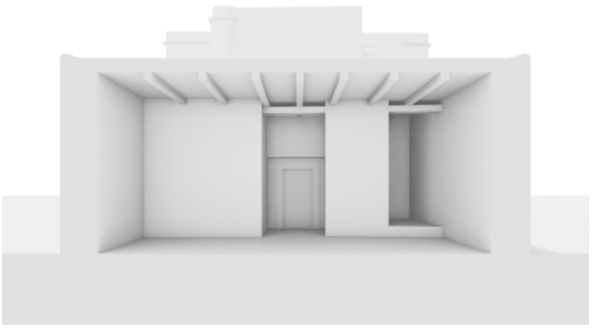


Fig. 395 Cross-section through the vestibule of the Small ´Brom-ston Temple with the entrance to the temple interior. © Neuwirth & Auer, TU Graz 2020.

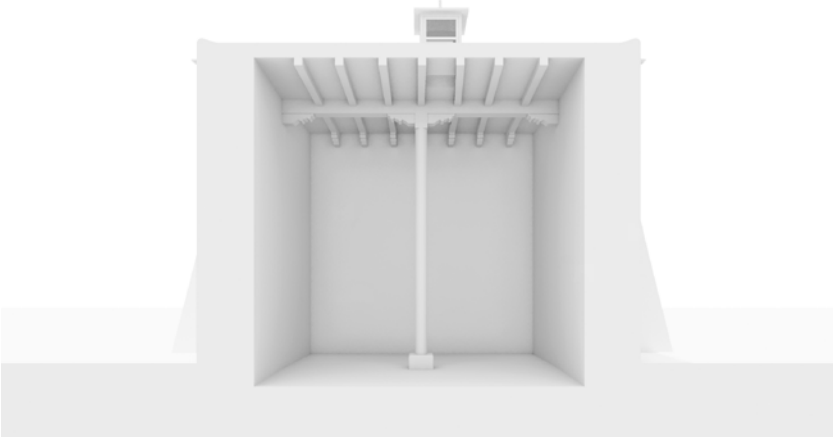


Fig. 396 Cross-section through the main room with the view to the west. © Neuwirth & Auer, TU Graz 2020.

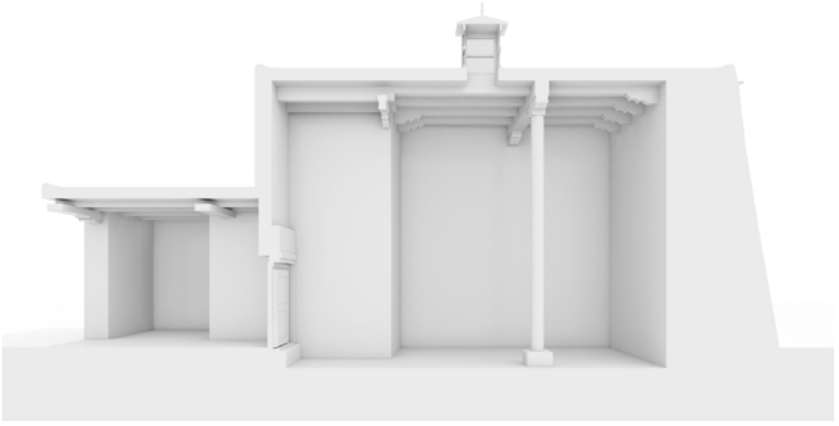


Fig. 397 Longitudinal section through the vestibule and the interior with the view to the south. © Neuwirth & Auer, TU Graz 2020.

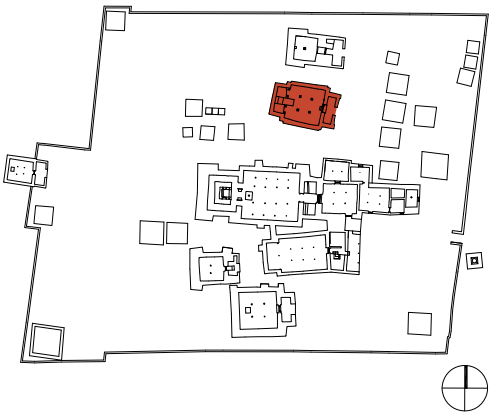


Fig. 398 The east façade of the Maitreya Temple, with the relatively low vestibule in front of the main room, which is equipped with an apse in the west. The secondary beam layer is visible on the upper part of the east façade. The steps to the right of the entrance allow access to the roofs. Neuwirth 2002.

The Maitreya Temple (Tib. *Byams pa'i lha khang)* is located between the Small ´Brom-ston Temple and the Main Temple. It is also oriented from east to west by its vestibule, entrance and longitudinal axis, but it deviates by 11° clockwise from due east.

The spatial structure of the vestibule, main room and apse is clearly visible from the outside of the building. The dimensions of the temple are 10 metres in width and 12 metres in length, with an approximate total height of 6.20 metres, which also includes the apse. Outside, the four corners of the main room are vertically accentuated by a doubled corner construction. This unconventional, formal construction cannot be found for any other temple in Tabo. At the northwest corner of the main hall, a massive, rounded supporting pillar reaches up to half of the height of the wall.

With a width of 7.60 metres and a depth of 2.60 metres, the vestibule is smaller and, with an external height of 2.70 metres, it is not even half as high as the main room. A monumental step pedestal on the east wall of the vestibule, located to the right of the entrance, leads to the roof above. On the left side of the adjacent east wall, an opening in the attic allows a ladder to securely reach the main roof.

The levelling natural stone wall of the base zone, which extends from a height of 1.00 to 1.50 metres and a depth up to 0.70 metre around the outer walls of the temple, dates back to the last restoration of the temple. The entrance opening to the east is 2.00 metres wide and leads via one step into the vestibule.

Fig. 399 Left: South-western view of the Maitreya Temple, with the striking, doubled corners on the outside of the main room. The stone pedestals along the outer façade were added during the restoration. Neuwirth 2002.

Fig. 400 Right: Western view of the Maitreya Temple. On the north façade, the transition from the main room to the somewhat narrower apse was additionally reinforced by a supporting pillar. Neuwirth 2002.

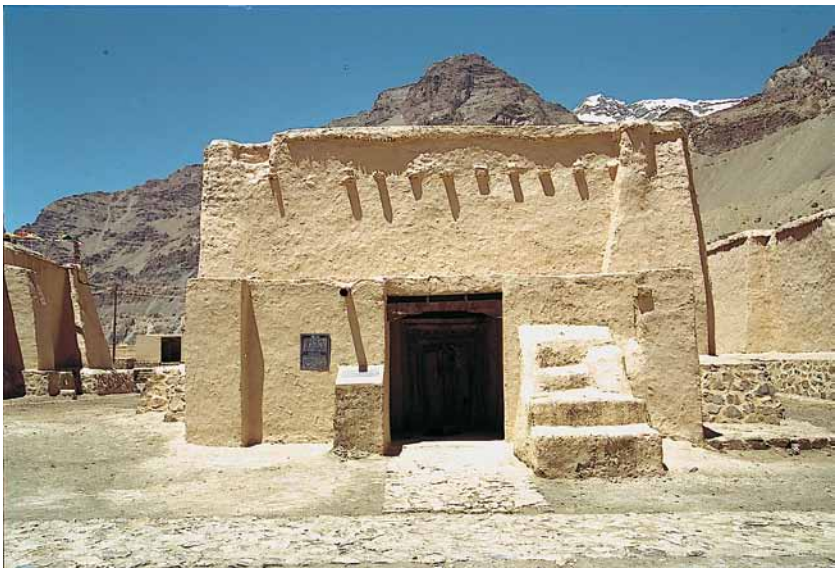


Fig. 401 Eastern view of the temple front façade with the open vestibule after the restoration work was completed and additions were made in the base zone. Neuwirth 2002.

Fig. 402 The eastern view of the Maitreya Temple before the restoration. Khosla 1979: Illustration 44.

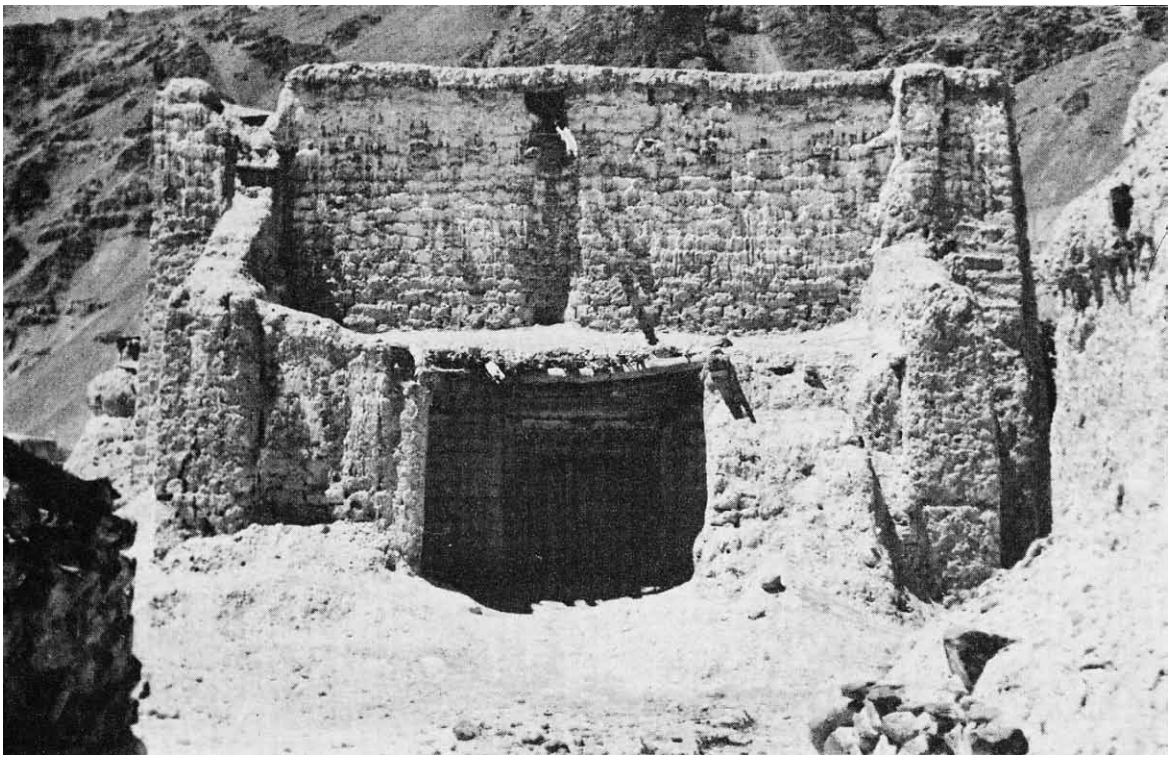
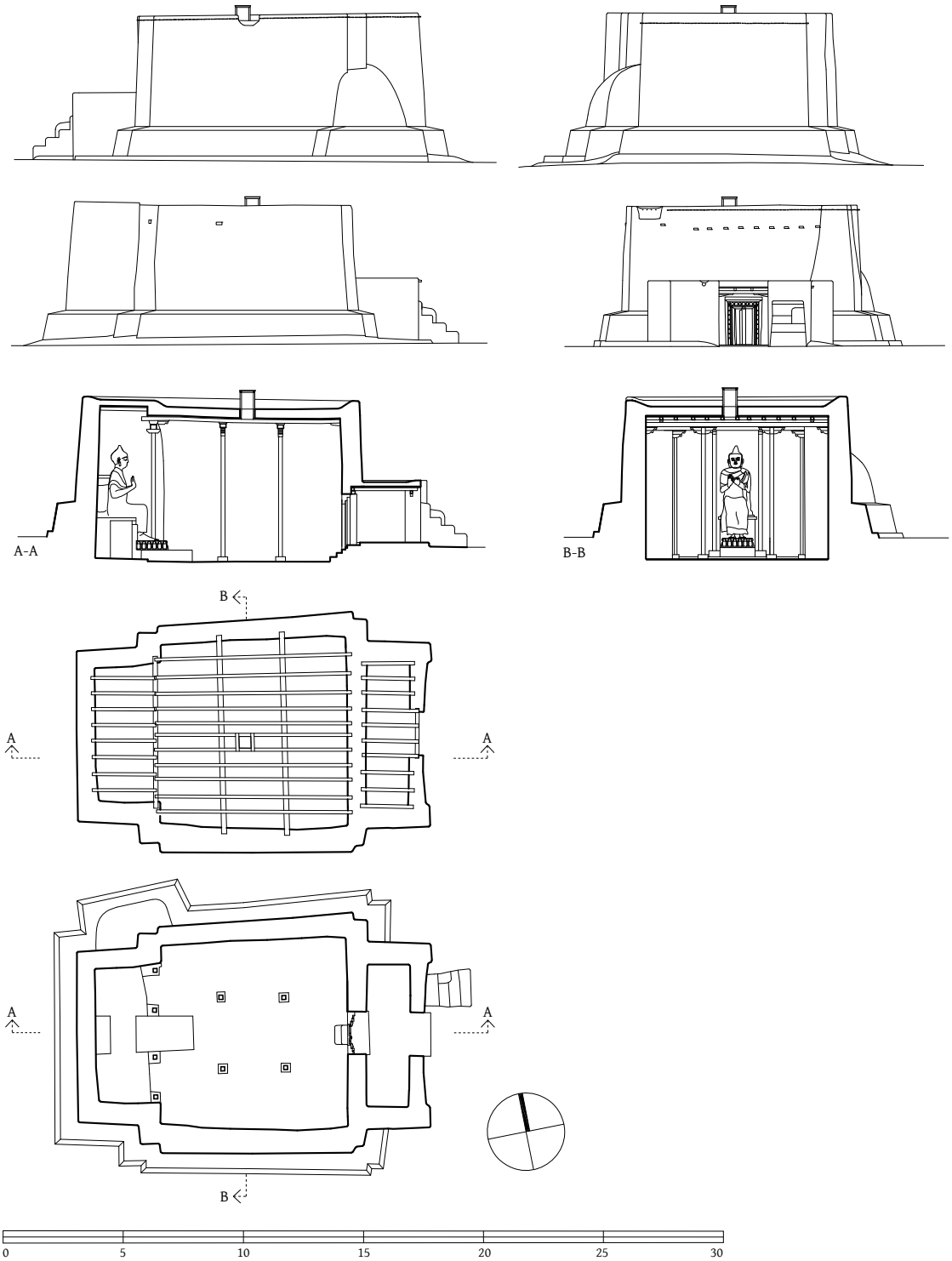


Fig. 403 The vestibule of the Maitreya Temple with the renewed ceiling construction and the entrance door to the temple interior. Neuwirth 2002.

Fig. 404 The entrance door is richly decorated with carvings on the lintel and the door frames; for example, a central Ganesha representation is shown in the middle of the innermost frame and a Buddha representation is shown above. Neuwirth 2002.


A-A
B-B
B
A
A
A
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The inside of the vestibule is 5.90 metres wide and 1.80 metres deep, and the room height up to the ceiling construction measures 2.16 metres. The door to enter the interior, which is placed in the central axis of the temple, is richly decorated on its outside with carvings that still show fragments of the former painting. These carvings suggest that the temple was built at an early date, although the door may originally have been located elsewhere. Directly behind this double-wing door, four steps lead into the square main hall of the Maitreya Temple, which lies 0.80 metre lower than the vestibule.

The temple interior is 7.80 metres wide and, up to the apse, 7.80 metres deep, while the height of the main room measures 5.90 metres. On the west side, the apse, which lies one step higher, opens up to a width of 5.60 metres and a depth of 2.60 metres. The ceiling construction is also slightly higher in this area with a room height of 6.30 metres.

Four pillars are arranged in the square main hall. These support the two main transverse beams of the ceiling construction. The pillars and main beams divide the hall into three naves and three bays. The free span of the main beams arranged north to south is 2.90 metres in the central nave and 2.50 metres in the side naves. The spans of the secondary beams are about 2.60 metres. Four more pillars in the opening to the apse divide the width into three parts: a central section with a 1.95-metre span and two side sections with 1.65-metre spans. All eight pillars have sculptured stone bases with representations of lions.

The wooden console capitals of the support construction have largely lost their former paint. Some remains of the colour scheme have survived on the wall consoles and on the painted ceiling, showing geometric and floral patterns. In the middle of the apse a 4.36-metre-high sculpture of Maitreya is placed, depicted in a seated position with his feet reaching into the main room. It is possible to walk around in the apse via a passage through the wooden construction under the sitting sculpture.

The wall thicknesses vary from 0.80 to 1.00 metre. The south wall of the main room shows large deformations with different versions of later paintings on the repaired wall areas. Likewise, different fractures in the plaster surface and repainted layers are visible on the right side of the west wall in the apse and on the right side of the east wall in the main hall. The condition of the mural painting and the formerly painted wooden ceiling indicate a history of structural damage in the temple, whereby water penetrated and destroyed parts of the interior decoration.[85]

Fig. 405 Overleaf: Plan documentation of the Maitreya Temple. Above: the elevation from north and west, showing the massive supporting pillar between main room and apse. In the second line: the south and the east elevation with the low vestibule. Middle: The longitudinal section through the vestibule, the main room and the apse with the passage under the sculpture of Maitreya. Next to it, the cross-section through the main room is shown with the view toward the apse. Below: the ground plan and the ceiling plan show the orientation and the spatial arrangement, as well as the graded corners of the main room on the outside. © Neuwirth & Auer, TU Graz 2020.

85 THAKUR 2001: 209-211.

Fig. 406 Stone base with the lion representation on the south side of the Maitreya sculpture. Neuwirth 2002.

Fig. 407 Left: Three steps lead from the entrance door in the east wall toward the lower level of the main hall. Neuwirth 2002.

Fig. 408 Right: On the south wall, different states of preservation of the mural painting can be seen, which indicate the destruction and repainting of the wall. Neuwirth 2002.

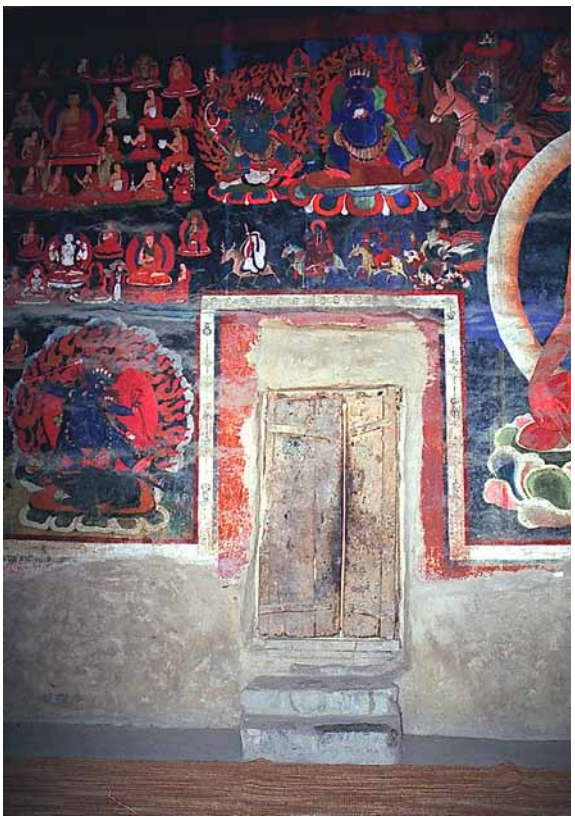


Fig. 409 Stone base with the lion representation on the north side of the Maitreya sculpture. Neuwirth 2002.

Fig. 410 Left. In the middle of the apse, two pillars with carved stone bases flank the sculpture of the seated Maitreya. Neuwirth 2002.

Fig. 411 Right: A wooden construction under the sculpture allows the passage within and circumambulation around the interior. Neuwirth 2002.

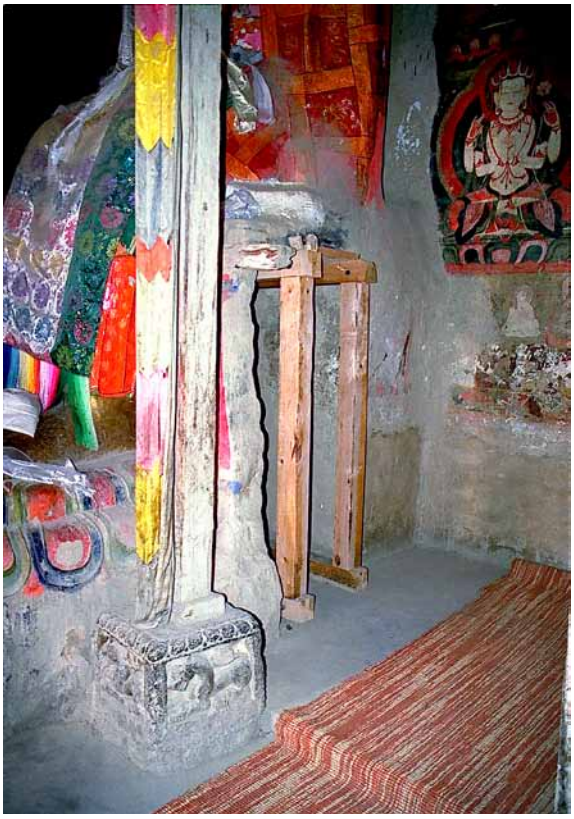


Fig. 412 Change in the ceiling construction from the south part of the west wall to the apse. In the foreground, one recognizes the fracture in the plaster surface of the south wall, the detachment of this surface extends over large parts of the south wall. This surface was later repainted. Neuwirth 2002.

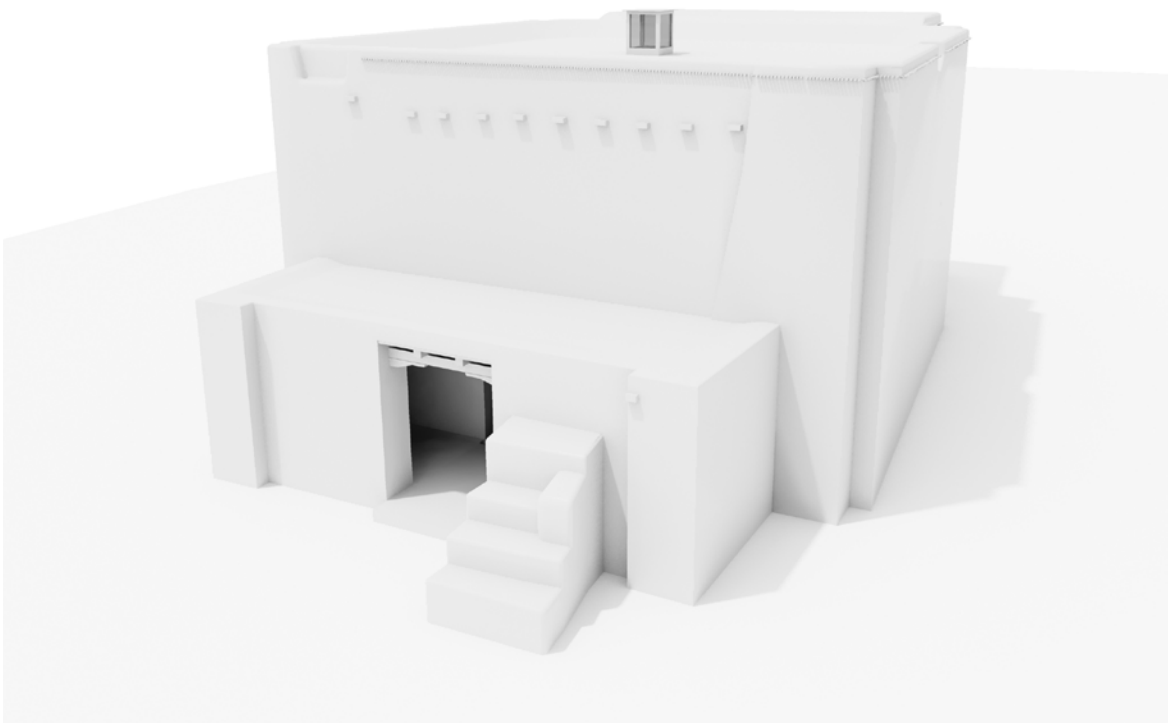
Fig. 413 View of the two main beams with the lateral wall consoles on the south wall. The second fracture in the plastered surface extends almost to the east corner; the repainting of the wall between both breaks is clearly distinguishable from the original wall painting by the colours and techniques used. The wall consoles of the main beams were reinforced by additional pillars. Neuwirth 2002.

Fig. 414 Wall console of the main beam on the south wall with a support, which was installed later. Neuwirth 2002.

Fig. 415 Wall console on the north wall, with the remains of the ceiling painting, and the partially renewed sections. Neuwirth 2002.

Fig. 416 Console capital under the main beam, with remains of the former colourful painting. Neuwirth 2002.

Fig. 417 Spatial representation of the Maitreya Temple. Due to the raised attic, the elevation of the cella is not visible from the outside. The attic is interrupted at the southeast corner. The beam position of the ceiling construction penetrates the east façade and is visible from the outside. © Neuwirth & Auer, TU Graz 2020.



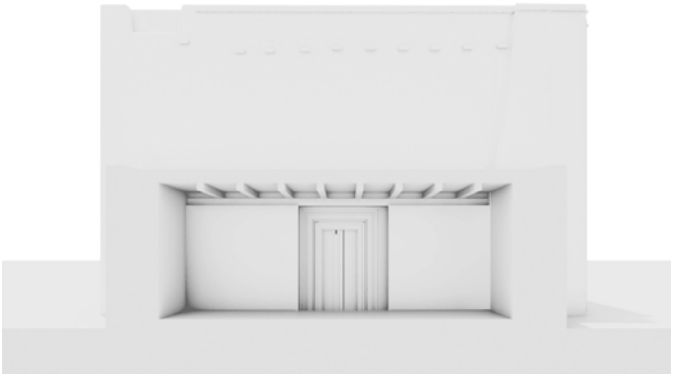


Fig. 418 Cross-section through the vestibule with a view to the west, towards the entrance door to the temple. © Neuwirth & Auer, TU Graz 2020.

Fig. 419 Cross-section through the main hall with the view to the west, towards the apse with the sculpture pedestal. © Neuwirth & Auer, TU Graz 2020.

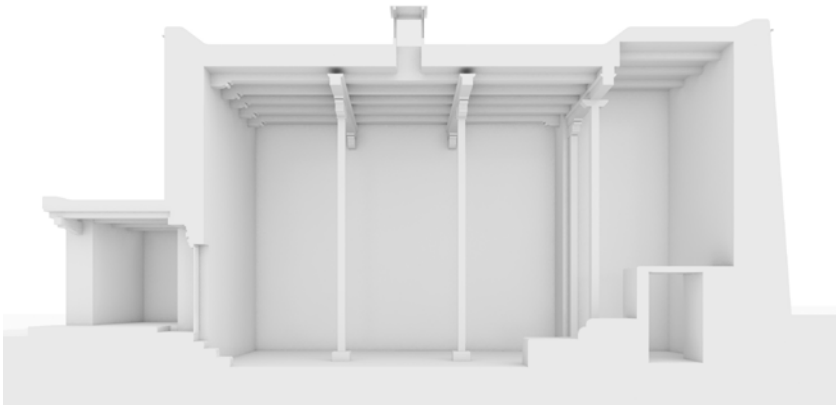


Fig. 420 Longitudinal section with the vestibule, the lowered floor level of the main room, the raised apse and the pedestal, which allows the passage under the seated sculpture of Maitreya © Neuwirth & Auer, TU Graz 2020.

Fig. 421 Site plan with the numbering of the 23 chörten within the enclosure walls of the monastery. © Neuwirth & Auer, TU Graz 2020.

Within the walls of the monastery, a total of 23 chörten of varying sizes and conditions can be found today. Their side lengths range from 1.50 (No. 9-11) to 7.40 metres, with the heights up to 7.75 metres (No. 2). The largest chörten, visible from afar, are located in the corners and in the middle area in front of the west enclosure wall (No. 2, 3 and 13). Remarkable groups can be found on the southwest and north back sides of the Main Temple, where the cella is located (No. 4-5 and No. 7-13).

The most extensive group of chörten is located in the north-eastern part of the area (No. 14-23), whereby the chörten No. 15-18 and No. 23 consist only of cubic, partly stepped pedestals and no longer carry domes. The typical centre poles, the so-called souls, are also no longer present here. Among the many chörten in the area, some are probably painted inside, and presumably there were also openings which made an entrance possible, as the walled in lintel on the south side of chörten No. 5 suggests.[86]

If one compares the appearances of the chörten today with their appearances in 1933 (see Fig. 226, page 177), one can see that the renovations carried out over the last few years have changed their conditions and, thus, partly their shapes, but obviously no new ones were built within the surrounding wall. Due to the increasing number of buildings in the immediate vicinity of the monastery, the chörten in the surrounding area, which were mainly located on the north and east sides of the monastery, have partly disappeared or been integrated into the village structures.

86 KLIMBURG-SALTER 1997: 68.

Fig. 422 Cleaning work on the north side of chörten No. 4 and No. 5, located southwest of the Main Temple. Auer 2003.

Fig. 423 The chörten within the monastery walls of Tabo: ground plan and elevation of the chörten No. 1-4. © Neuwirth & Auer, TU Graz 2020.

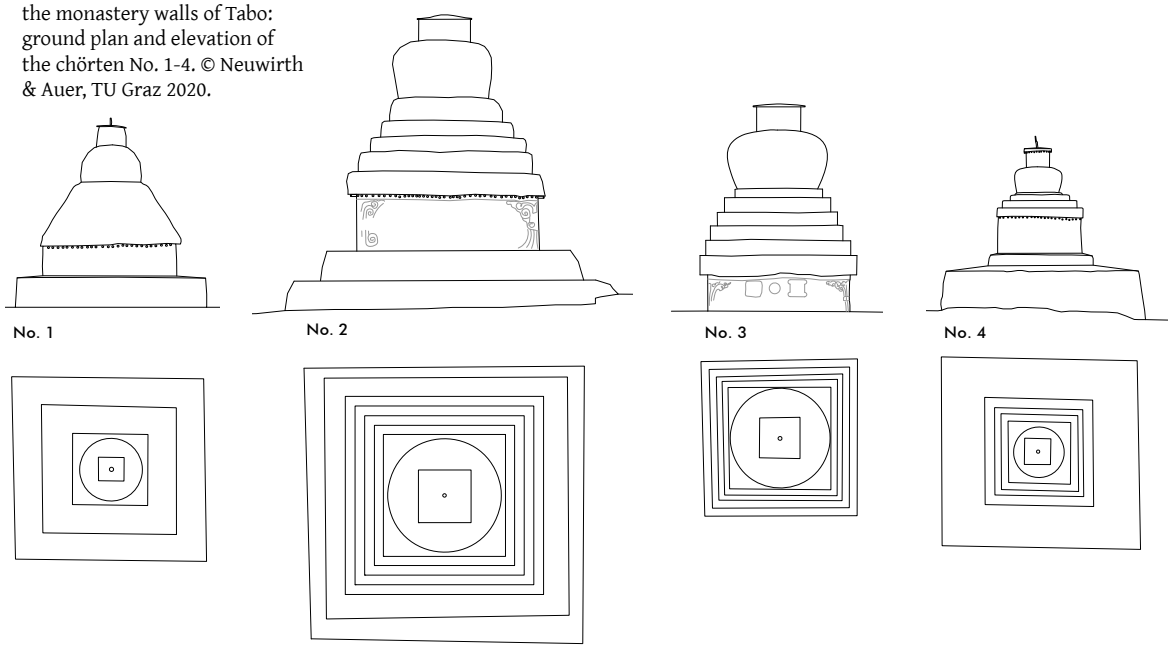


Fig. 424 Ground plan and elevation of the chörten No. 13-18. © Neuwirth & Auer, TU Graz 2020.

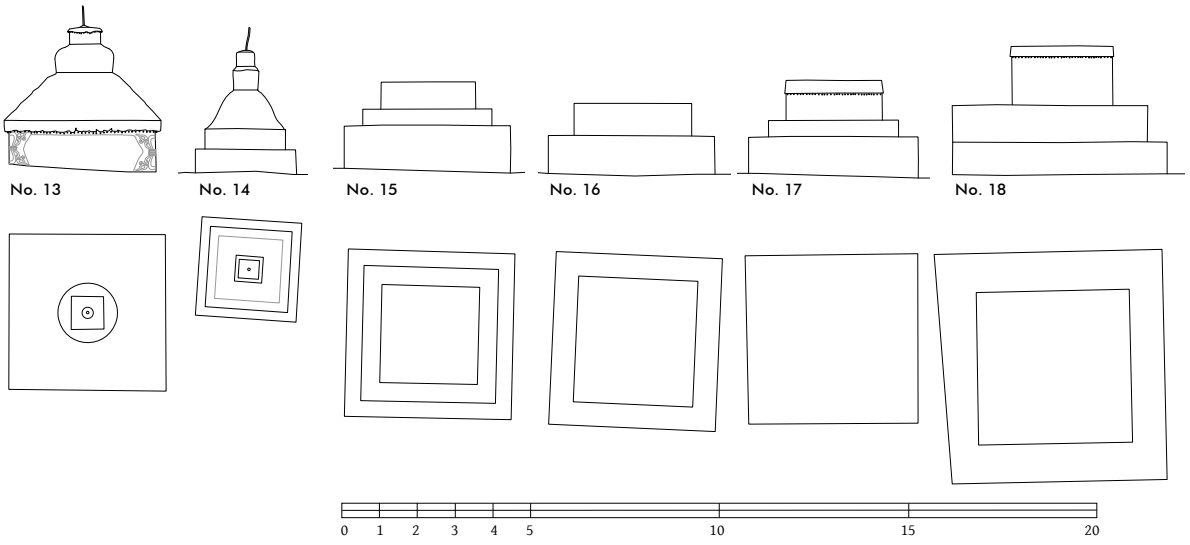


Fig. 425 The chörten within the monastery walls of Tabo: ground plan and elevation of the chörten No. 5-12. © Neuwirth & Auer, TU Graz 2020.

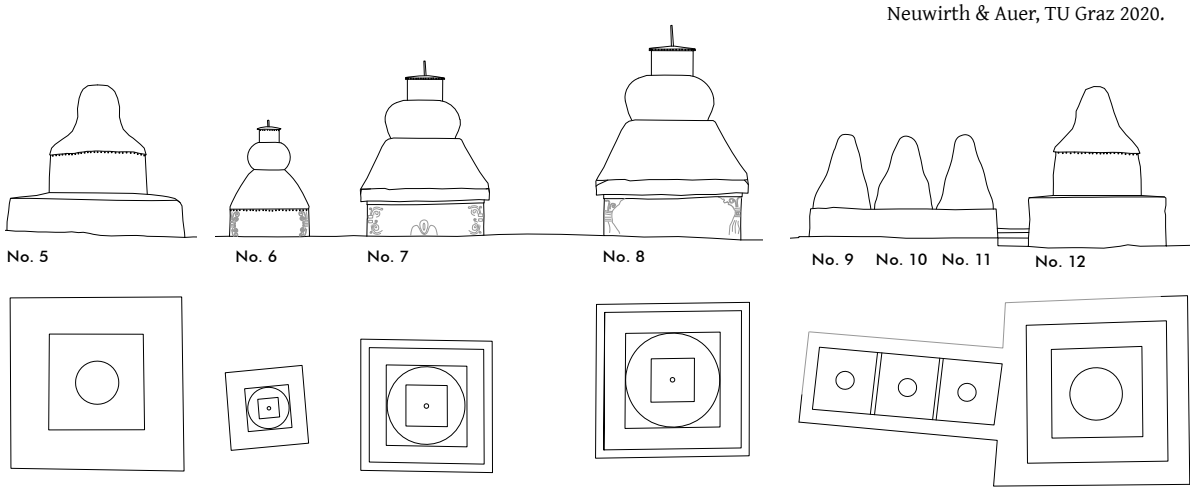
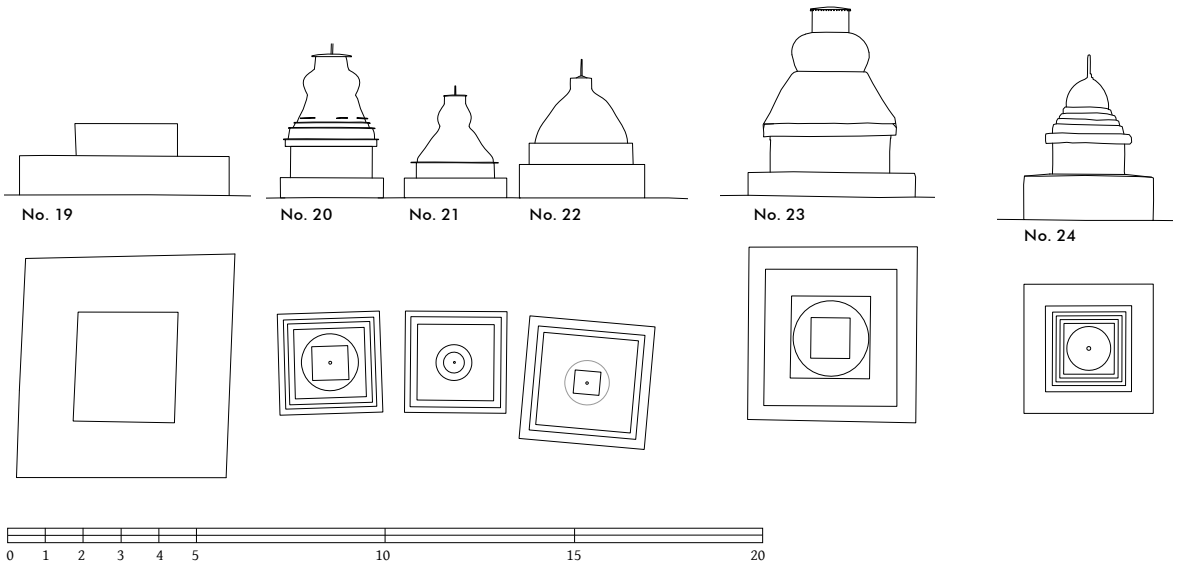


Fig. 426 Gound plan and elevation of the chörten No. 19-24. © Neuwirth & Auer, TU Graz 2020.



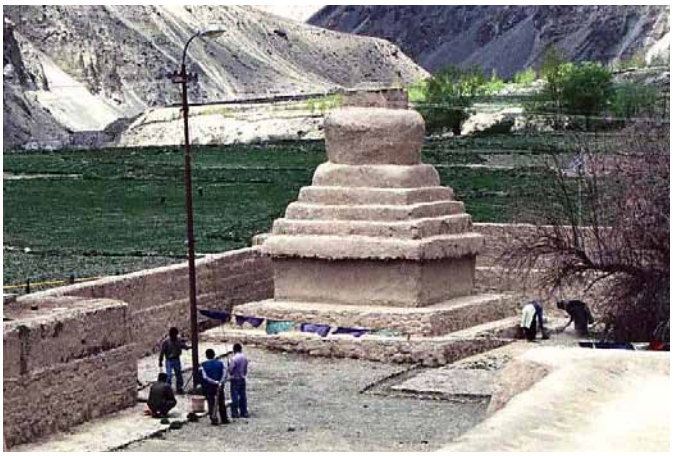


Fig. 427 North-eastern view of chörten No. 2, with a side length of 7.40 metres and a height of 7.75 metres, located in the southwest corner, which is the largest of the chos-`khor. Neuwirth 2003.

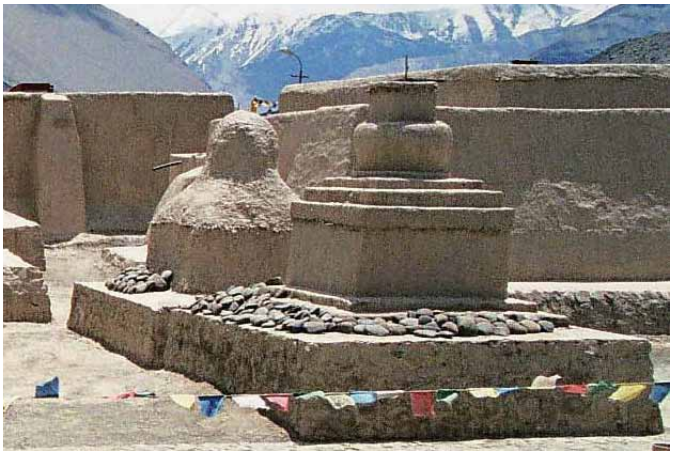


Fig. 428 North-western view of chörten No. 4 and 5, located on the backside of the Mandala Temple. Auer 2003.

Fig. 429 South-eastern view of the chörten No. 6-12 seen from the roof of the Main Temple. In the background, the chörten No. 13 is located in the northwest corner of the area. Auer 2003.

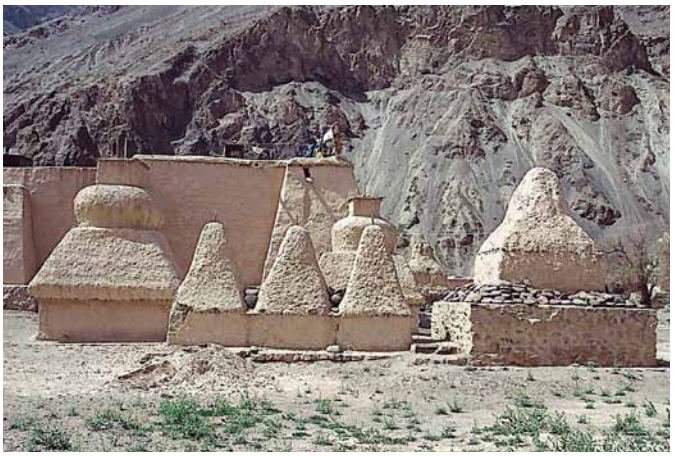


Fig. 430 Northern view of chörten No. 6-12, which were erected near the cella of the Main Temple. Neuwirth 2002.

Fig. 431 North-western view of chörten No. 6, 7 and 8, located on the north side of the Main Temple. Auer 2003.

Fig. 432 The chörten No. 14-22, which are located in the northeast area of the monastery. Auer 2003.

Fig. 433 South-eastern view of the chörten No. 18, which is located on the north side of the eastern extension of the Main Temple, next to the Protector Chapel. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 434 The chörten on the north side of the chos-´khor, outside the monastery wall. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

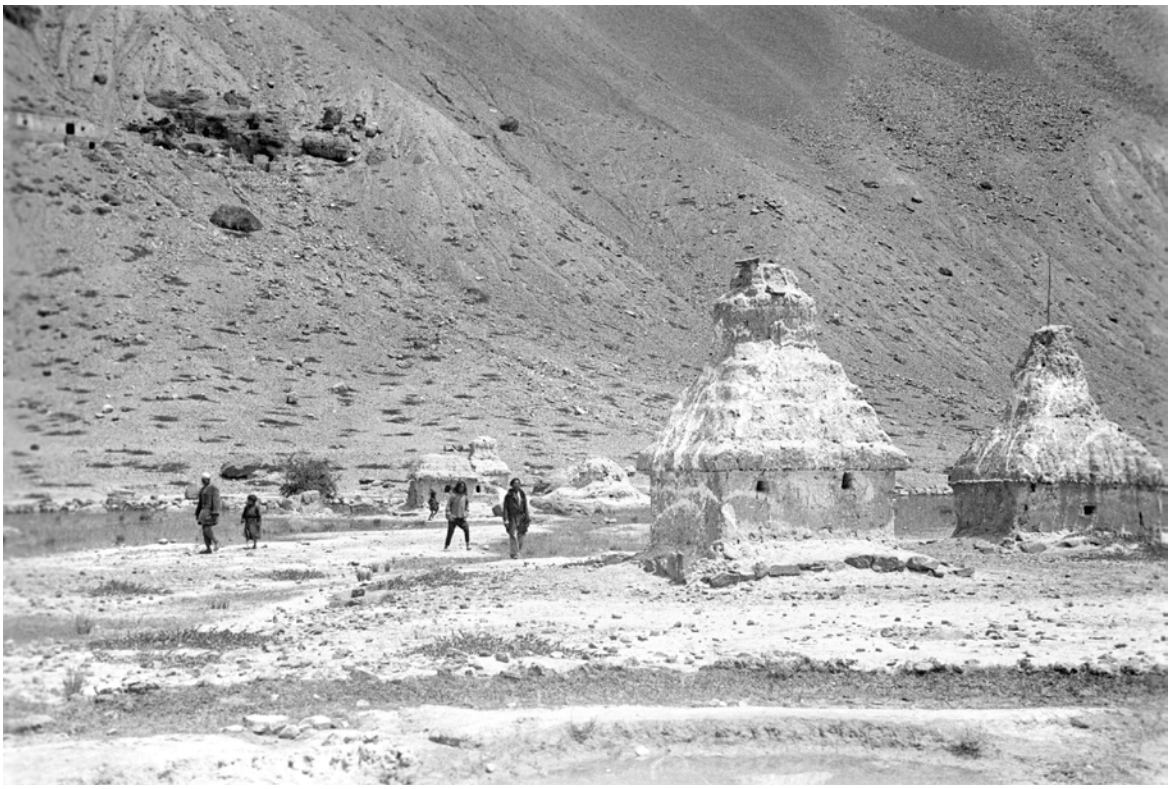
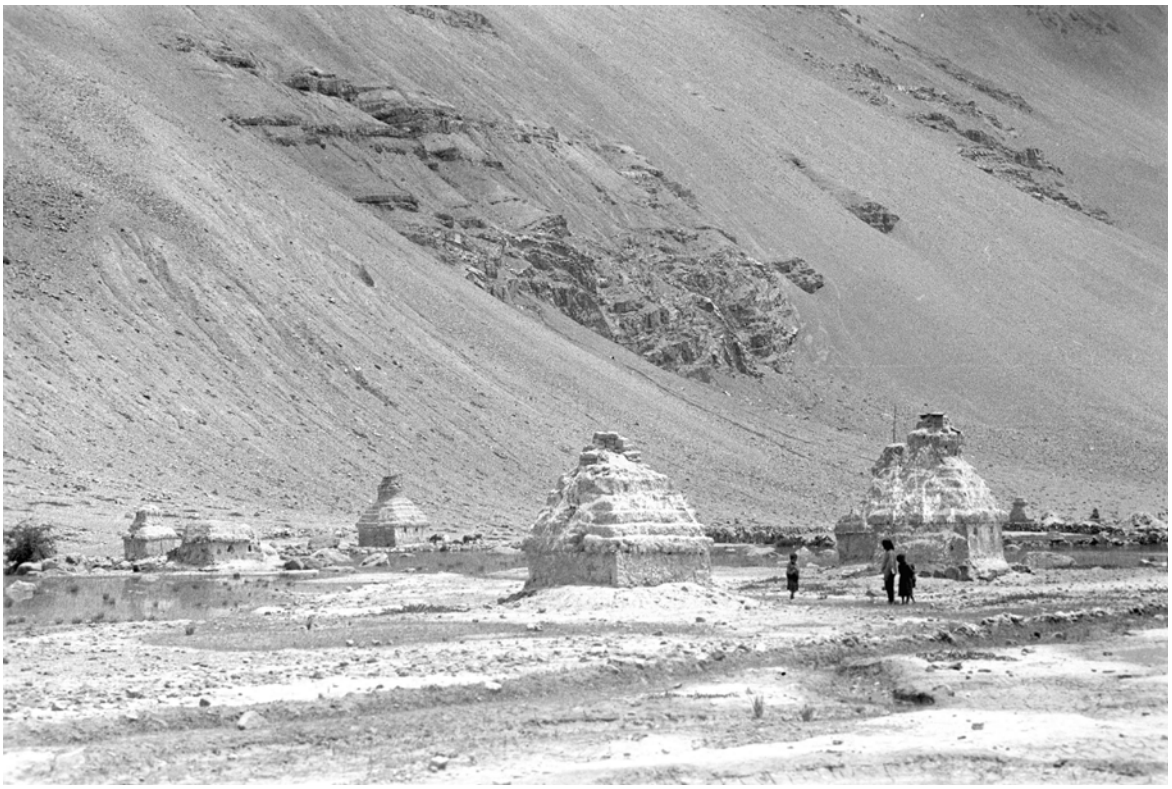


Fig. 435 South-eastern view of the chörten No. 19. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 436 The chörten on the north side of the chos-´khor, outside the monastery wall. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.



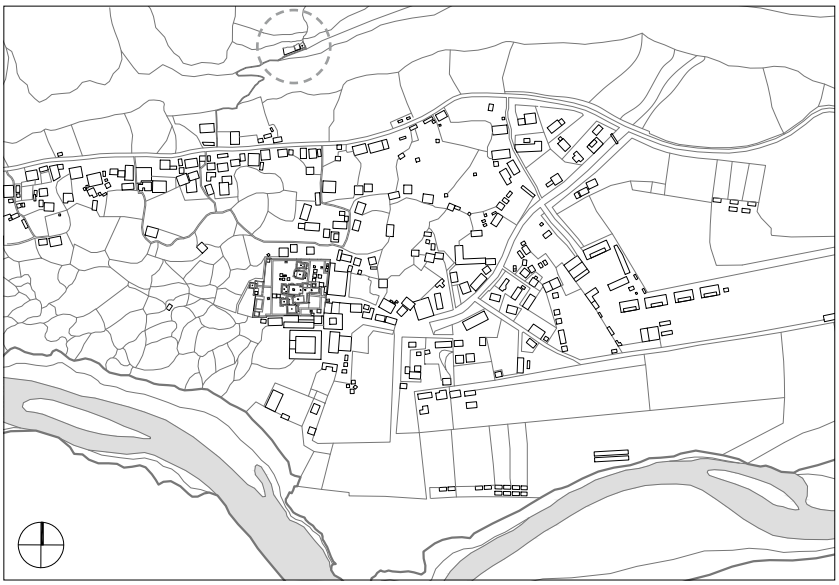
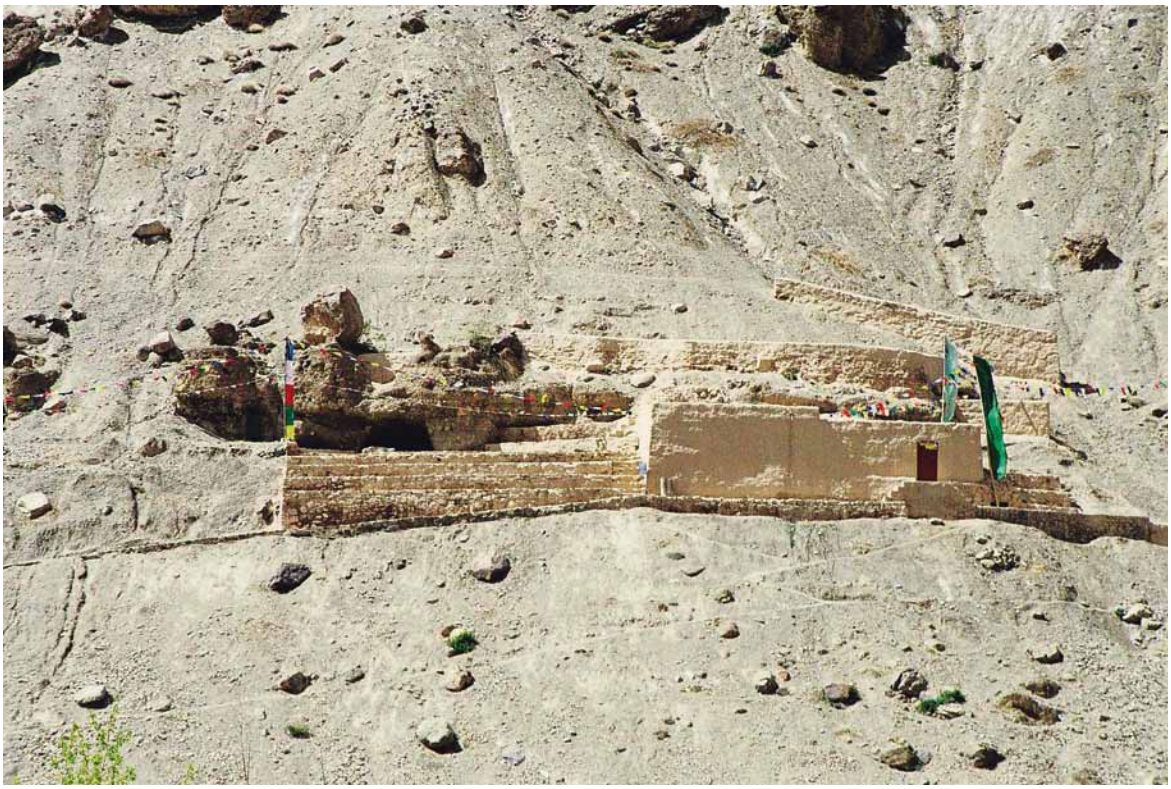


Fig. 437 The location of the Cave Monastery on the ascending mountain slope north of the village and the monastery of Tabo. © Neuwirth & Auer, TU Graz 2020.

Fig. 438 Southern view of the restored complex with the adjoining terraces. The building was placed in front of a natural cave and excavated zones, with retaining walls above to secure the slope against rock fall and landslides. Neuwirth 2002.



More than twenty caves have been reported to be located on the northern hillside above the monastic complex, about 50 metres above the valley floor, but only a single group is still accessible today. These caves were most likely used as monk's quarters and retreat centres in the past. Tucci reports after his visit: *"The winter seat of the monks, with their small cells dug into the rock which overhangs to the North over Tabo plateau, has been abandoned; the hermitages have been deserted and are beginning to crumble."* [87]

One of these caves was expanded into a so-called Cave Monastery. A footpath leads from the valley along the slope to the southeast facade, where the entrance to a long, windowless building is located. An open tribune is found on the southwest side with seating steps through which the roof of the building can be entered.

The complex consists of a total of four rooms. It is composed of a natural cave, excavated zones and two front rooms. The building has a length of 14.40 metres on the southeast side and a width of up to 8.20 metres on the side walls. The façade on the southeast side, where the entrance is located, is up to 3.80 metres high. One enters the entrance hall (1) via a narrow door and, from this room, it is possible to access a side room (2) on the southwest side, the cave niche (3) on the northwest side and the innermost chapel (4) on the north side. The walls of the entrance hall and the adjoining room consist of mixed masonry of natural stone and clay mortar, while the cave niche consist of natural rock, which was partly reworked. The innermost chapel (4) is a cave equipped with clay brick walls and a wooden ceiling, which is decorated with murals that present a great variety of themes and figures.[88]

87 TUCCI 1988b: 22.
88 THAKUR 2001: 296-299.

Fig. 439 Left: South-western view of the buildings in front of the cave temple on the hillside above the monastery of Tabo. Neuwirth 2002.

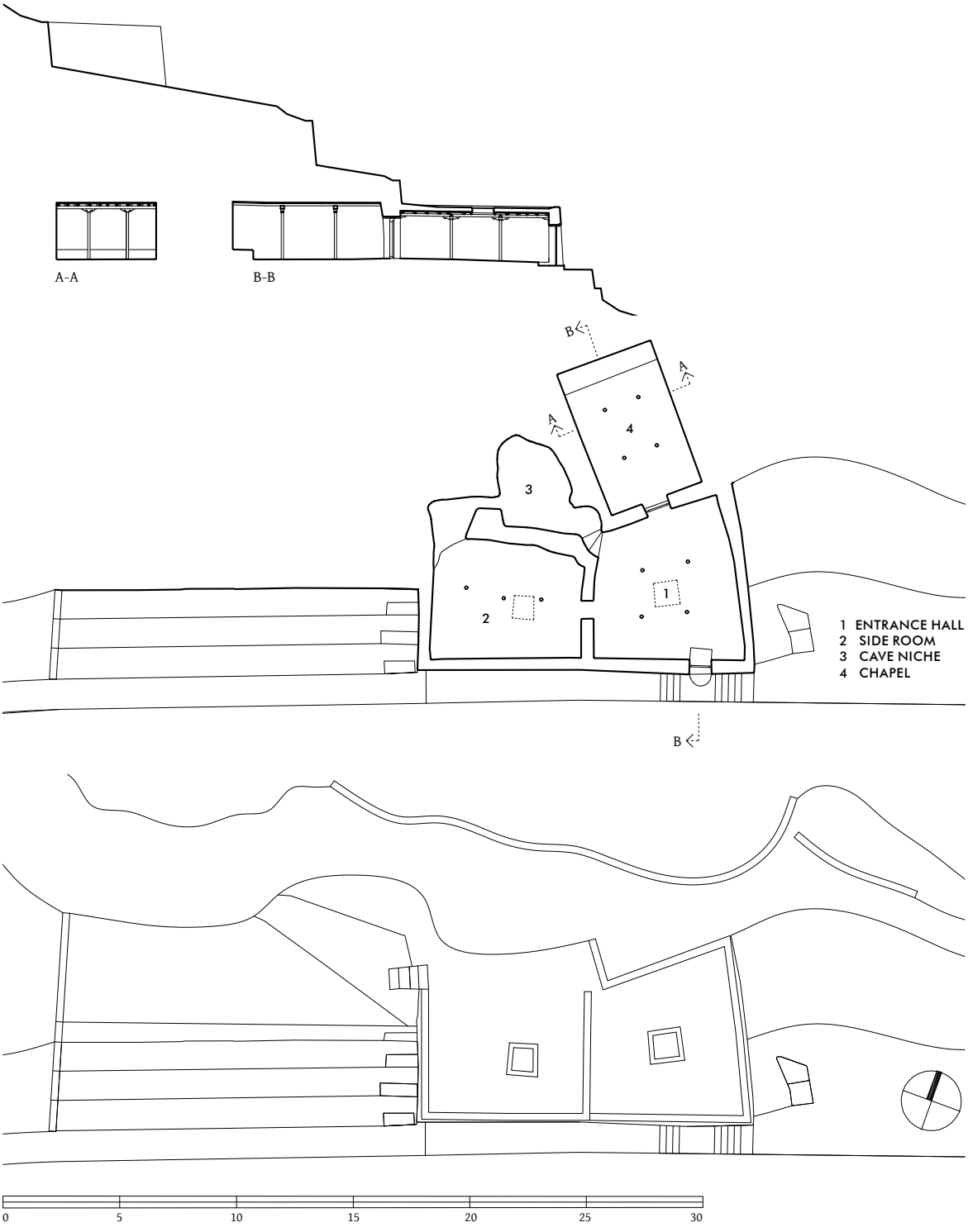
Fig. 440 Right: A stairway pedestal allows the access to the roof from the adjacent tribune. Neuwirth 2002.

Fig. 441 Two of the caves on the mountain slope north of Tabo: Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G.Tucci.

Fig. 442 The buildings in front of the cave on the hillside once consisted of four buildings; only one on the east side has been preserved in an altered form. The other buildings on the west side have now disappeared. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – MAO G. Tucci.

Fig. 443 The structures of the Cave Monastery on the hillside and some caves nearby, as seen from the north wall of the monastery area. Neuwirth 2002.

Fig. 444 Southern view of the hillside above the monastic complex, where about twenty caves have been reported. Neuwirth 2002.


A-A
B-B
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1
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1 ENTRANCE HALL
2 SIDE ROOM
3 CAVE NICHE
4 CHAPEL
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The floor plan of the entrance hall (1) is trapezoidal, and the walls in the northeast and southeast are 7.20 and 6.45 metres. The wall to the adjoining southwest room is 4.32 metres long. The entrance of the cave niche is up to 1.25 metres wide and located in the west corner of the room. The rear wall of the room with the entrance to the chapel measures 5.12 metres. Four round pillars with cross consoles support the four main beams of the ceiling construction, and all structural wooden parts are painted red. The interior is illuminated through an opening in the middle of the ceiling with a side length of 0.90 metre. The floor level slopes slightly towards the entrance, and the room height is around 2.00 metres.

The side room (2) is located southwest of the entrance hall and can be accessed from there via a door in the middle of the wall. This room is 4.45 metres wide and 5.20 metres deep, while the northwest wall consists of natural rock. Three wooden pillars with console capitals divide the room into two parts. The ceiling construction above consists of three main transverse beams, and all structural wooden parts here are also painted red. A rectangular opening in the ceiling allows light to enter the room.

The cave niche (3) can be accessed via three steps in the west corner of the entrance hall, but is also connected to the side room by a 0.50-metre-wide corridor. The ground area has an irregular shape, which is about 3.00 metres wide and up to 4.00 metres deep in the rear. The walls have obviously been reworked, but not painted.

The innermost chapel (4) is accessible via the southeast entrance hall. This chapel room is 4.25 metres wide and 6.47 metres deep with a height of 2.38 metres. The interior walls are orthogonal and evenly plastered, although the origin of this room is undoubtedly a cave. The clay bricks used to build the walls are clearly visible in the lower part of the southwest wall, because parts of the clay plaster are missing. The ceiling construction is made up of four red painted pillars and two main transverse beams, also red, which divide the room into three bays with a span of 2.10 metres. The console capitals reduce the free span of the main beams to 1.20 metres. The secondary layer consists of round beams, above which a simple bar layer with branches completes the ceiling construction. A 0.93-metre-deep pedestal with a height of 0.40 metre extends in front of the northwest wall, where the altar is located. The altar wall and the two side walls are decorated with murals.

The wall thicknesses vary between 0.50 and 0.70 metre. The spatial organisation, technical construction and interior decoration show that the two rear rooms (3 and 4) were created in an earlier construction phase, while the two outer structures (1 and 2) are recent additions. Interesting indications regarding the structural changes can be seen on Tucci´s photos from 1933.

Fig. 445 Overleaf: Plan documentation of the Cave Monastery. Above: the cross-section A-A through the interior of the temple room (4) with view to the northwest. Next to this, the longitudinal section B-B through the rising terrain, the temple interior (4) and the entrance hall (1) with view to the northeast. Middle: the floor plan with the two rooms in front of the chapel and the cave niche. All floor levels were changed by the restoration work conducted by the ASI. The original floors of compacted clay are now made of cement screed, which had a negative impact on the physiological properties of the building. Below: The Site plan showing the roof of the building with its openings, the terraced open area on the southwest side and the retaining walls above the building on the mountain slope. © Neuwirth & Auer, TU Graz 2020.

Fig. 446 The southwest side room which is connected to the cave niche by a narrow corridor. Neuwirth 2002.

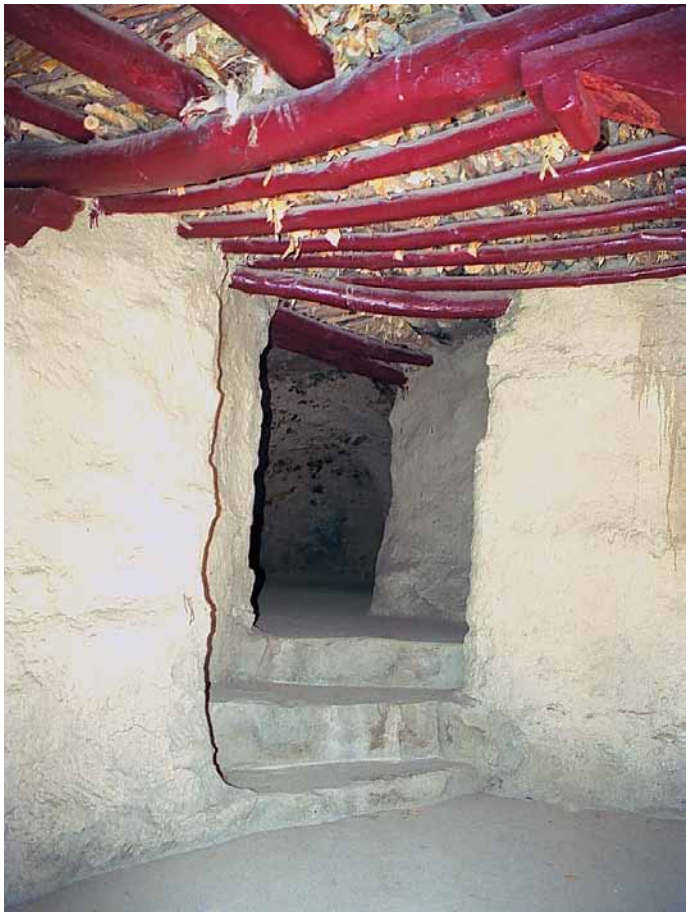


Fig. 447 The open access in the west corner of the entrance hall leads over three high steps into the cave niche. Neuwirth 2002.

Fig. 448 One of the four cross-consoles of the ceiling construction in the entrance hall. Neuwirth 2002.

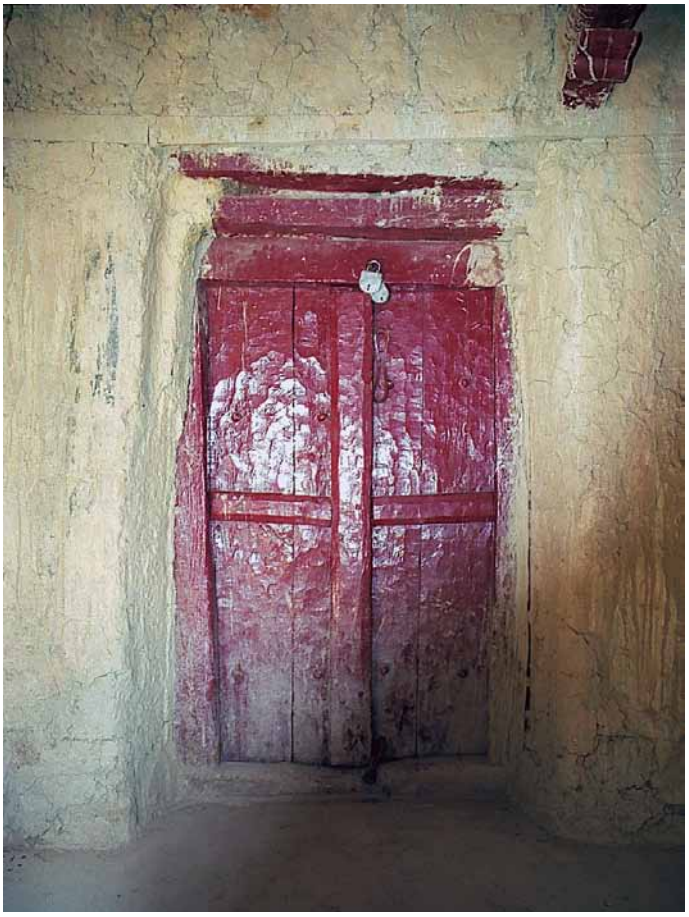


Fig. 449 The door on the northwest side of the entrance hall leads into the innermost chapel in the rear of the complex: Neuwirth 2002.

Fig. 450 Interior decoration of the temple room (4), showing the wall paintings on the front area of the southwest wall, which have suffered damage and show signs of later renovation work. Neuwirth 2002.

Fig. 451 Interior decoration of the temple room (4), showing the painting on the middle area of the southwest wall. Neuwirth 2002.

Fig. 452 Interior decoration of the temple room (4), showing the west corner of the room with an altar pedestal running along the northwest side, which extends across the entire width of the room. Neuwirth 2002.

Fig. 453 Interior decoration of the temple room (4), with a view toward the northwest and northeast wall. The pillars and main beams of the ceiling construction are painted red. The secondary timbers and the rod layer above are untreated. Neuwirth 2002.

Fig. 454 Detail of the wall painting on the left side of the northwest wall with a representation of Manjusri. Neuwirth 2002.


BASGO

Fig. 455 The imposing temple ruin of Basgo is located southeast of the Basgo village, in a distance of about 2.10 kilometres. Auer 2004.

THE TEMPLE RUIN OF BASGO

Carmen Auer

TOPOGRAPHY AND LOCATION

The village of Basgo is situated 42 km west of Leh and currently comprises about 150 houses and an imposing fortress on the top of the Basgo hill. Basgo was once the centre of the West Ladakh Kingdom, which lasted about 400 years. The fortified complex, known as Rabtan Lhatse, is one of the largest in Ladakh. The complex consists of a main fort naturally defended by cliffs and steep slopes on three sides, surrounded by numerous devensive structures. The three Maitreya Temples found within the walls of the fortress have been developed between the 15th century and the 17th century and are in the focus of touristic and conservation interests today.[89]

The ruin of a temple which indicates a much earlier building activity in this area is located on flat terrain, about 2.10 kilometres southeast of the fortress and near the main road that leads from Leh to Srinagar. The first description of the building can already be found in Francke's work. He related the temple and the remains of its decoration to the Main Temple of Tabo and its time of origin.[90]

The area is located on the east side of the fertile Indus River valley, which extends northwards from Basgo to Ney. The temple ruin is found on the northern side of the road and is currently surrounded by fields and parcels of land with small buildings that are partly enclosed by walls. On the east side of the ruin, a local council house called "panchayat" was erected close by, and the distance between the border wall and the east wall of the temple ruin is only 5 meters. From the road, the ruin is hardly discernible. It would be useful to have a recognizable entrance from the street and a distinct demarcation, regarding the historical meaning of the site.

89 The fortress of Basgo was listed in the World Monuments Watch list for the first time in 2000, and restoration work began in 2002, receiving additional support from the Namgyal Institute for Research of Ladakhi Art and Culture in New Delhi. See WORLD MONUMENTS FUND, Internet sources; For a detailed documentation see HOWARD 1989: 227-237 and DEVERS & HOWARD 2020:1-19.
90 FRANCKE 1999: 86.

Fig. 456 The fortress of Basgo, situated on the western slope of the hill range above the village, about 2.15 kilometres northwest of the temple ruin of Basgo. Wrumnig 2012.

Fig. 457 Southern view of the temple ruin, which is located directly next to the main road. Wrumnig 2012.

Fig. 458 South-eastern view of the temple ruin. Wrumnig 2012.

Fig. 459 The south façade of the temple ruin, showing the massive clay brick walls and parts of the plaster surfaces. Wrumnig 2012.

Fig. 460 Site plan of Basgo. The remains of the temple are situated on plain ground southeast of the village of Basgo. © Neuwirth & Auer, TU Graz 2020.

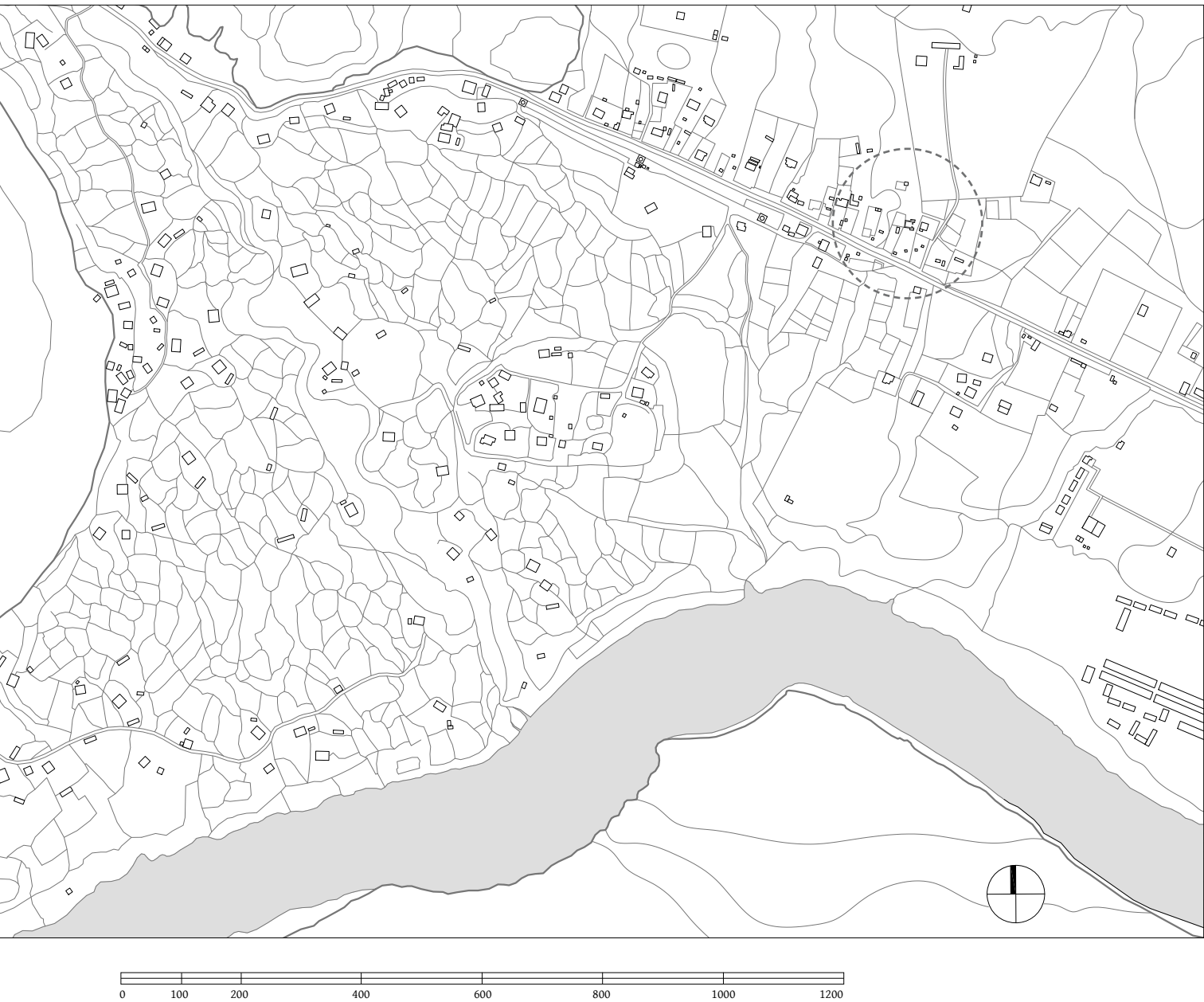
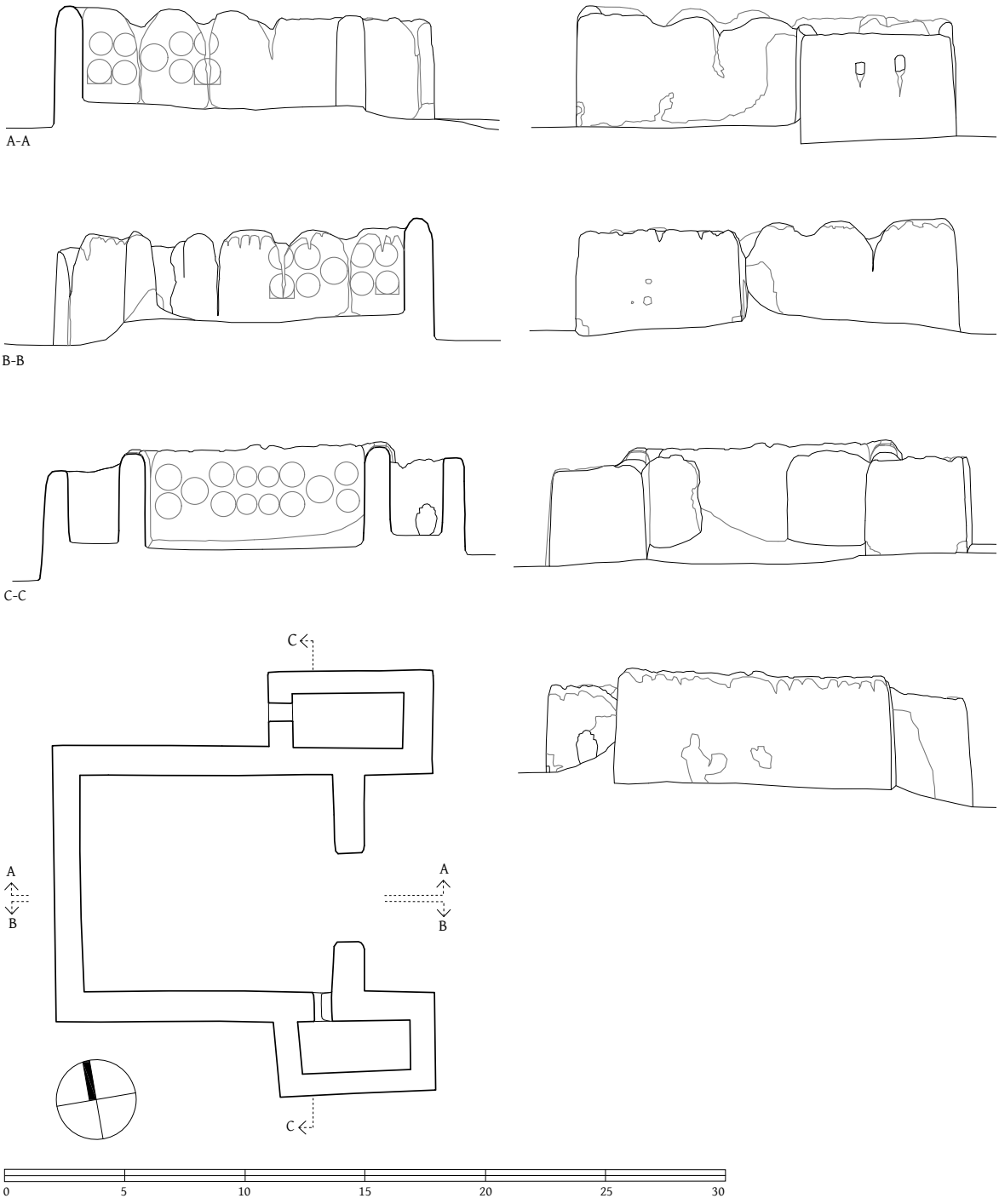


Fig. 461 North-eastern view of the temple ruin with the vestibule on the east side. Neuwirth 2004.

Fig. 462 Northern view of the temple ruin, with the side room adjoining the vestibule and the slightly higher main room. Neuwirth 2004.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REMAINS OF THE STRUCTURE

The exterior of the structure consists of the massive clay brick walls of a rectangular main room with a vestibule and two lateral rooms that are connected to the vestibule. The ceiling and roof construction and the inner supporting structure have completely disappeared.

The main axis is east-west oriented, with a deviation of 8° counter-clockwise from due east. The entrance is located on the east side. When measured on the outside, the structure is 15.80 meters long and 17.45 meters wide. The height of the preserved walls measures between 4.00 and 5.00 meters, which is mainly a result of the unevenness of the surrounding terrain. However, the walls of the main room reach an average height which is about 0.40 metres higher than the walls of the vestibule and the side rooms.

Apart from a stone foundation in the ground zone, the building is entirely made of air-dried clay bricks. The wall thickness ranges between 1.20 and 1.30 metres. This thickness is caused by a double-shell masonry construction with filler material. The brick dimensions are 0.40 x 0.25 x 0.10 metre. An archaeological investigation of the ground zone would be helpful and necessary to collect additional information.

The vestibule of the ruin is 9.10 metres wide and 2.90 metres deep, while the width of the wall opening into the main room is 3.70 metres. Narrow rooms that are 2.20 metres wide and 4.60 metres deep are found on both sides of the vestibule. The room on the north side has a small irregular opening on the west side, and the room on the south side can be accessed through a narrow incision in the southeast corner of the main room. Edges and building seams in the masonry to the east of the north and south walls in the main room indicate that original entrances existed with an opening width of 1.20 metres.

The main room is 9.00 metres wide and 10.50 metres deep. The partly heavily eroded walls reach a height of up to 4.00 metres inside. The shape of the erosion on the upper edge of the brickwork is indicative of the former ceiling construction above the main room, which can be closed by three main transverse beams at a distance of 2.60 metres. With a free span within the room of 9 metres, six pillars can be assumed to have supported the ceiling construction. The floor level of the main room is about 1.20 metres higher that in the vestibule, and the level in the side rooms is another 0.30 and 0.60 metre higher than that in the main room

Fig. 463 Overleaf: Plan documentation of the temple ruin. Above on the left: the longitudinal and cross-sections, showing the different floor levels between the outside and the inside as well as between the vestibule, the main room and the side rooms. Inside, the remains of the sculptural decoration have been preserved. Beside the sections: the respective elevations of the temple. Above: the south elevation. Below: the north, east and west elevations, showing an impressive structure with wall heights ranging from four to five metres. Large areas of the walls are still covered with the original clay plaster. © Neuwirth & Auer, TU Graz 2020.

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Fig. 464 Overleaf: The floor plan of the structure, showing the dimensions and organisation of the rooms, oriented along its east-west main axis, with the vestibule facing east and the main room to the west. The function of the rooms laterally connected to the north and south is unclear; they were possibly chapels of the protective deities. © Neuwirth & Auer, TU Graz 2020.

Fig. 465 East part of the north wall inside the main room of the ruin. Luczanits 2009.

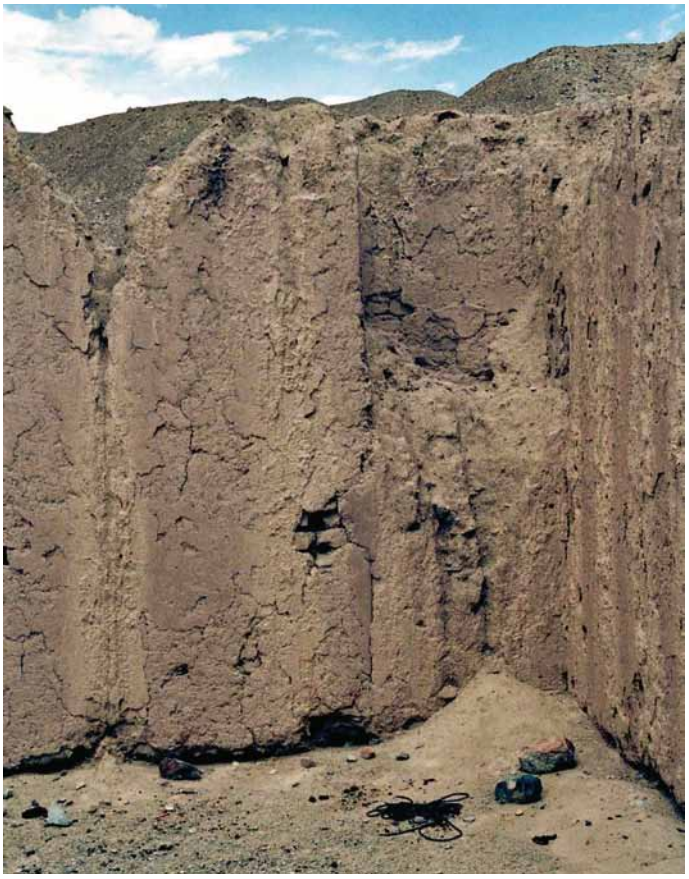


Fig. 466 Today, the north side room can only be accessed from outside through a small irregular opening on the west side. A construction seam next to the northeast corner of the main room could indicate the original access point. Neuwirth 2004.

Fig. 467 East part of the south wall inside the main room of the ruin. Luczanits 2009.

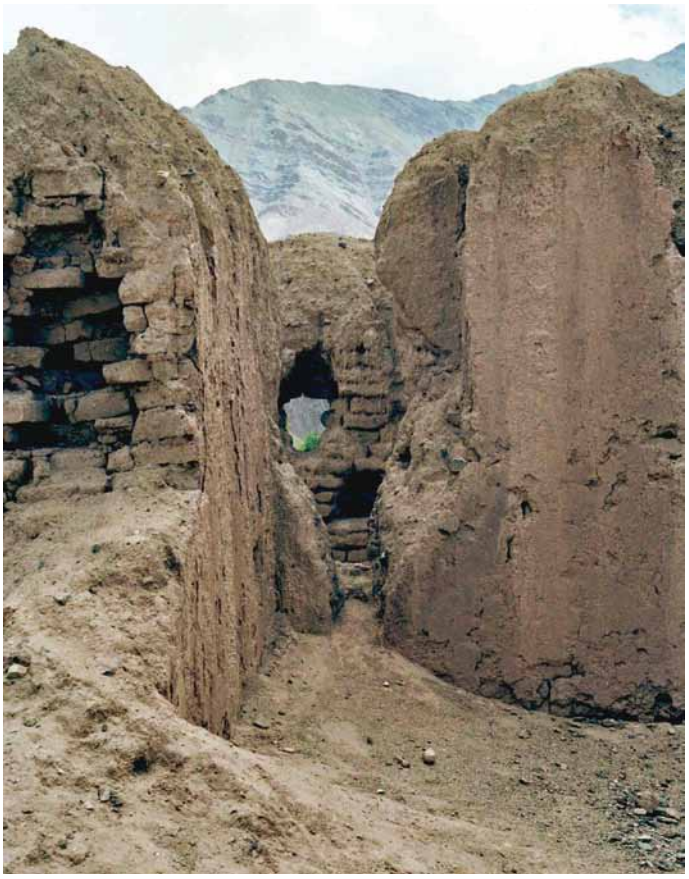


Fig. 468 Likewise, the south side room at the southeast corner, which can be reached from the inside through a narrow incision. This room has a construction seam that indicates the original access with an opening width of 1.20 metres. In this side room, two small windows are located in the south wall at a height of about 1.50 meters above the inner floor level or 2.80 metres above the outside terrain. Neuwirth 2004.

Fig. 469 View from the east side into the vestibule and the main room of the former temple. Neuwirth 2004.

Fig. 470 The wall on the west side of the main room and the adjoining areas on the south and north walls, where the remains of the sculptural decoration have been preserved. The circular halos and peg holes indicate the former arrangement of the figures. The holes show the position of the pegs which were used to fix the sculptural parts. These, therefore, allow a conclusion to be made about the iconographic program. The pegs in the middle and at the bottom of the halos supported the figures, and the holes below show the positions of the respective bases. Neuwirth 2004.

REMAINS OF THE INTERIOR DECORATION

Remarkable and essential evidence for the dating in the main room of the ruin is provided by the halos and the peg holes found on the entire west wall and on the adjoining areas of the north and south side walls. On the west wall, there are fourteen halos with peg holes. The adjacent part of the north wall and south wall both have nine halos with peg holes.

The modelling circular halos and peg holes once held interior decoration figures. The number and the composition of the 32 halos as well as their relationships to the peg holes are comparable with the sculptural program in the Tabo assembly hall in the Main Temple, which included the deities of a Vajradhatumandala and which can be dated to the mid-11th century.[91] In contrast to the Vajradhatumandala in Tabo, where the figures are evenly distributed along the walls of the assembly hall, they are concentrated within half of the interior space here.

91 LUCZANITS 2005: 70-73.

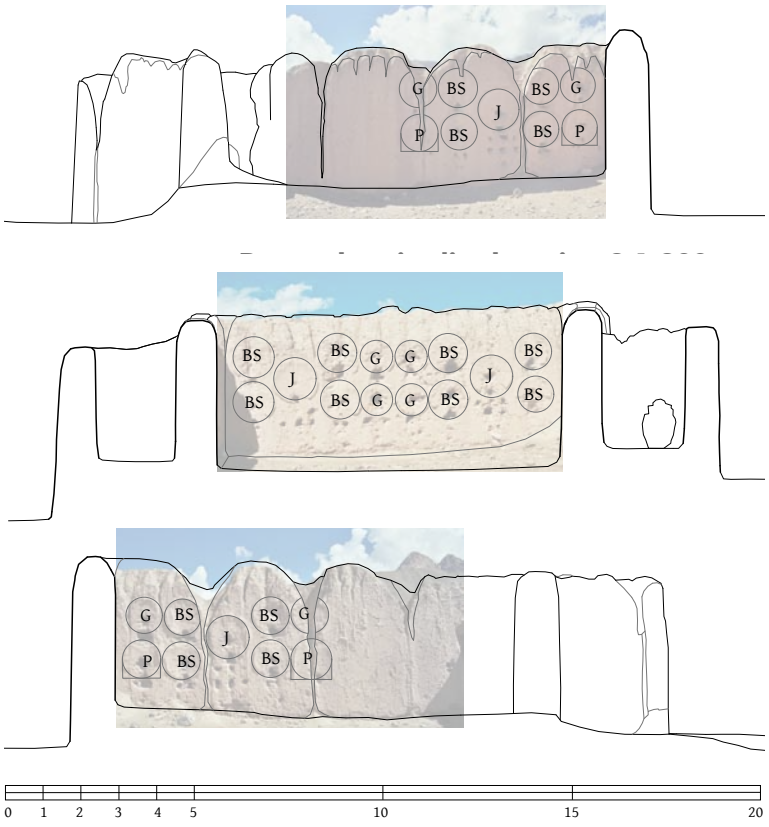


Fig. 471 Remains of the interior decoration on the southern wall. The central Jina (J) is flanked by four attendant Bodhisattvas (BS), and two more goddesses (G) are seen above and two more protectors (P) are seen below.

Fig. 472 The circular halos and peg holes on the west interior wall. According to Luczanits, the central Vairocana with the four accompanying goddesses once occupied a throne in the centre of the room. On the west wall, two Jinas (J) are accompanied by four attendant Bodhisattvas (BS) and four offering goddesses (G) have been placed between them in the middle area.

Fig. 473 The circular halos and peg holes on the north interior wall. Again, the central Jina (J) is flanked by four attendant Bodhisattvas (BS), and two more goddesses (G) are seen above and two more protectors (P) are seen below. © Neuwirth & Auer, TU Graz 2020.

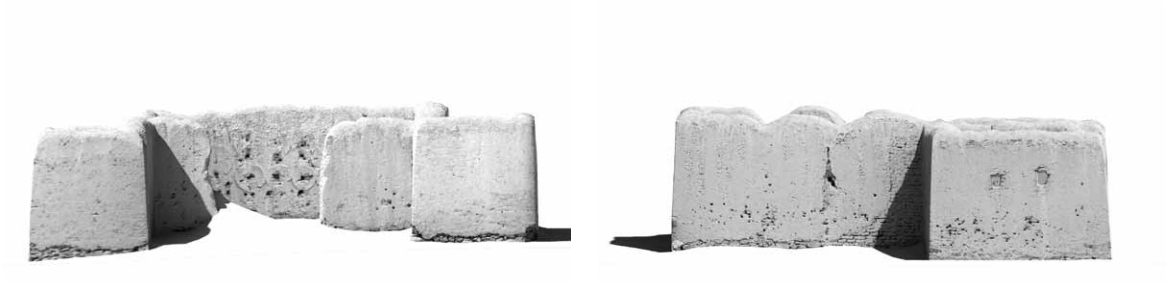


Fig. 474 The spatial representation of the temple ruin, showing the east and the south elevations above and a bird´s eye view below. © Neuwirth & Auer, TU Graz 2020.

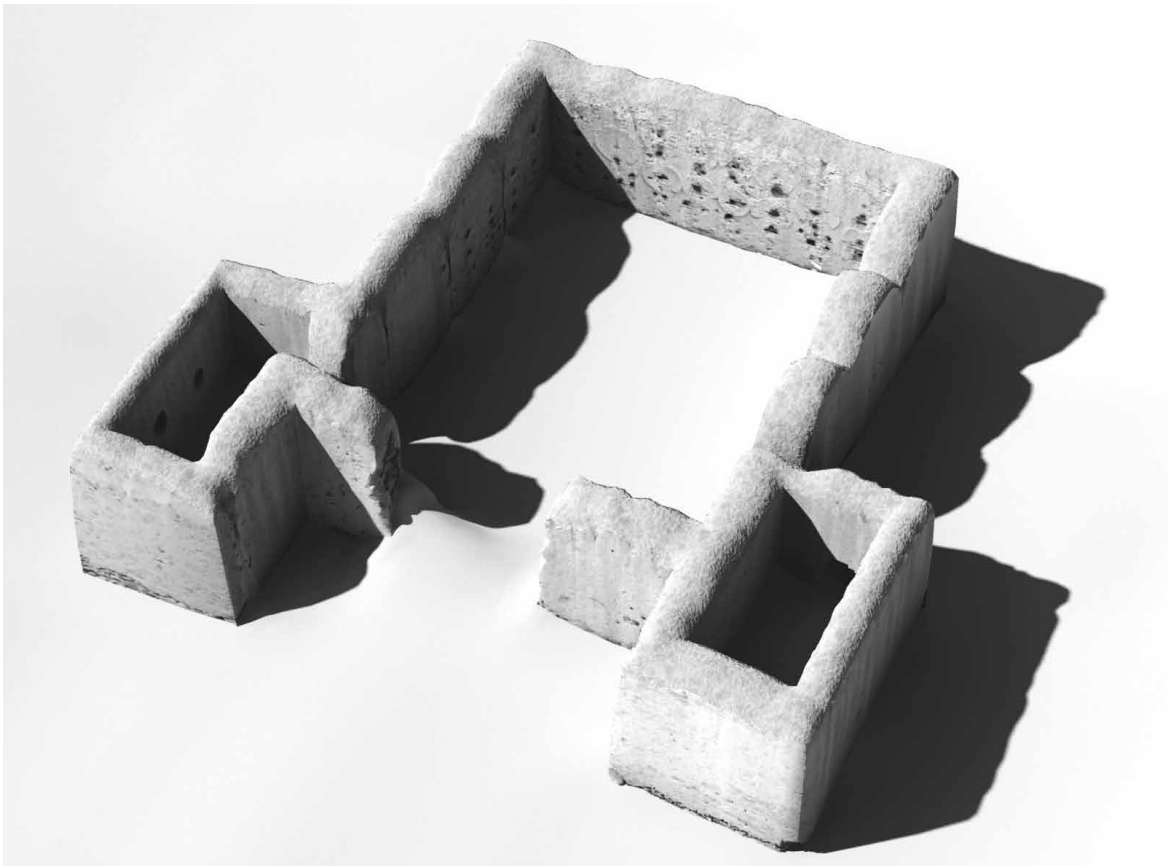
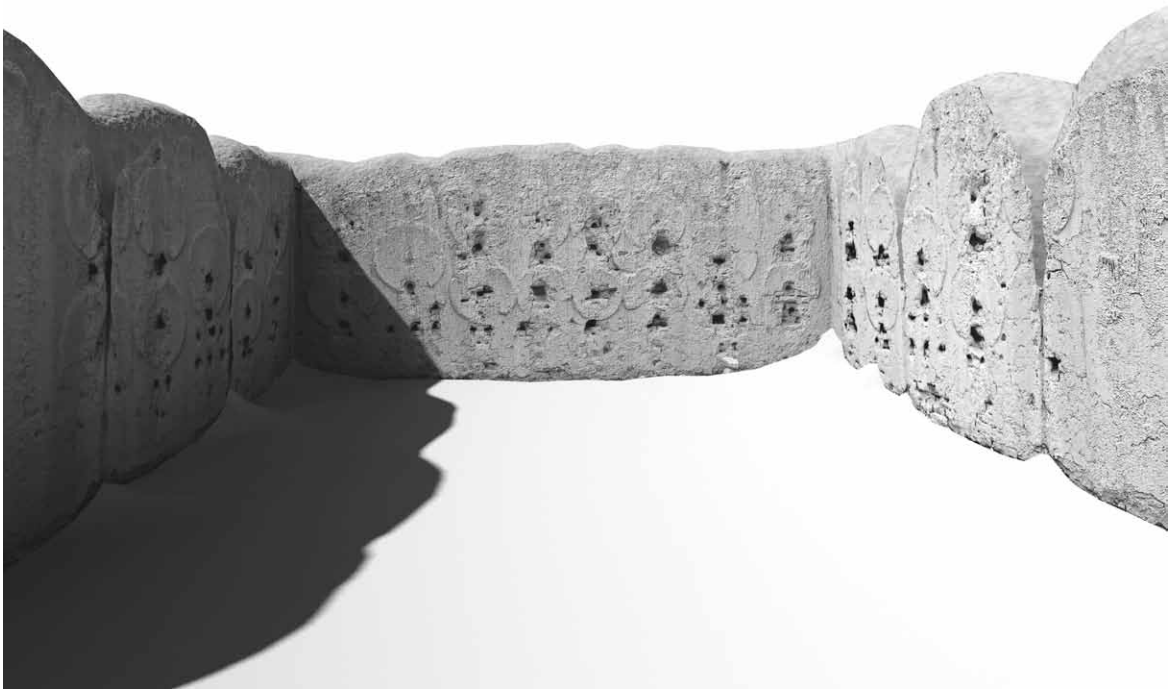
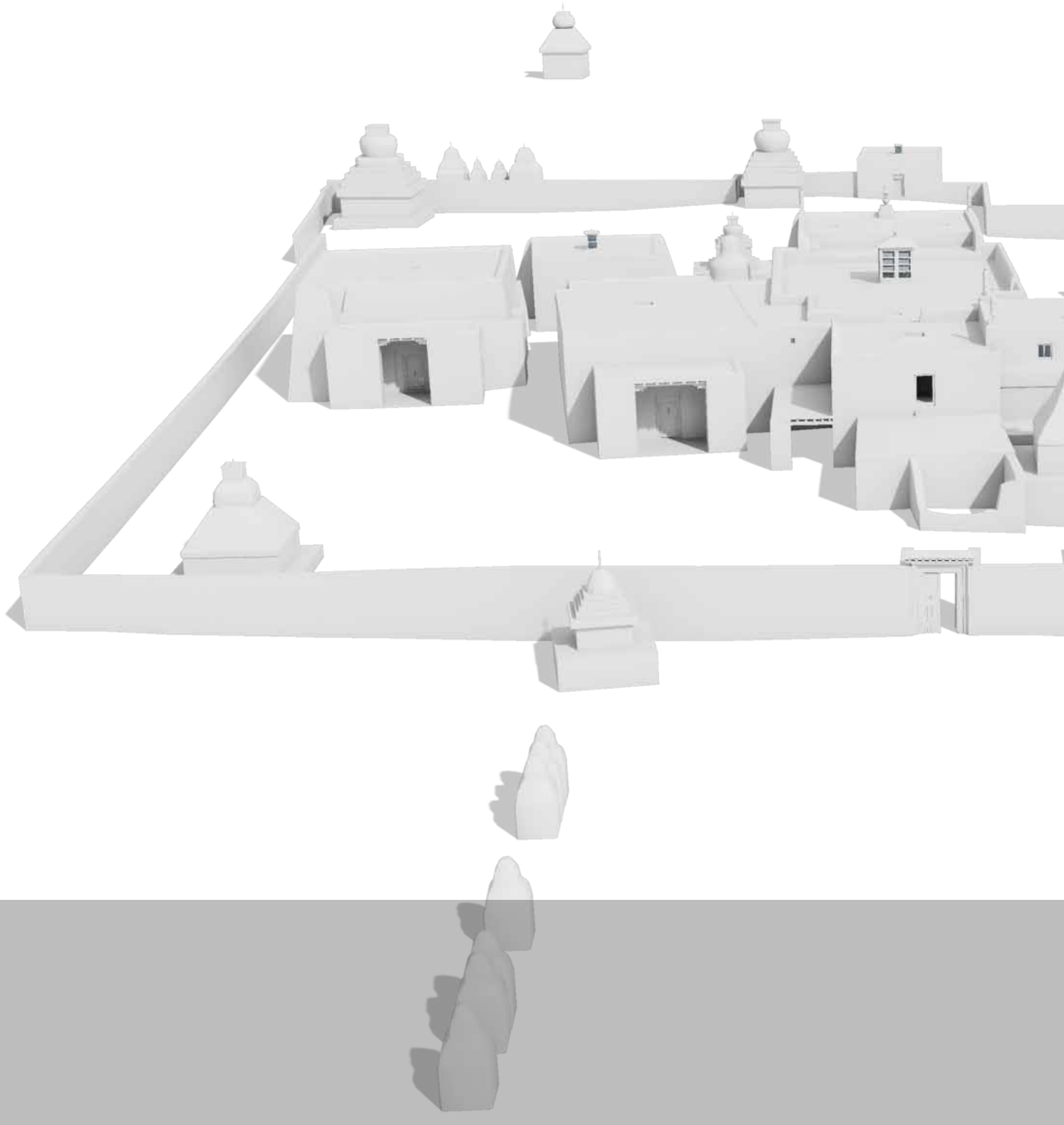
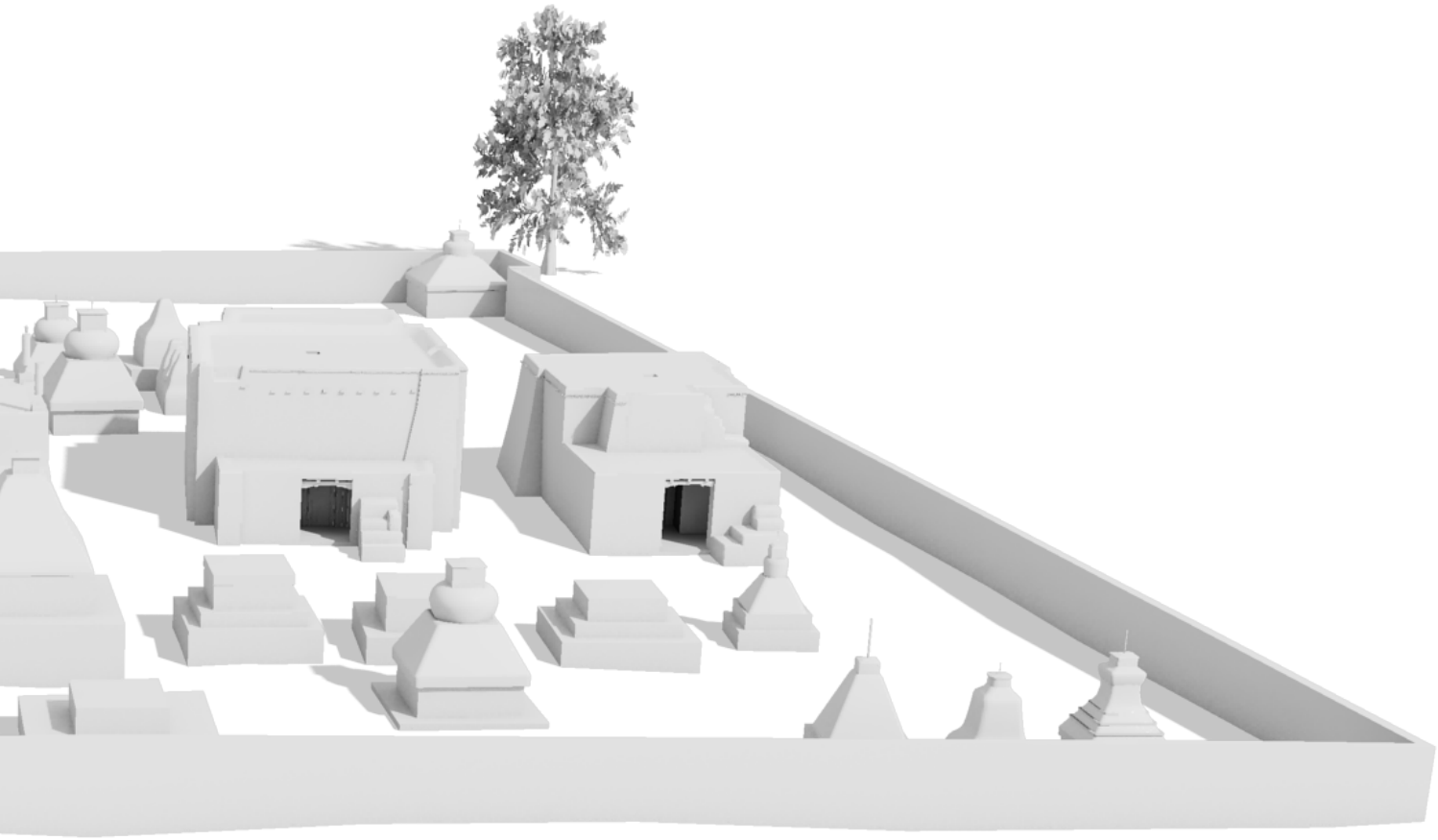


Fig. 475 The spatial representation of the temple ruin, showing the west and the north elevations above and the remains of the interior decoration below. © Neuwirth & Auer, TU Graz 2020.







PART TWO: ANALYSES

"A plot of land possessing good signs and characteristics is the foundation from which all happiness is produced."

Thubten Legshay Gyatsho, the 18th Chogay Trichen, CHOGAY TRICHEN 1979: 30.

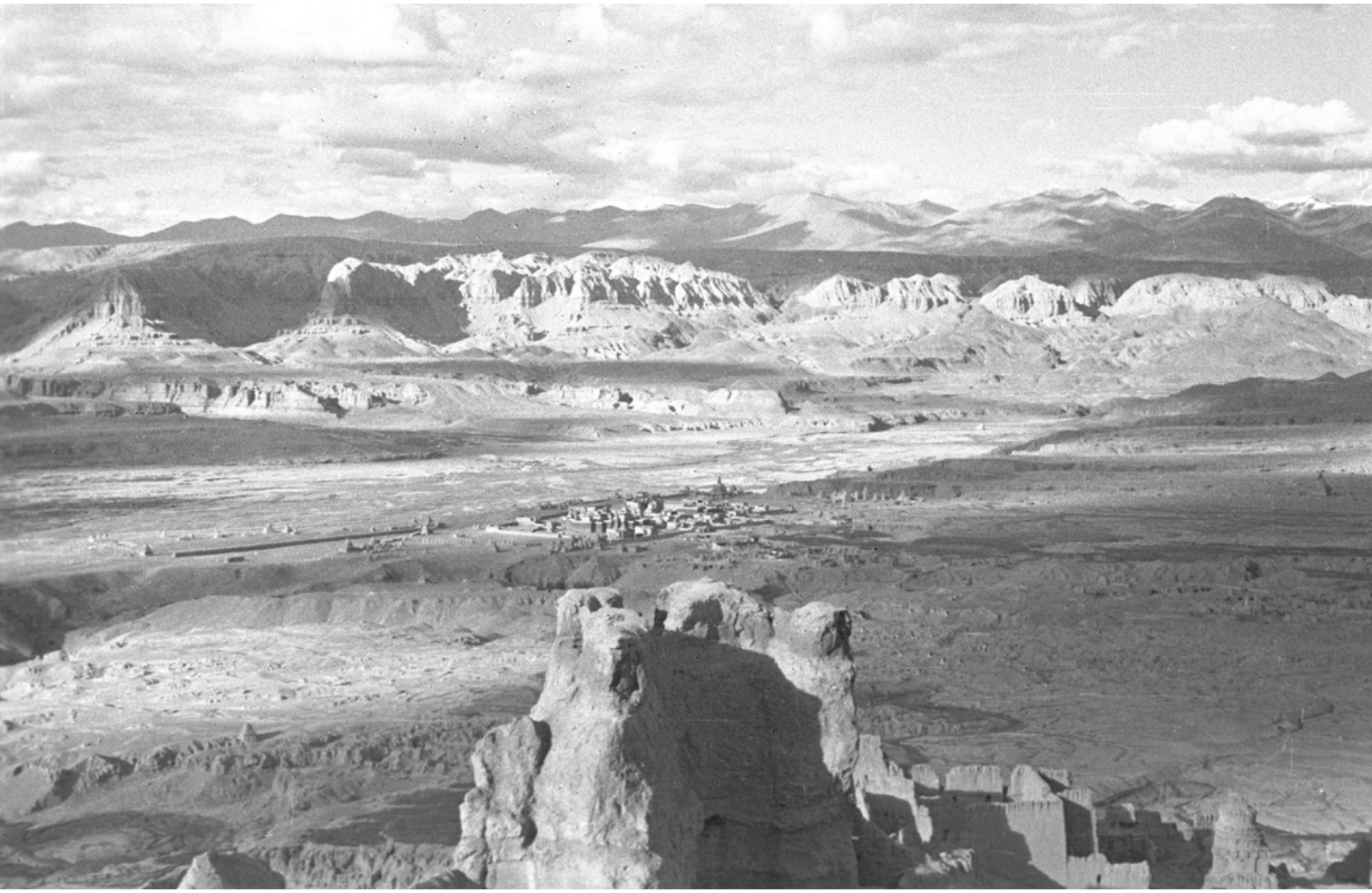


Fig. 475 The landscape of Tholing as seen from the southwest hill range. Tucci expedition 1933. ©_Museo delle Civiltá – ©MAO G. Tucci.

TOPOGRAPHY AND LOCATION

Carmen Auer

THE CHOICE OF THE SITE

If one compares the three monasteries of Tholing, Nyarma and Tabo, one can observe at first glance that there is one striking common feature. All three monasteries are located in open valleys in the immediate vicinity of rivers and – apart from an enclosure that defines the sacred space – are not significantly fortified. But which other aspects influenced the foundation of a monastery or a temple with regard to the choice of location?

In addition to the traditional founding myths, whose potential for interpretation is primarily religious and mythological, one also finds general references in Tibetan writings to the choice of location for sacred buildings. In the book entitled *Gateway to the Temple*, one can find some recommendations in the chapter *"Examination and taking possession of the building site"*, which illustrate the importance of choosing the right place:
„One should seek out a place for building a temple that have the following: a tall mountain behind and many hills in front, two rivers converging in front from the right and left, a central valley of rocks and meadows resembling heaps of grain, [...]. The good characteristics called the four Earth-pillars are: a wide expanse in the east, a heap in the south, a rounded bulge in the west, and in the north a mountain like a draped curtain." [92]

The text explains how further distinguish the good and bad attributes regarding the place, reaching the following conclusion: "*It is difficult for there to exist in one place all the good characteristics. But having discerned the characteristics of the building site, one should hold as most important the good characteristics that are present. Whatever bad characteristics there are should be suppressed by the natural element which is antagonistic to the nature of the fault (as for example water fights fire). One should strenuously exercise the means to remove the evil characteristics by erecting the supports of Enlightened Body, Speech and Mind (i.e. sacred images, scriptures and stũpas) and trough other activities."* [93]

92 CHOGAY TRICHEN 1979: 29.
93 CHOGAY TRICHEN 1979: 30.

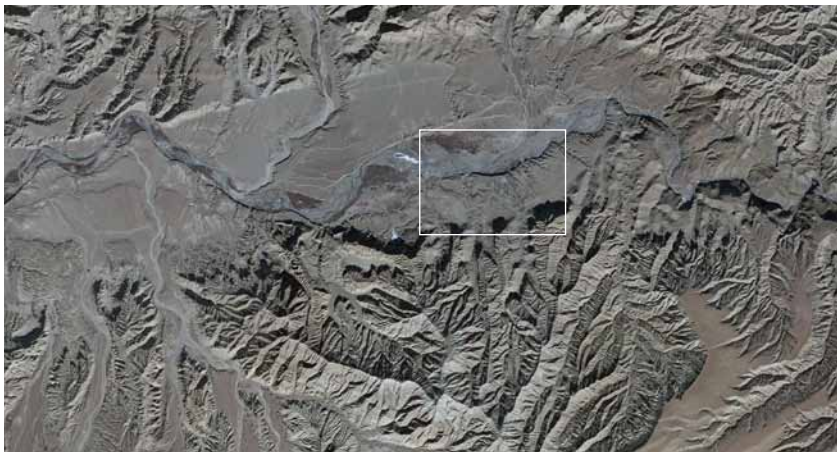


Fig. 476 The monastery of Tholing is located in the Ngari province of Western Tibet, near the border to India, on the south bank of the Sutlej River. The Sutlej valley is oriented from east to west. In the south, the plain is bordered by the ascending ridge of hills and, in the north, by the banks of the wide valley of the Sutlej River that flows from east to west. Satellite picture, taken from 17 kilometres above ground level.

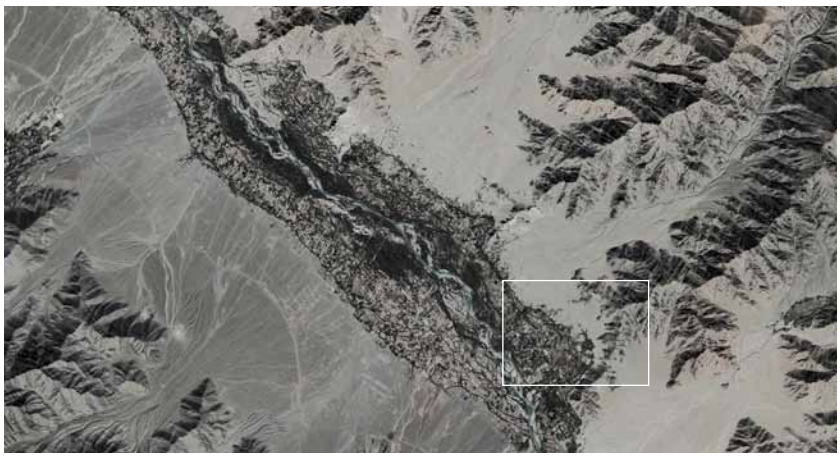


Fig. 477 The ruins of Nyarma are located in Ladakh, 225 kilometres northwest of Tabo, on the northeast bank of the Indus River that flows from southeast to northwest. The ruin field is situated at the border between the farmland and the ascending mountain slope of the northeast hill range. Satellite picture, taken from 17 kilometres above ground level.

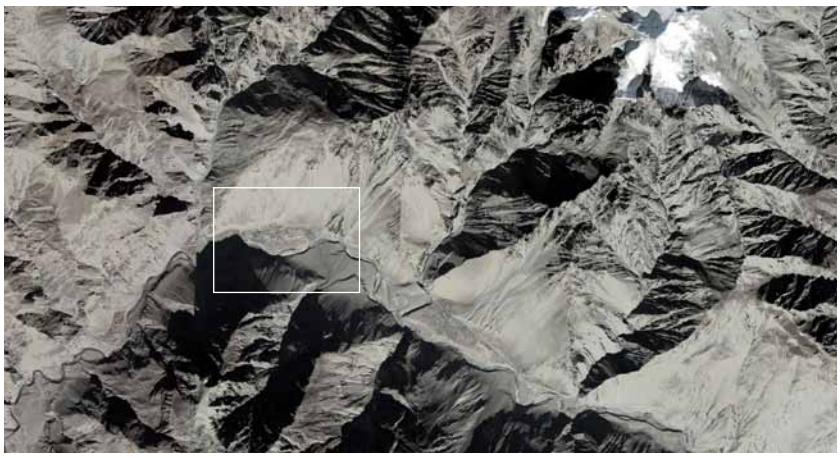


Fig. 478 The monastery of Tabo is located in the Spiti Valley of Himachal Pradesh, 150 kilometres northwest of Tholing, on the north bank of the Spiti River. The valley is oriented from east to west. The rising slopes of the mountain range extend on the north side of the monastery. On the south side, the Spiti River that flows from west to east cuts deep into the valley some distance away, and the mountain range rises steeply behind this. Satellite picture, taken from 17 kilometres above ground level.

In summary, it can be concluded that these instructions provide experience and technical knowledge which, on closer examination, can also be used to set pragmatic and practical criteria which benefit the safety of the construction process. Thus, references are made to different religious ceremonies, as well as descriptions of very specific, practical measures, for example, concerning the suitability of the building site:
"It is good if the center is elevated and the land is lower in the east and north. Also there is the digging test, whereby one digs a hole in which ground level is about at knee height to someone standing in the middle of the hole. Then refilling the hole with the earth previously dug out, if there is more than enough to fill it, that is good. [...] Then, to test its characteristics, dig again and pat smooth the sides of the hole. Fill it up with water and then walk one hundred paces away. Returning back look into the hole. If the water has not subsided, but remains full, it is extremely good. [...] Nearby that place there should be good water, trees with fruit and leaves, water which flows from right to left, and earth which is an intense, brilliant white in hue." [94]

In Tibetan texts, the good characteristics defined above largely apply to the monasteries described here. In Tholing as well as in Tabo, you can find, for example, *"a wide expanse in the east and in the north a mountain like a draped curtain."* Nyarma also has the mountains in the north, but the plain in the east is limited. The river to the south can be found both in Tabo and in Nyarma, while the river in Tholing runs north of the monastery, but many different tributaries are found here, which is evaluated positively. The characteristic that *"the center is elevated and the land is lower in the east and north"* guarantees a certain safety, regarding floods and landslides. The location of Tholing and Tabo was accordingly well-chosen, while Nyarma, whose topography on the north and east sides rises slightly, was not.[95]

THE ORIENTATION OF THE SITE

The sacralisation of an unknown area was always understood as a cosmic consecration: *"Whoever administers order to space, repeats the exemplary deeds of the gods"*.[96] It is the mystical reflection of the world itself and a projection of its cosmic powers.[97] The entrance to a site or temple is not only the entrance to a sanctuary; it is the entrance to the mysterium magnum.[98] Aligning the temple or sanctuary with the direction of the solar orbit, the believer attains close personal relations to the cosmos.[99]

94 CHOGAY TRICHEN 1979: 30.
95 According to historical sources the monastery of Nyarma was already in ruinous condition in the middle of the 15th century and had been destroyed by floods. PANGLUNG 1983: 284.
96 ELIADE 1998: 33.
97 TUCCI 1972: 28-29.
98 TUCCI 1972: 31.
99 GERNER 1987: 55.

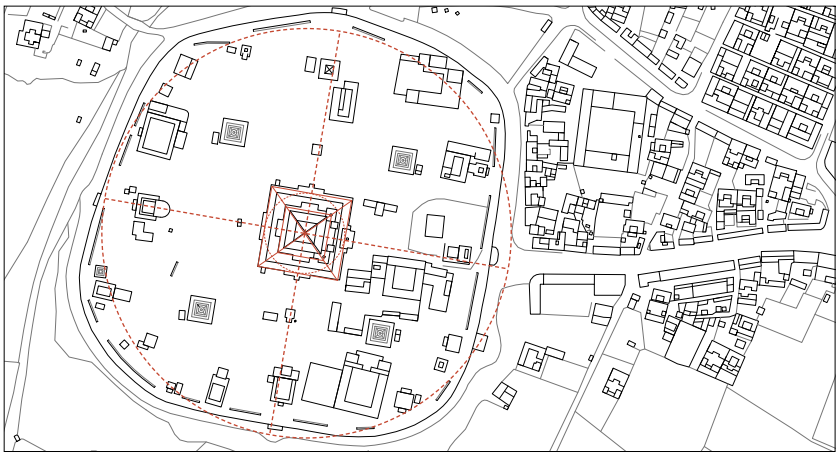


Fig. 479 The monastery of Samye, founded in the 8th century. Corresponding to the cosmic system of the Abhidharmakośa, the outer wall symbolises the ring of the "Iron Mountain" which encloses each universal system. The Main Temple, the main axes and the enclosing wall with the four gates were schematically marked in order to enable a scale comparison with Tholing, Nyarma and Tabo. © Neuwirth & Auer, TU Graz 2020.

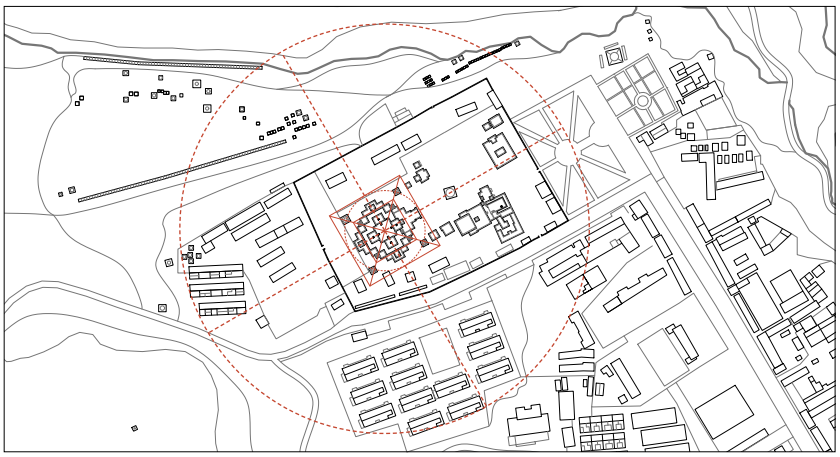


Fig. 480 The Main Temple of Tholing is oriented along a northeast-southwest axis so that its vestibule opens to the northeast. The orientation deviates 30° counter-clockwise from due east. This orientation determines the main and secondary axis of the Main Temple as well as the orientation of the other temples, and only the White Temple is turned 88° clockwise in its orientation. © Neuwirth & Auer, TU Graz 2020.

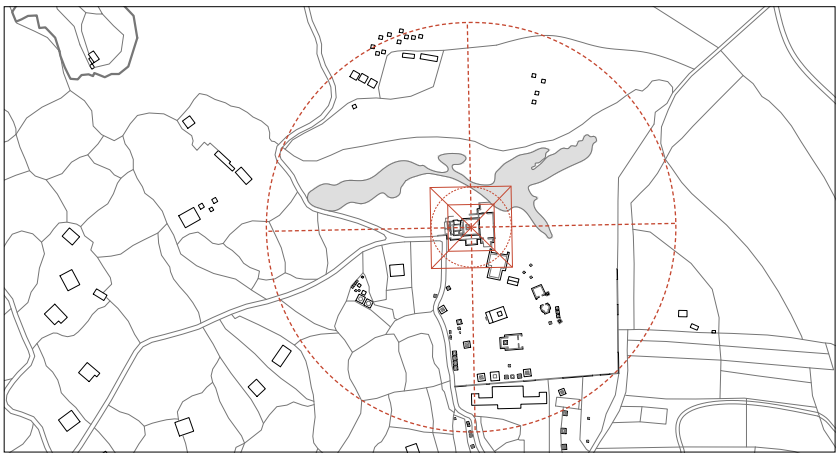


Fig. 481 The Main Temple of Nyarma is oriented along an east-west axis, with a deviation of 4° counter-clockwise from due east. The former entrance was located on its east side. The southern-most temple in the area has the same orientation, but the others differ significantly from this alignment. Chörten fields around the area are located to the south, the west and the north of the Main Temple. © Neuwirth & Auer, TU Graz 2020.

According to Tucci, temple buildings received the classical "five-fold disposition" with a centre and four doors as cardinal points representing the way in which Indians perceive the order of the visible world. A six-fold division would be achieved by adding a top part above the centre, and ten-fold divisions could be created by adding the four intermediate directions to the cardinal directions.[100]

Basically, the early temples are characterised by a relatively precise orientation toward the east, as can be found in Nyarma and Tabo at the Main Temples. This orientation determines both locations of the entrances and the positions of the main and secondary axes of the temple and, subsequently, the geometry of the building and often also the design of the entire complex.

The preference for the eastern orientation can be observed in many cultures and is directly related to the sunrise. Depending on the foundation date, which, according to Tibetan sources, plays an important role from an astrological point of view, the point at which the sun rises on the horizon can be relatively different depending on its surroundings. Accordingly, the orientation to the east and the respective deviation from this point depend on the founding date and the surrounding topography of the location.
Other peculiarities, such as an elevated location of the building site and fact that certain reference points in the surroundings are chosen that have religious or animistic significance, can also play important roles. The Main Temple in Tholing, for example, is located on an elevated plain above the Sutlej River valley. The main axis of the temple is oriented northeast-southwest and, thus, in parallel with the wide-open river valley.

100 TUCCI 1972: 46-48.

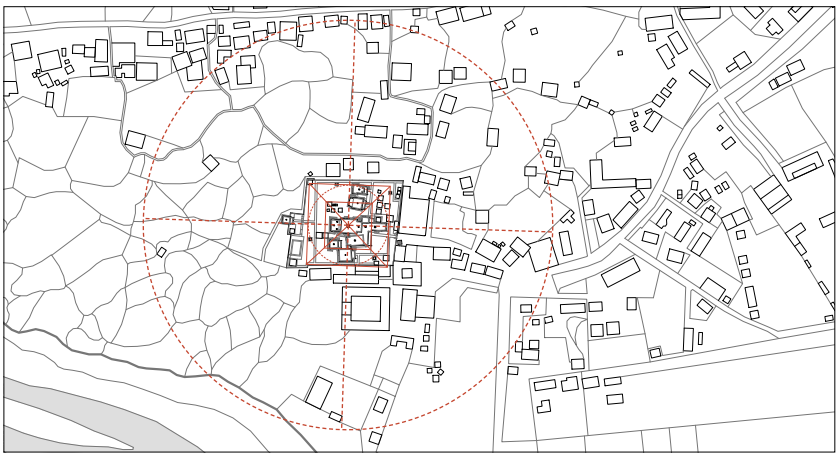


Fig. 482 In Tabo the main axes are oriented east-west, and the entrances and vestibules of all freestanding temples open to the east. The Main Temple also follows this orientation, but the New Entry Hall in front of it can be entered from the south side. While the longitudinal axis of the Main Temple with a deviation of 3° corresponds relatively exact to the east direction, the longitudinal axes of the other temples deviate between 10° clockwise and 5° counter-clockwise. © Neuwirth & Auer, TU Graz 2020.

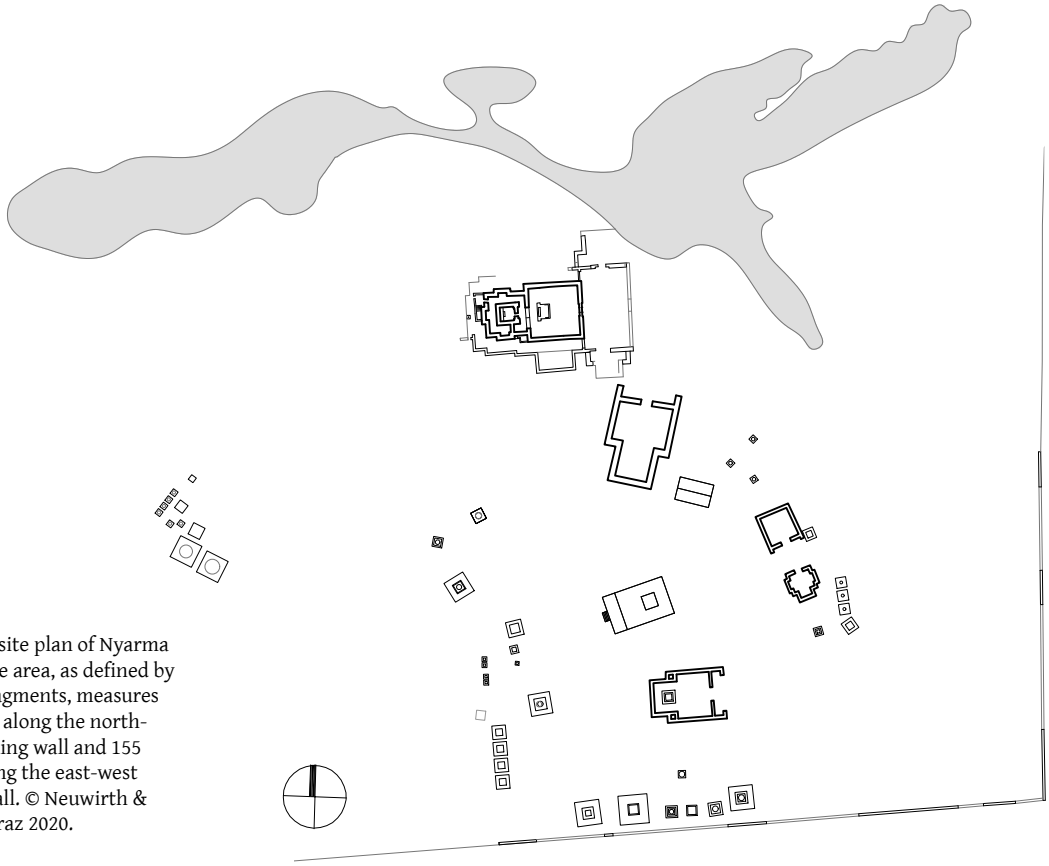


Fig. 483 The site plan of Nyarma in 2003. The area, as defined by the wall fragments, measures 160 metres along the north-south running wall and 155 metres along the east-west running wall. © Neuwirth & Auer, TU Graz 2020.

Fig. 484 Site plan of Tholing in 2007, surrounded by a wall that encloses an almost rectangular area which is up to 200 metres on the northwest side and 145 metres wide on the northeast side. Four entrances are located in the cardinal directions. © Neuwirth & Auer, TU Graz 2020.

THE MONASTERY´S BORDER

The surrounding walls of the monastery district define the extent of the sacred space around the temples as well as the locations of the entrances and, thus, also define the dramaturgy of the paths within the monastery area. The fact that the buildings of a monastery district are or were bordered by an enclosure wall is characteristic of all monasteries.

Corresponding to the cosmic system of the *Abhidharmakośa*, the surrounding outer wall of the temple symbolises the ring of the "Iron Mountain" which encloses each universal system.[101] *"That is the boundary, the témenos, which separates the sacred soil from the profane one, more or less like a mandala or mystic diagram which the vajravali or vajra belt circumscribes the consecrated surface: in fact as we will see later, the temple is, in its real signification, nothing other than a large mandala; and even for its construction the same regulations which must be followed to draw a mandala are valid."*[102]

The monasteries of Tholing, Nyarma and Tabo have very different dimensions and shapes, regarding the space inscribed by their walls. No clear, formal concept can be seen in any of the three monastery complexes, such as the monastery complex of Samye still shows today (see Fig. 479, page 332). What the enclosure walls and the access concepts looked like at the time of the foundation can only be clarified rudimentarily, due to the structural extensions and changes that have occurred over the centuries. Both in Tholing and in Tabo, the area enclosed by the surrounding wall is almost rectangular, and the wall runs essentially in parallel with the orientation of the Main Temples. This can also be assumed for Nyarma on the basis of the preserved wall fragments, although no remains can be found here concerning the course of the ancient boundary wall on the west and north sides.

101 BRAUEN 1992: 31.
102 TUCCI 1988b: 22-23.

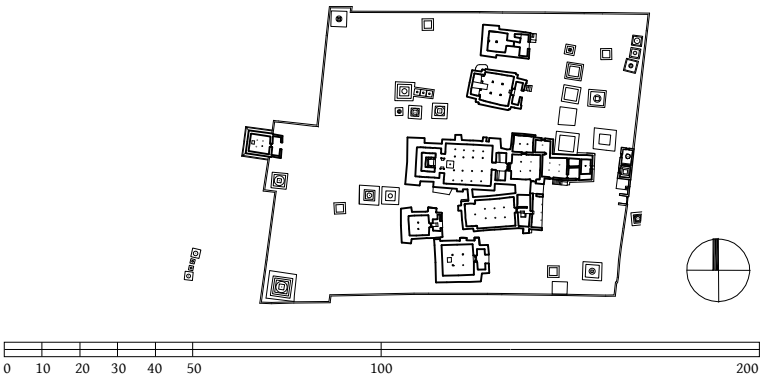


Fig. 485 Site plan of Tabo in 2002, surrounded by a wall that encloses an area, which extends over a length of up to 103 metres along the east-west running wall and up to 87 metres along the north-south running wall. The only entrance to the chos-´khor is located on the east side. © Neuwirth & Auer, TU Graz 2020.

Fig. 486 The surrounding wall on the southeast side of Tholing´s Main Temple. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – ©MAO G. Tucci.

Fig. 487 The remains of the surrounding wall of Nyarma´s sacred compound. The wall fragments in various lengths are 0.60 to 0.80 metre thick and between 1.20 and 2.90 metres high. The upper edge and bottom zone of the homogeneous brick wall have been strongly eroded by weathering, but some plaster layers are still visible. Neuwirth 2003.

Fig. 488 The surrounding wall on the north side of Tabo´s sacred compound shows a patchwork of different techniques and heights on the outside. Tucci expedition, E. Ghersi 1933. ©_Museo delle Civiltá – ©MAO G. Tucci.

The main temple generally forms the centre of the monastery complex, as Samye shows particularly clearly in his conception. This is also the case in Tabo, even though the later extensions on the west side probably changed the course of the wall. In Nyarma, this assumption means that the enclosed monastery area was originally extended further to the north and west, although the other preserved temple ruins are located to the south of the Main Temple. One reason for this could be that the area on the north side is bordered by the lake, which made it impossible to erect temples in this area. The Main Temple of Tholing is not really located in the centre, but on the west side of the area; nevertheless, the original arrangement could have been similar to that in Samye, which is often referred to as a model for Tholing.

Today, Tholing has the largest extension among the monasteries documented here. The enclosure wall in Tholing extends over a length of up to 200 metres and a width of 145 metres and covers an area of 28,212 square metres. The portal on the southwest side, which was still visible in the 1930s, has disappeared today; there are different portals on the other three sides of the walls, but they are not arranged symmetrically within the area.
In Nyarma, the fragments of the surrounding wall are found on the east and north side and show an extension of at least 160 metres in length and 155 metres in width, so that the area covered was at least 24,800 square metres. Significant groups of chörten found on the west and north sides of the Main Temple suggest that the sacred space originally extended in this direction as well, although the surrounding wall is no longer present. Today, a road leads from the west up to the site. Old footpaths lead along the east side of the area, where the main portal was probably once located, as well as the entrance to the Main Temple.
The enclosure wall in Tabo encircles an area of 6.915 square metres, which is 103 metres long and 87 metres wide. Accordingly, the temples were arranged relatively close to each other on the site, in comparison to the arrangements at other two monasteries. The entrance is located in the middle of the eastern wall, and the portal was partially demolished during the restoration work of the ASI in the 1970s and then rebuilt somewhat wider.[103]
In the schematic plans of Francke from 1909 and Tucci from 1933, the entrance portal is found exactly in the central axis of the main temple. Today, its position has shifted slightly to the south, possibly due to the construction of the new residence building, which is directly adjacent to the outside of the east wall.[104] There is no evidence to suggest that there were other portals in the enclosure wall, although the photos from 1933 show many patches, for example, on the north side of the wall.

103 THAKUR 2001: 285.
104 FRANCKE 1999: 39; TUCCI 1988b: 24.

Fig. 489 The construction of the southeast surrounding wall of Tholing. The lower part is made of rammed earth, and a layer of clay bricks is found above a thin layer of stone slabs, which indicates a weathered row of chörten. Neuwirth 2007.

Fig. 490 The construction of the southern part of Nyarma´s surrounding wall. The preserved fragments of Nyarma´s boundary wall consist of a carefully assembled, originally plastered clay brickwork. Neuwirth 2003.

Fig. 491 The construction of the southwest corner of Tabo´s surrounding wall after the renovation. The lower half consists of stone masonry; layers of rammed earth are clearly visible above this. Auer 2003.

In terms of construction, the surrounding walls, which the Tibetans call *lcags-ri,*[105] are on average 2.00–3.00 metres high and 0.60–0.80 metre thick. They consist traditionally of a solid construction made of either air-dried clay bricks or rammed earth. Generally, rammed earth masonry has a greater wall thickness than brick masonry. The base zones often consist of natural stones with different forms, whereas the upper part of the brickwork is frequently made of stone slabs, which are attached with a layer of loam. In some cases, rows of small chörten are also placed on these stone slabs. In general, different constructions and structural changes indicate different building phases or site extensions.

An examination of the monastery wall in Tholing reveals many different phases, both in terms of its course and its technical construction. The older parts of the wall were mostly made of rammed earth, such as an extant part of the southeast wall, which shows the remains of a row of chörten above a layer of thin stone slabs. Along the northwest wall, there are different sections with slightly varying heights, whereby the older parts are made of rammed earth and the younger ones, of plastered clay brick walls. Some parts of the northwest wall were secured on the outside by supporting pillars. Parts of the wall on the southeast and northeast sides, where two of the portals are also located, were renewed or supplemented in the upper area during the restoration and equipped with a concrete layer over a leveled wooden construction. Most sections of the Tholing perimeter wall are whitewashed and painted with a red stripe toward the upper end.

In Nyarma, all preserved fragments of the former surrounding wall have a carefully assembled masonry made of air-dried clay bricks. These fragments are between 0.60 and 0.80 metre thick and between 1.20 and 2.90 metres high. Vestiges of the former clay plaster can still be found on some parts of the wall. The foundation is made of natural stone, and the lower and upper part of the walls are heavily weathered. How the walls were completed at the top can no longer be seen due to the erosion.

In Tabo, the homogeneity of the enclosing wall can be traced back to the last renovation. The lower half of the wall consists of stone masonry and the upper half of three to four visible layers consists of rammed earth. The upper end is not additionally covered. According to the new construction, the wall is only 0.35 metre thick and between 1.80 and 2.20 metres high. Historical photos show basically the same construction, but also show that a patchwork of different materials, formats and heights were used. Due to the complete renovation of the wall, no construction stages or other traces (e.g. former wall openings or building phases) can still be determined.

105 TUCCI 1988b: 22.

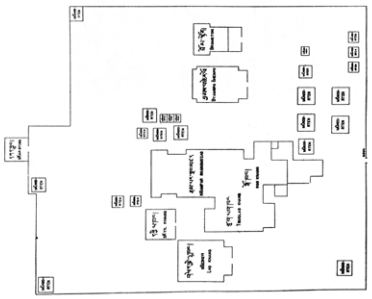


Fig. 492 Site plan of the Tabo monastery in 1909. Francke 1914: 39.

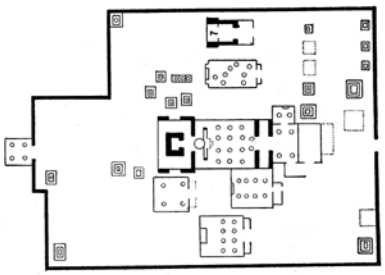


Fig. 493 Site plan of the Tabo monastery in 1933. Tucci 1935: 24.

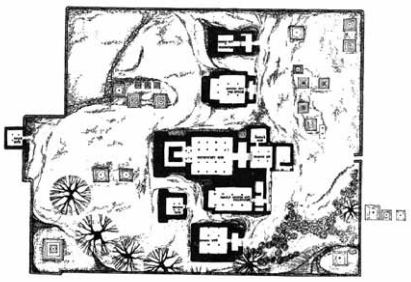


Fig. 494 Site plan of the Tabo monastery in the 1970s. Khosla 1979: 38.

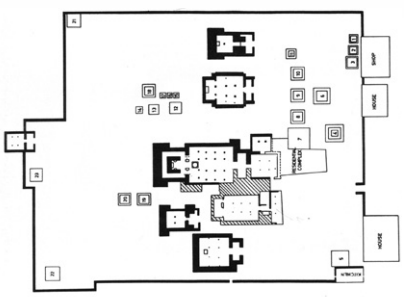


Fig. 495 Site plan of the Tabo monastery in the 1990s. Thakur 2001: 65.

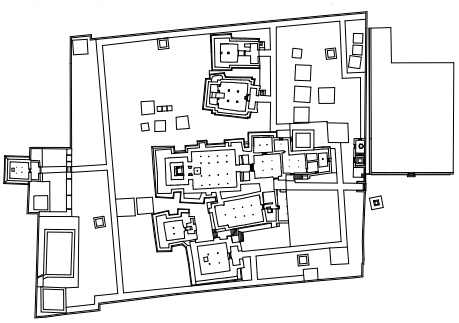


Fig. 496 Site plan of the Tabo monastery in 2002. © Neuwirth & Auer, TU Graz 2020.

THE DEVELOPMENT OF THE ENSEMBLES

The borders of the monastery districts have changed over the centuries mainly due to the fact that the monastery areas have grown over the centuries, meaning that more temples and chörten, and often residential buildings in the monastic community, were built around the early Main Temples. The location of each temple in relation to the Main Temple undoubtedly plays a hierarchical role, which is also related to the time of origin. An interdisciplinary cooperation with Tibetology and Art History scholars allows the assignment of the individual construction phases, since the individual buildings can only be dated precisely if the historical sources, inscriptions and the iconography of the interior decoration are analysed.

The building documentation and the data obtained from this enable us to classify architectural references, such as certain typological features and techniques belonging to a particular construction phase, and to place them in a larger context with other comparative material. In this respect, our aim is to visualise the development and thus the influence and interactions with regard to form and building techniques in the respective period.

The monastery of Tabo serves as a good example of how the entire complex has changed over a long period of time since the consecration of the Main Temple, as extensions and the construction of further temples have occurred. Although Tabo is relatively well-researched from the point of view of Art History and Tibetology, only the Main Temple with the foundation date of 996 AD is exactly dated by an inscription. The dating of the individual temples is often uncertain and, in some cases, controversial among experts; therefore, such dating must be critically examined in every case.
Detailed descriptions and architectural sketches (as well as historical photos) have been available since Hermann Francke's visit in 1909. The first more comprehensive, architecturally relevant documentation was published in 1979 by Romi Khosla and in 2001 by Laxman S. Thakur.
The available site plans show the monastery buildings starting in 1909, when Francke visited the monastery. The building stock in 1909, which included not only the temples but also all the chörten, corresponds to that seen in 1933, when Tucci visited Tabo. At that time, the site was also documented photographically by Ghersi. Thus, the development of the complex is believed to have begun with the foundation of the Main Temple, which was built in 996 CE as a freestanding structure on the site and with its vestibule facing east. Thanks to the inscription present in the cella, we know today that it was restored as early as 1042, and this date is also used to date most of the temple's interior decoration.[106]

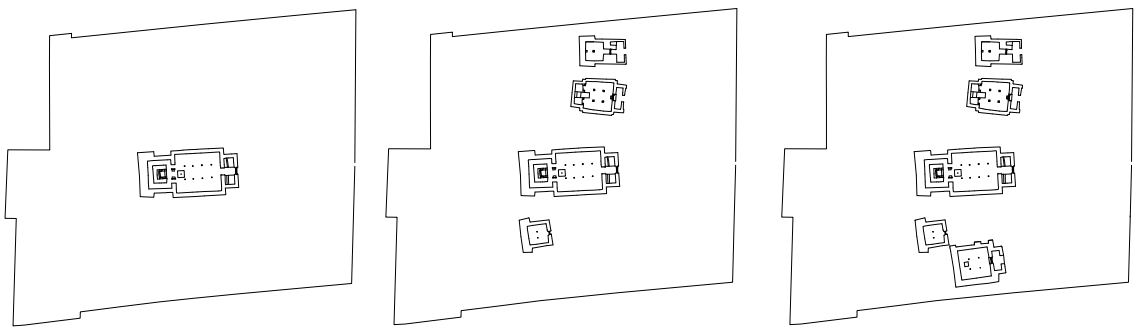
106 THAKUR 2001: 80; LUCZANITS 2004: 34.

Fig. 497 Building phases of Tabo. © Neuwirth & Auer, TU Graz 2020.

The second building phase is thought to have taken place around 1100, due to the architectural form of specific buildings. These are two temples that are located on the north side of the Main Temple, the Small 'Brom-ston Temple and the Maitreya Temple, as well as the Mandala Temple that is located on the south side of the Main Temple.[107] The similarities in form and technical design that can be observed between the Mandala Temple and the Small 'Brom-ston Temple, especially considering the construction of the massive western wall, which was carried out in the same form methods as the Main Temple, suggest that the Mandala Temple was built in this early phase. It is also possibly built at about the same time as the renovation of the Main Temple took place, even if the paintings show modifications dating from the 15th century.[108]

In the third phase, the Golden Temple was built on the south side of the Main Temple. It would be a logical component of the earlier, second phase, both in terms of its constructional design and the formation of the ensemble. On the basis of the paintings in this temple, the art has been attributed to the Gelugpa sect, whose activities in Tabo began in the second half of the 15th century. Therefore, the construction or restoration, as well as the interior decoration of the Golden Temple, can be dated to the period of 1450-1500.[109] In the fourth building phase, the Large 'Brom-ston Temple was erected between the Main Temple and the Golden Temple. Thus, a second, large assembly hall was built in the monastery, whose vestibule has only been preserved in an altered form. Based on stylistic considerations, this phase is tentatively attributed to the 17th century.[110] The spatial arrangement and construction are clearly structurally different from the temples built in the earlier phases, making this dating reasonable.

107 Around 1100, the Kings of Gu-ge patronized a great number of artists. From an art historical perspective, the Small 'Brom-ston Temple and the Maitreya Temple are dated according to the wood carvings on the doors in both temples, as well as the design of the stone bases of the supports. However, the paintings of the interior decoration and the seated Maitreya figure definitely date from a later phase. THAKUR 2001: 82-83.
108 For a detailed analysis of the iconography of the Mandala Temple, see HELLER 2017: 202-225.
109 THAKUR 2001: 84.
110 THAKUR 2001: 205-207.

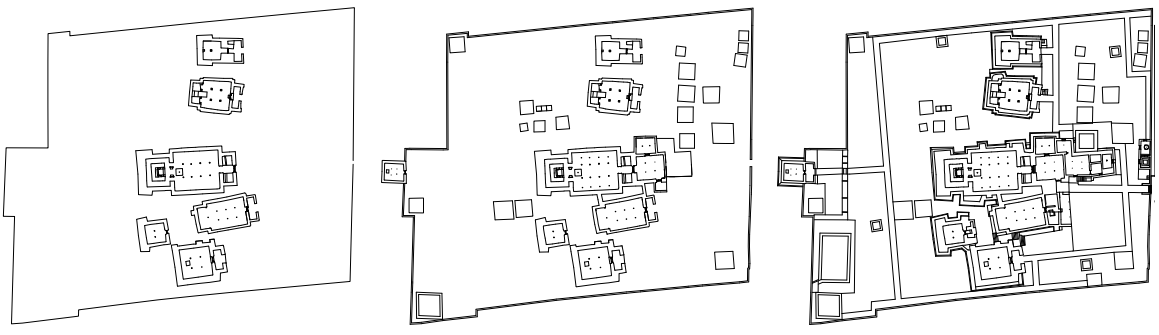


1. PHASE: FOUNDATION 996 2. PHASE: AROUND 1100 3. PHASE: AROUND 1500

The fifth phase corresponds to the state of the ensemble in 1909, which is depicted in the sketch by Francke in 1909, and essentially represents the existing structure that is still in place today. This phase includes the construction of the White Temple, which is located on the western side of the area, away from the other temples.[111] In addition, the so-called New Entry Hall was constructed at the end of the 19th century and was attached directly to the east of the Main Temple.[112] It opens to the old vestibule to the west and to the Protector Chapel to the north. Architectural evidence suggests that both structures were originally designed as single-storey buildings, but Ghersi´s photographs show that the upper floors definitely existed in 1933. At that time, the entrance to the Main Temple led through the new entrance hall. Both the sketches made in 1909 and the photos taken in 1933 show a fortified, covered area that is open to the east and leads to the door on the south side of the new entrance hall. As a structural consequence, the area between the Main Temple and the Large 'Brom-ston Temple was enclosed by two walls, making it impossible to walk around the temple.

Until the 1970s, when Romi Khosla visited the monastery, the Mandala Temple and the White Temple did not have a vestibule. The vestibule in the Large 'Brom-ston Temple was first extended between 1933 and the 1970s. According to Thakur, the site plan from 1990 was prepared before the restoration of the whole complex. This plan shows the Mandala Temple and the White Temple as already having a vestibule. The east wing in front of the Main Temple was also extended. The sixth phase shows the state of construction of the individual buildings after the monastery was comprehensively restored in 2002, which is described in detail in the documentary chapter (see page 173). The different phases of construction extend accordingly from the end of the 10th century to the beginning of the 21st century.

111 While Thakur dates the White Temple at around 1700 based on stylistic considerations, Rahula attributes its foundation to the 19th century. THAKUR 2001: 207-9; RAHULA 2013: 521.
112 THAKUR 2001: 211-14; RAHULA 2013: 523-25.



4. PHASE: AROUND 1700

5. PHASE: 1909/1933

6. PHASE 2002

Fig. 498 Building phases of Tabo. © Neuwirth & Auer, TU Graz 2020.

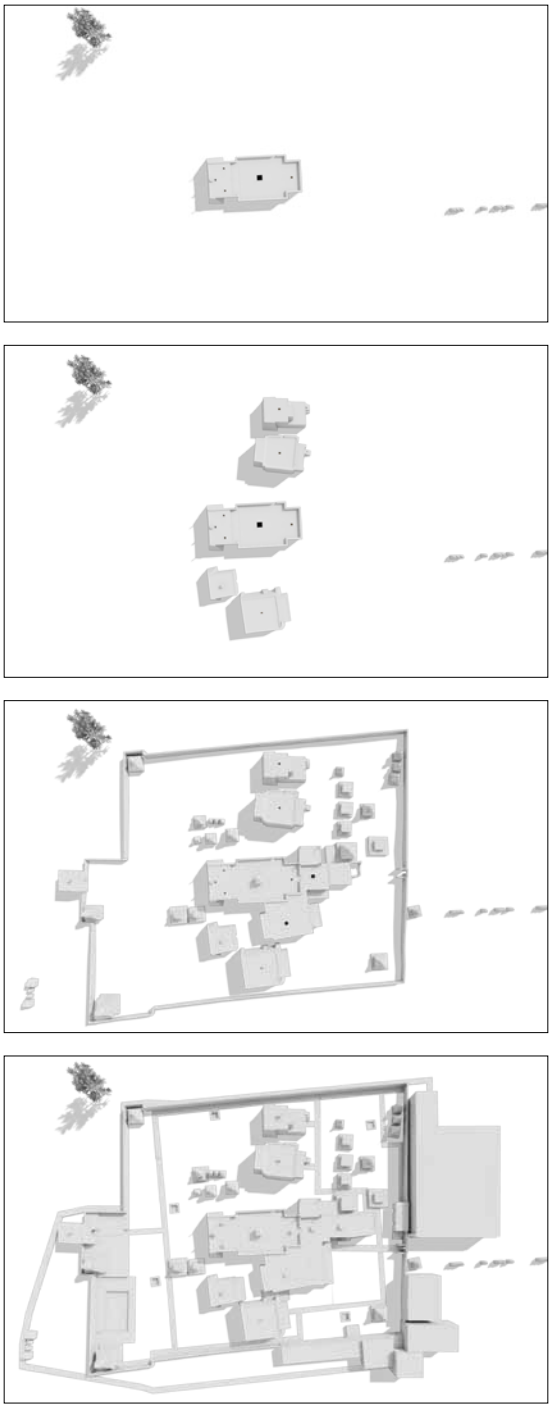
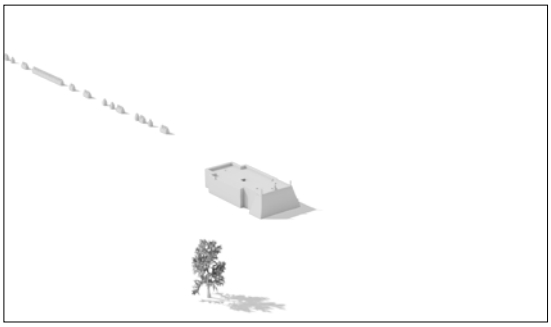
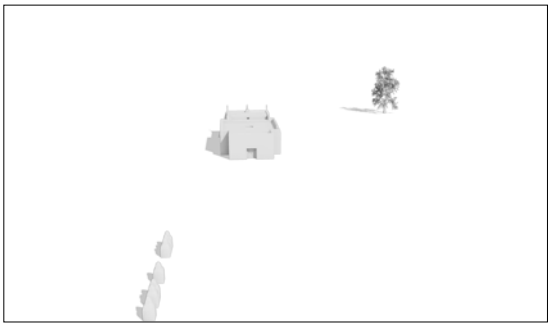
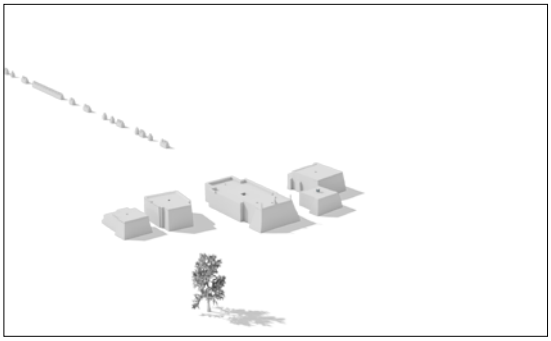
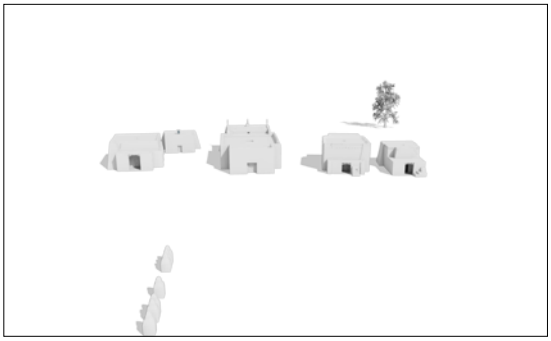
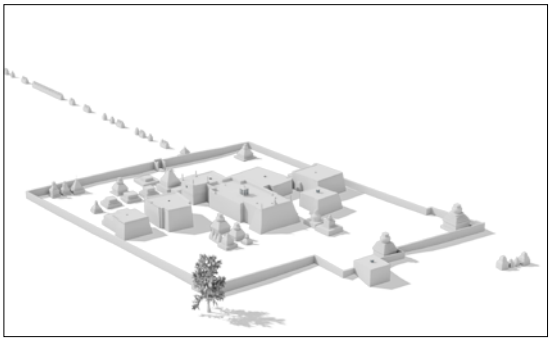
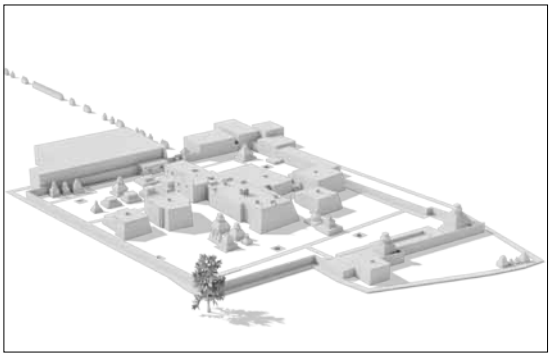
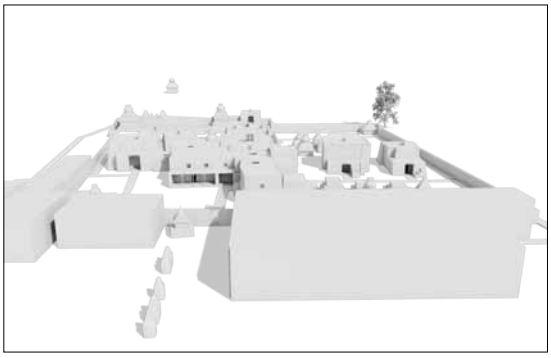


Fig. 499 The building phases of the monastery complex of Tabo show how the building density in the area has increased since the construction of the Main Temple in 996. On this side, the development as seen from above. Overleaf: The development as seen from northwest and from east. © Neuwirth & Auer, TU Graz 2020.

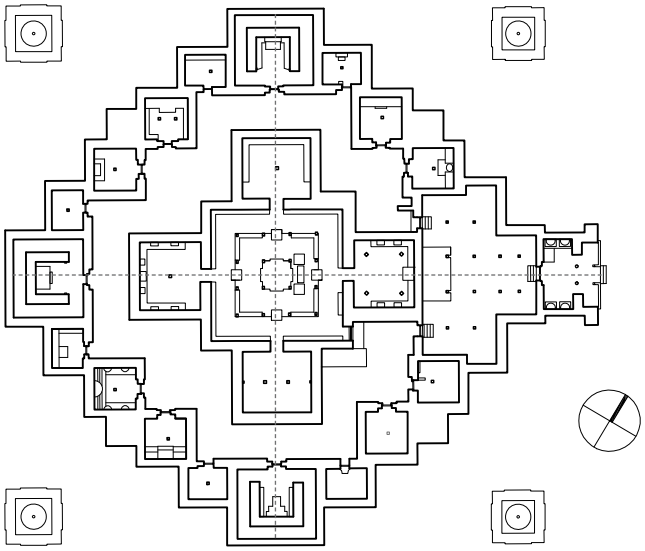


Fig. 500 The Main Temple of Tholing. The ground plan shows the rooms, which are organised along the two main axes: the vestibule in the northeast, the assembly hall, the ambulatory with the 17 circular arranged chapels and the inner core with its five chapels. © Neuwirth & Auer, TU Graz 2020.

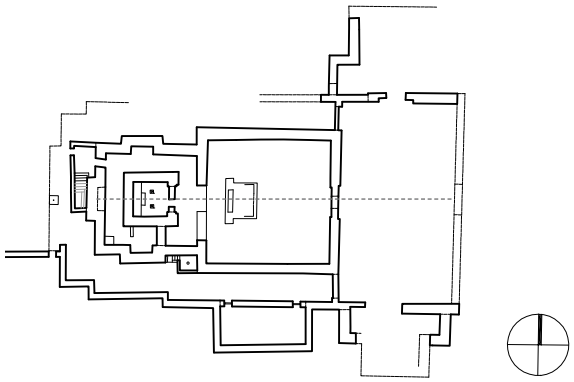


Fig. 501 The Main Temple of Nyarma. The ground plan shows the rooms, which are organised along the main axes: the courtyard in the east, which was once connected to an outer ambulatory, the assembly hall, the inner ambulatory and the cella in the west. © Neuwirth & Auer, TU Graz 2020.

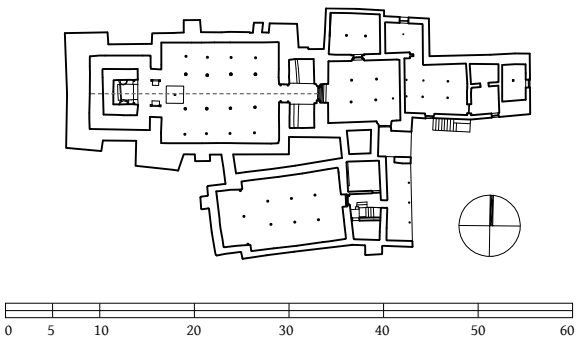


Fig. 502 The Main Temple of Tabo. The ground plan shows the rooms, which are organised along the main axes: the vestibule in the east, the assembly hall, the ambulatory and the cella in the west. © Neuwirth & Auer, TU Graz 2020.

DIMENSIONS AND TYPOLOGY

Carmen Auer

RELATION OF FUNCTION, SIZE AND TYPOLOGY

As the previous chapter has shown, the main temple, as the earliest and most important building of each monastery, is located more or less in the centre of the compound and forms the core of the sacred space. According to this hierarchy, the main temple is also the largest building in the monastery area and functions as a community assembly hall. This fact also shows that size and function are directly related to each other.
The Main Temple of Tholing is by far the largest of the buildings discussed here. It covers an area of 2,114 square metres, with the inner core covering 540 square metres. The Main Temple of Nyarma once covered 1,038 square metres in its original form, including the outer ambulatory and the lateral chapels (see page 375), whereas the inner structure covered 369 square metres. This inner structure once comprised the assembly hall and the cella with its ambulatory. The Main Temple of Tabo extended over 327 square metres in its first construction phase.

There are also significant typological differences among the three Main Temples in Tholing, Nyarma and Tabo. While the Main Temples in Tabo and Nyarma have a longitudinal spatial structure that is organised along a main axis, the Main Temple of Tholing is spatially organised around a centre, respectively, along two orthogonal main axes.

In both building types, the functional and ritual guidance through the rooms is similar, although the spatial concept of the mandala-shaped Main Temple of Tholing is much more complex than that of the Main Temples in Nyarma and Tabo. All three temples can be entered from the east side and, respectively, the Main Temple of Tholing can be entered from the north-east side. One reaches the largest room of the temple, the assembly hall via a vestibule or a courtyard. From there, one continues into the ambulatory, which leads around the inner sanctum and finally into the cella, which forms the core of the temples.

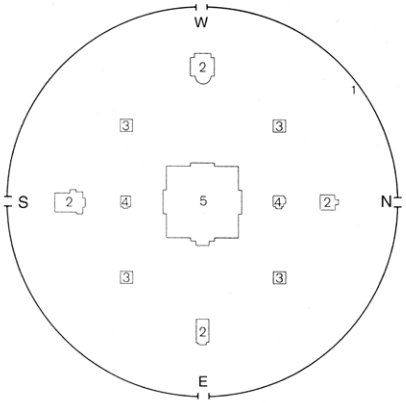


Fig. 503 Organisation of the site and a reconstruction of the 8th century Main Temple of Samye. The complex is clearly associated with the cosmic principle of Mount Meru. © Ethnographic Museum at the University of Zurich. Drawing: Peter Nebel, Brauen 1992: 31.

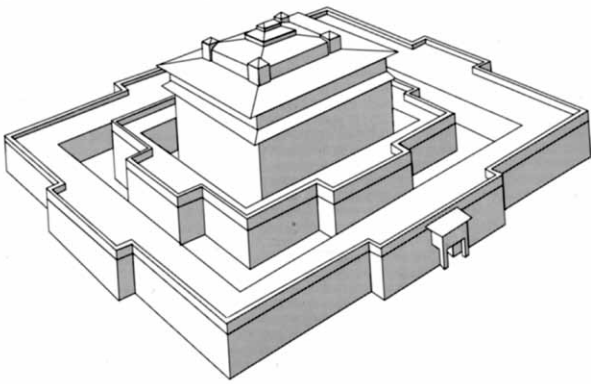
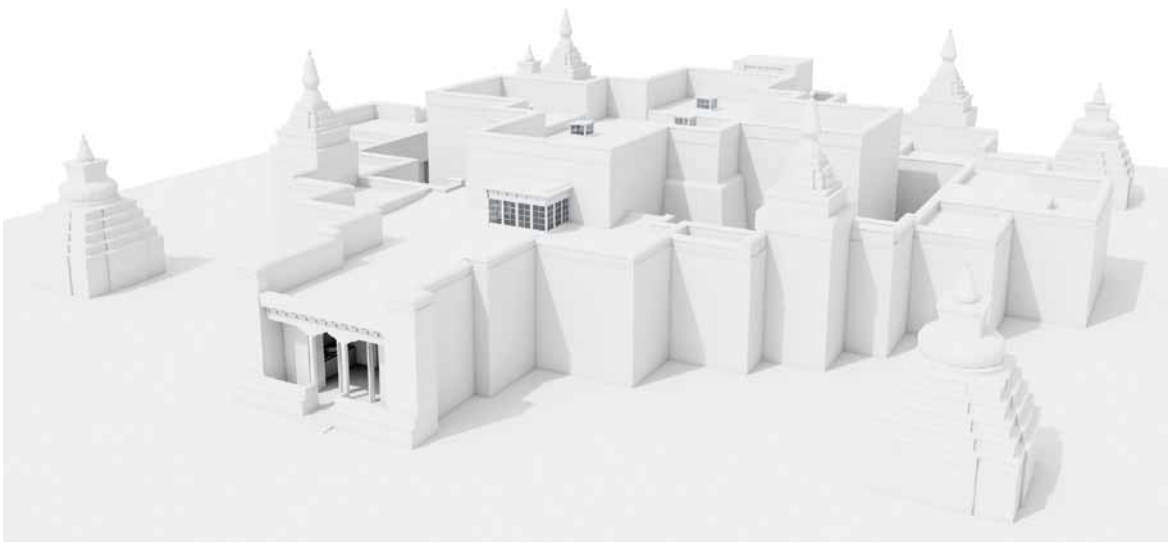


Fig. 504 Below: Spatial representation of the mandala-shaped Main Temple of Tholing, founded in the 10th century. © Neuwirth & Auer, TU Graz 2020.



The building type of the chörten represents a fixed component of the sacred canon of forms, appearing in various sizes and complexities in Tibetan Buddhism. Other than these chörten, only a relatively small number of temples were designed as central buildings, whereby this building type undoubtedly has a special significance.

The building type of the central building shows the architectural symbolism of Buddhism and its references to the Cosmic World Model in a unique way. These buildings are based on a mandala which symbolizes the world mountain Meru, the seat of the gods. According to its symbolism, the Holy Mount – where heaven and earth meet – lies at the centre of the world. Thus, the temple represents the heavenly palace and seat of the gods on the summit of Mount Meru and also symbolizes the centre, the axis and the hub of the universe.[113]
If the buildings are multi-stored, they symbolise the idea of the wandering spirit who tends to become one with the Cosmos. In this way, each complex corresponds to cosmic principles on all levels and reflects them outwardly. The idea of the mandala was, thus, translated not only into the floor plan, but also into the height development of the building. In Tholing, both the largest temple and the smallest temple – the Main Temple and the Golden Temple – were designed as central buildings. Both temples belong to the early foundations built in the 10th and 11th century, which underlines the importance of this building type in the early phase.

113 ELIADE 1994: 25; BRAUEN 1992: 18-22; AUER 2015: 126-31.

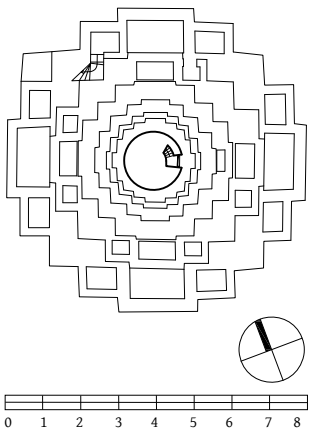
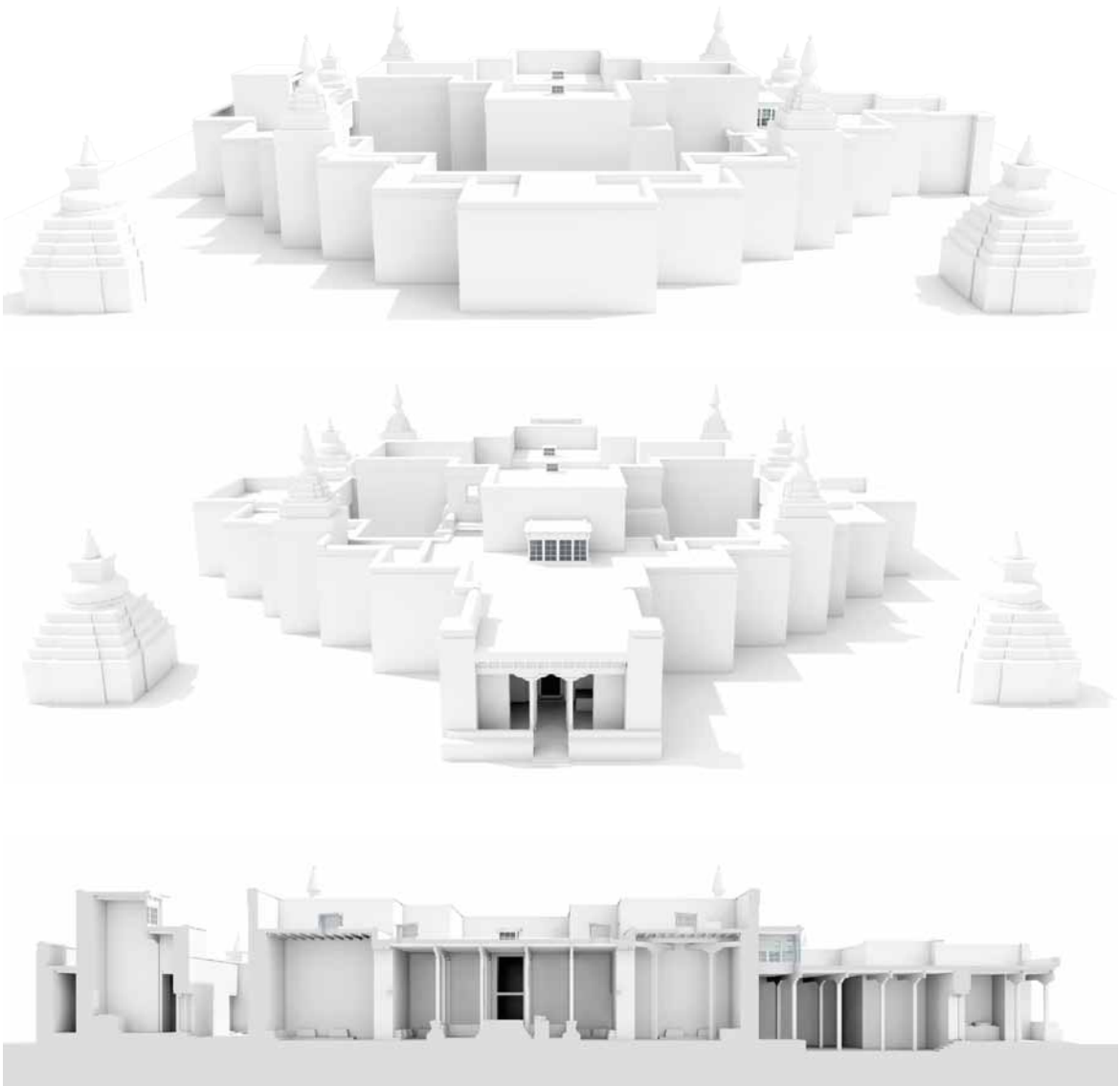


Fig. 505 The Changspa Chörten in Leh dates back to the 9th century. The floor plans show a mandala-shaped structure with seven storeys, diminishing toward the top. © Neuwirth & Auer, TU Graz 2020.

Fig. 506 The Main Temple of Tholing. The spatial representation is based on the documentation in 2007. Above: the southwest elevation. Middle: the northeast elevation. Below: the longitudinal section. © Neuwirth & Auer, TU Graz 2020.



Unlike the smaller types of central buildings, the Main Temple of Tholing (see page 34) has a complex spatial concept. This consists of an assembly hall, which is located in front of the central core with its five main chapels, as well as an open ambulatory with 17 symmetrically arranged chapels. The arrangement of the rooms along the two central axes emphasises the main cardinal points. The diagonals in between these points are reflected materially by the arrangement of four smaller chörten in the corners of the outer chapel ring and the four larger chörten outside the temple.

The hierarchy of the different areas of the temple is visualized by the arrangement and sizes of the rooms around the ambulatory. Although this temple has only one floor, the rooms are characterised by their different floor levels, room heights and raised attics. From a technical point of view, the number of pillars in the interior is determined by the maximum span of the ceiling beams, which measure generally between 2.50 and 3.50 metres. However, the arrangement of the pillars also determines the spatial organization of the interior and is, therefore, never random but deliberate.

The central room of the building contains 4 x 4 pillars, making a total of 16 supports, which leave the centre free and enable views into the side chapels along the axes of the cardinal directions. The maximum span here is between 2.50 and 2.90 metres. The fact that pillars are positioned as they were in the original state can be proved by referring to historical photos (see Fig. 46). Today, the arrangement of the pillars varies in the side chapels around the centre, although the four rooms have approximately the same size. The spans differ accordingly between 2.50 and 4.10 metres. In addition, the positions of the pillars in two of the side chapels blocks the view into the central room; thus, it can be assumed that there were originally two supports in each of the side chapels, which also correspond to the span in the central room. Even in the assembly hall, which is supported with 12 pillars today, the span distance of up to 3.80 metres is considerably wider than that in the central room. Therefore, an original arrangement of 16 pillars (in six rows) with an average span of 2.80 metres would be much more reasonable.

The positions, shapes and structures of the lanterns also changed during the reconstruction in the 1990s. The central lantern with its golden roof, which used to tower far above the roof, has disappeared (Fig. 27). Basically, the interior lighting was originally placed such that the main figures were lit through openings in the ceiling with lantern structures. Thus, lanterns were originally located above the main rooms (i.e. in the five central chapels), in the three main chapels of the outer structure located in the cardinal directions and above the figure in the assembly hall.

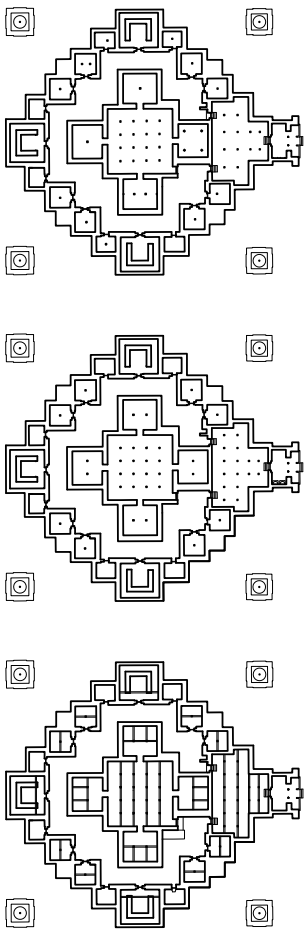


Fig. 507 Reconstruction of the original support system in the Main Temple of Tholing. Above: the condition in 2007, which is based on the restoration of the temple. Middle: the reconstruction of the former position of the supports in the interior. Below: the position of the main beams above © Neuwirth & Auer, TU Graz 2020.

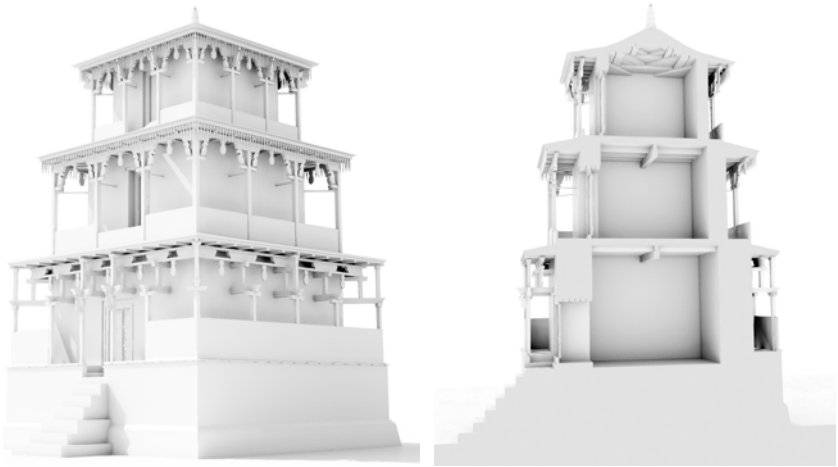
Fig. 508 Reconstruction of the Golden Temple as seen from the north. Beside the section, showing the inner structure of the three stories. © Neuwirth & Auer, TU Graz 2019.

The Golden Temple of Tholing (see page 34), was a relatively small but tiered building, presumably composed of three decreasing floors with multiple eaves. This pagoda-style monument, which can also be found in the Newār architecture in Nepal, can be viewed as a Buddhist chörten that has undergone architectural evolution, assuming the combined functions of a reliquary edifice, a place of worship and a temple.

The idea of the square or mandala is reflected in both the floor plan and the height development. The massive platform on which the temple stands has a side length of about 8.00 metres. The interior of the lower floor, which is still preserved today, has a side length of 3.60 metres and was originally just as high as wide, resulting in an inner space ratio of 1:1. If one assumes that the rooms on the two upper floors also have this space ratio, the side lengths of the interior were reduced to 3.10 metres on the first floor and 2.60 metres on the second floor. The outside galleries made it possible to walk around the room on each level, and the original total height was about 12 metres.

The three-storeyed temples of Alchi and Wanla in Ladakh, which were built in the 13th century, have similar spatial concepts as that seen in the Golden Temple of Tholing. The outer cubature is approximately the same size, although the room concepts vary. Instead of an outer gallery, they were equipped with niches on three sides and a vestibule in front of the central space.[114] As in the Golden Temple, the entrances to every floor are located above each other.

114 The square main room of the Sumtsek in Alchi has an outer side length of 7.60 metres, and an inner length of 5.80-5.90 metres. The total height over three storeys amounts 12 metres. The main room in Wanla has an outside side length of 7.00 metres, and an inside length of 5.40-5.50 metres. Its total height is 10 metres.



Unlike the Golden Temple of Tholing, the inner space seen on the different storeys in Alchi and Wanla is not separated by closed ceiling constructions, but kept open in the central area. This creates a visual connection between all three floors. This spatial concept is made possible by an inner supporting system that consists of four pillars each. This system extends over the two lower floors and supports the construction of the third floor. The character of the central building is weakened by the formation of a vestibule and the stronger emphasis of the rooms along the main axis. For example, there is a clear accent on the main niche opposite the entrance in both cases, which can also be seen from outside. The circumambulation outside is only possible on the ground level and on the top level.

The geometric analysis of the three-storeyed temples of Wanla and Alchi has shown that the planning process is based on a square grid, which provides structure for their floor plans as well as the height development. The geometric principles show that the builders clearly referenced the Indian principles of temple construction, which is also based on a square, the so-called Vastu-Purusha-Mandala (see page 363). The spatial organization seen in both temples is determined by a mandala consisting of 8 by 8 units, i.e. a total of 64 units, which provides significant structure for both the construction and the decoration of the building.[115]

115 AUER 2015: 133-147.

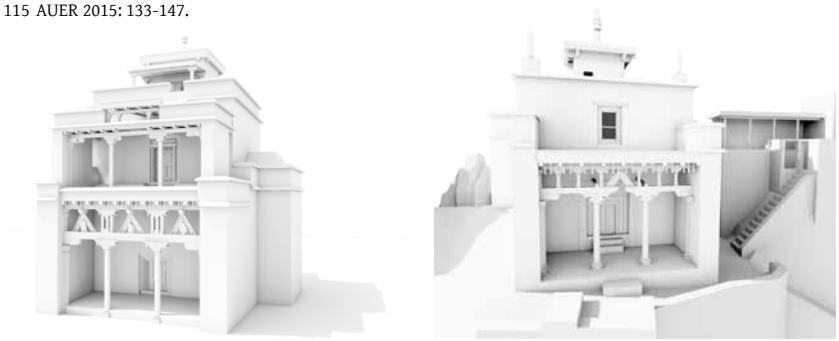


Fig. 509 The Sumtsek of Alchi (left) and the Temple of Wanla (right) were designed as three-storeyed buildings in Ladakh in the 13th century. Spatial representations are based on the documentation in 2003 © Neuwirth & Auer, TU Graz 2020.

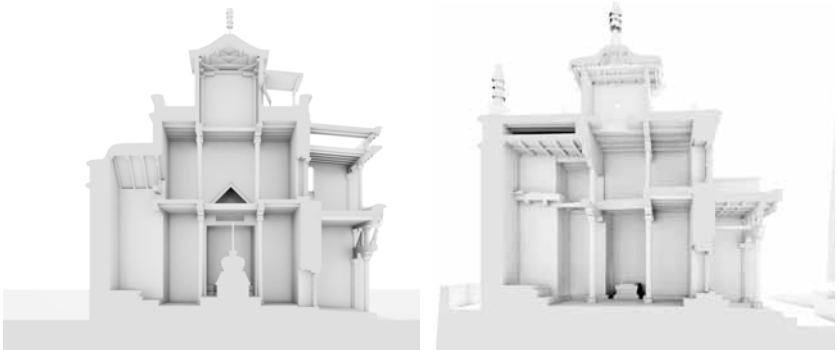
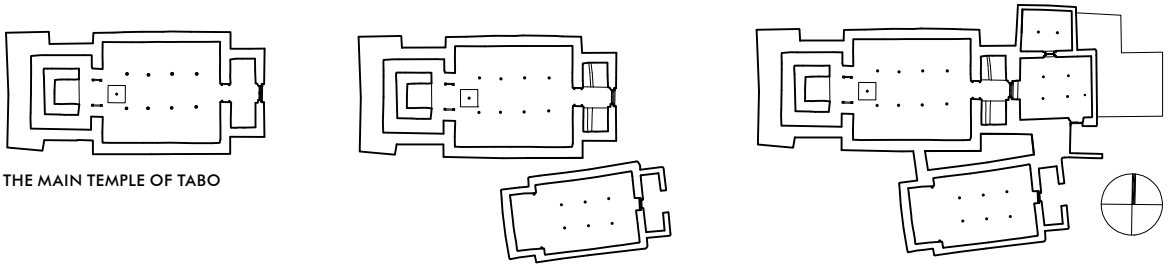
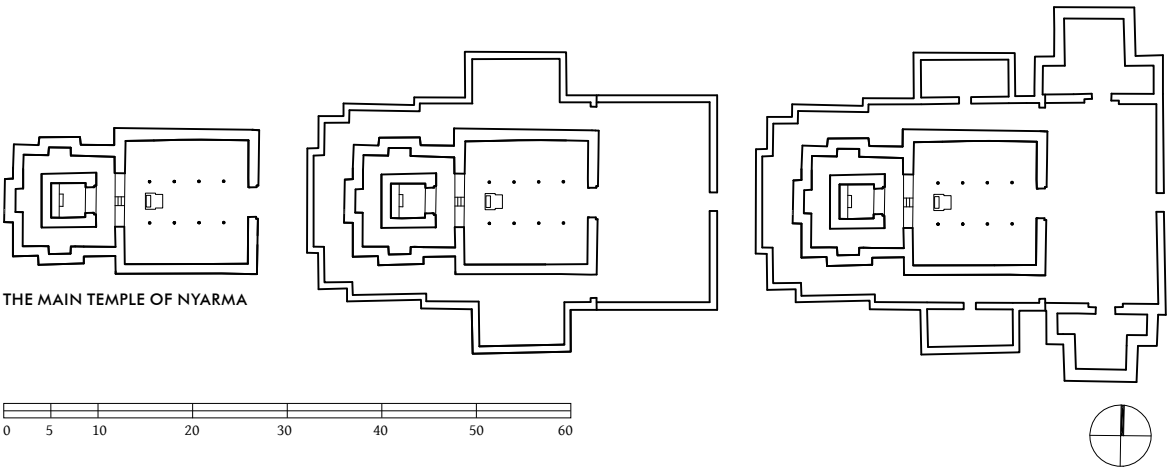


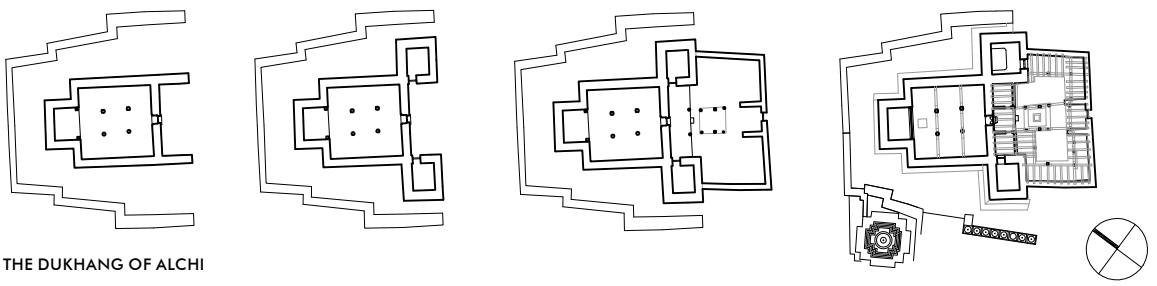
Fig. 510 The longitudinal sections of the three-storeyed Temples of Alchi (left) and Wanla (right) in Ladakh, based on the documentation in 2003 © Neuwirth & Auer, TU Graz 2020.



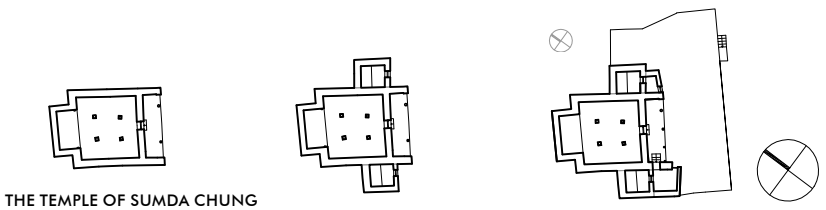
THE MAIN TEMPLE OF TABO



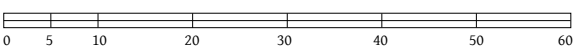
THE MAIN TEMPLE OF NYARMA



THE DUKHANG OF ALCHI



THE TEMPLE OF SUMDA CHUNG



THE MAIN TEMPLES OF TABO AND NYARMA

The Main Temple in Tabo (see page 187) has been preserved in its entirety in good structural condition. The original spatial concept has remained relatively unchanged up until today. The different spatial zones, which are lined up along the middle axis, can be clearly distinguished, whereby the middle axis is always the axis of symmetry. The vestibule on the east side is somewhat narrower than the main structure. From this vestibule, the assembly hall opens up generously, allowing a free view toward the sculpture of the four-fold Vairocana, which is standing on the west side of the room. The assembly hall is spatially structured by two rows of four supports each, above which the main beams of the ceiling run transverse to the middle axis of the temple. Behind this hall and passing through the three-part portal, one enters the area of the ambulatory, which leads around the cella of the temple. This structure is clearly differentiated from the hall, both in terms of its overall width and its room height. This differentiation makes the different zones of the temple clearly visible from the outside.

The ruins of the Main Temple of Nyarma (see page 131) show great similarities to the Main Temple of Tabo, both in terms of size and spatial organisation. The Main Temple of Nyarma, like Tabo, dates back to the early foundation phase. It is also directly oriented from east to west and consists of an entrance area, an assembly hall and a cella with a circumambulatory. The square assembly hall is slightly larger than the one in Tabo, with a side length of 13 metres.[116] The traces at the top of the walls indicate the locations of the four main beams of the former ceiling construction, which was supported by two pillars each. The distance between the pillars would, thus, be 4.30 metres on average. Due to the consoles above the pillars and on the walls, the free span of the main beams is reduced to about 3.30 metres, which is technically practicable and does not present any problems if the ceiling beams are sufficiently thick.
With its side length of 3.60 metres, the cella of Nyarma is also considerably larger than the cella in Tabo.[117] The ambulatory leads around the cella, as in Tabo, and is equipped with symmetrically arranged niches on three sides. This increases the width of the corridor from 2.00 to 2.70 metres.[118] Moreover, the cella and the inner ambulatory in Nyarma are situated much higher than the floor of the assembly hall. This also indicates that the spatial concept must have been more complex than that seen in the Main Temple of Tabo. Remains of a vestibule are not visible in Nyarma, although a partially roofed area in the courtyard could have functioned as a vestibule.

116 The assembly hall of Tabo is 10.70 metres wide and 12.50 metres deep, the distance between the pillars was originally 3.50-3.80 metres.
117 The cella in Tabo has a side length of 2.60 metres.
118 In comparison, the corridor in Tabo is relatively narrow with a width of 1.40 metres.

Fig. 511 Overleaf: Reconstruction of the building phases of the Main Temple of Tabo. The former freestanding temple was extended over the centuries by additional structures on the east and south side. © Neuwirth & Auer, TU Graz 2020.

Fig. 512 Overleaf: Reconstruction of the building phases of the Main Temple of Nyarma. An outer gallery with side chapels and an open courtyard on the east side were located around the main structure. © Neuwirth & Auer, TU Graz 2020.

Fig. 513 Overleaf: The building phases of the Dukhang in Alchi show that the assembly hall and the vestibule were also joined by two side chapels and an open courtyard, which were added in the course of later extensions. © Neuwirth & Auer, TU Graz 2020.

Fig. 514 Overleaf: At the temple of Sumda Chung, the two side chapels were also added later. © Neuwirth & Auer, TU Graz 2020.

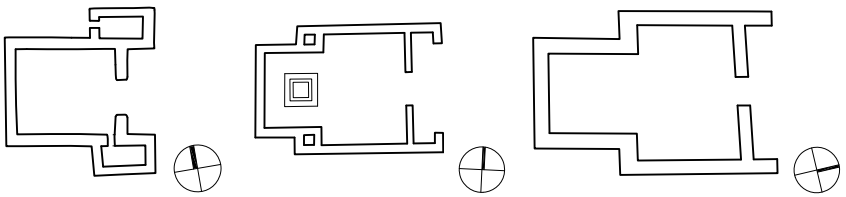


Fig. 515 The remains of three medium-sized temples. Left: the floor plan of the Temple of Basgo. Middle: the Temple No. 5 of Nyarma. Right: the Temple No. 2 of Nyarma © Neuwirth & Auer, TU Graz 2020.

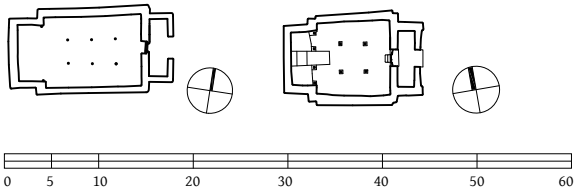


Fig. 516 Reconstruction of the floor plan of the Large ´Bromston Temple of Tabo, which today forms the southern part of the Main Temple Complex. Next to it, the floor plan of the Maitreya Temple of Tabo. © Neuwirth & Auer, TU Graz 2020.

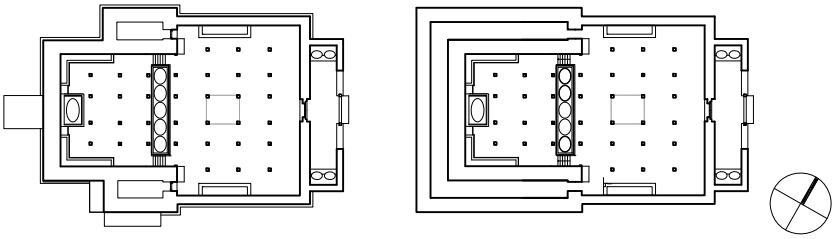


Fig. 517 Floor plan of the Red Temple of Tholing and, next to it, the reconstruction of the former circumambulatory around the apse. © Neuwirth & Auer, TU Graz 2020.

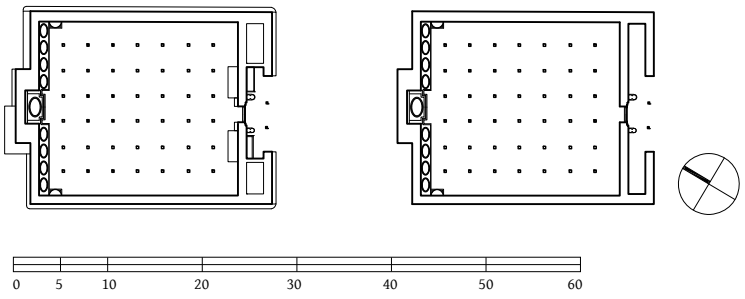


Fig. 518 Floor plan of the White Temple of Tholing with the reconstruction of the former vestibule. © Neuwirth & Auer, TU Graz 2020.

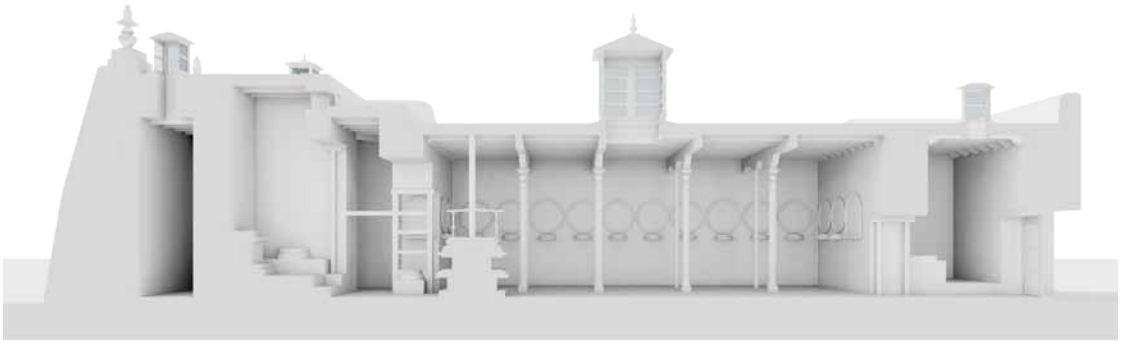
The remains of an outer circumambulatory around the Main Temple of Nyarma are also remarkable. These consist of a room-high wall that repeats the outer form of the temple on the south side at a distance of about 3.00 metres. Fragments of a similar wall are also documented near the oldest temple of Alchi in Ladakh on the west side of the Dukhang, which has been dated to around 1200 (Fig. 513). Although no other structural indications of a walled, external circumambulation around the Main Temple of Tabo exist today, it can be assumed that this building element belongs to the formal canon of the early temples, which is only preserved in some cases.

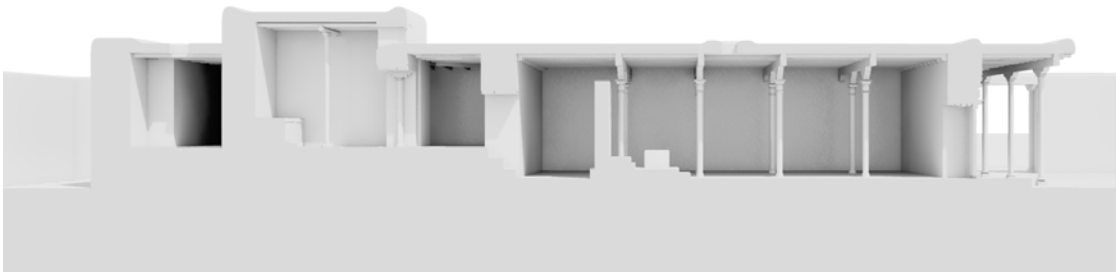
The analyses of the geometry show that the courtyard of Nyarma, which is connected to the outer circumambulatory, is most likely part of the original concept (see page 375). A courtyard occurs in a similar form in front of the vestibule of the Dukhang in Alchi (Fig. 513). The construction phases show, however, that the courtyard here is definitely a later extension.

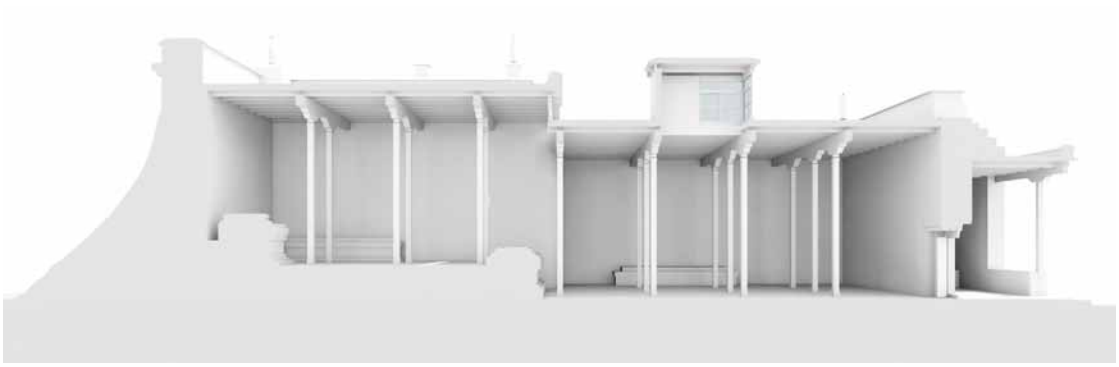
Since the second half of the 11th century, different variations of an apse or an apse niche on the opposite side of the entrance replace the cella with its circumambulatory . Examples of this development are shown in the temples of Alchi (Fig. 513) and Sumda Chung (Fig. 514) in Ladakh. The apse in these two temples forms a rectangular niche on the west wall, whose floor and ceiling construction lies above the levels of the hall, allowing the altar area to be lit from above.[119] The Temples No. 2 and No. 5 of Nyarma show variations on this development with different proportions; in both cases, the apse is quite spacious in relation to the hall (Fig. 515). In Tabo, only two temples of the monastery have a rectangular apse, namely, the Maitreya Temple and the Large 'Brom-ston Temple (Fig. 516). In these cases, the apse is only slightly smaller than the hall. But while the apse of the Maitreya Temple is clearly separated from the hall by its height, the apse in the Large 'Brom-ston Temple is conceived as an extension of the hall, because the floor and ceiling of the hall and apse have a continuous level.

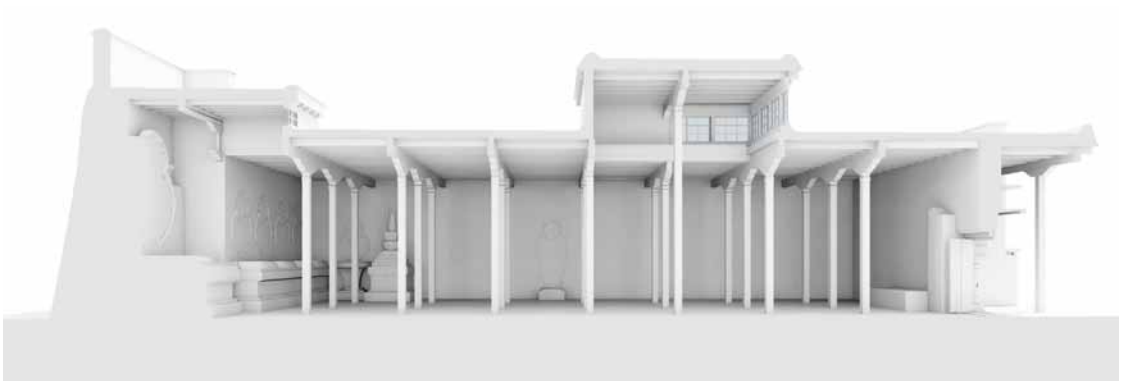
Another repetitive element can be found in the symmetrically arranged side rooms, which appear in different variants. The large side rooms at the Main Temple of Nyarma, which are connected to the outer circumambulatory, could also be part of the original room program in terms of their technical and formal designs. The remains of the rather irregular side chapels on both sides of the open courtyard on the east side, however, were undoubtedly a later addition (Fig. 512). The Temple No. 5 of Nyarma, which formally belongs to the earlier temples of the former monastery complex, also has two small, square chambers, each with a side length of only 1.00 metre, which are located between the hall and the apse area. These were obviously never accessible.

119 The side lengths in the assembly hall of Alchi and Sumda Chung are 7.60 and 6.50 metres.









These chimney-like constructions were technical interventions to reinforce the corners of the building. Whether they also had a functional or ritual character is unclear. The temple ruin of Basgo, the iconography of which is related to that of the Main Temple of Tabo, also has two side rooms that could obviously be accessed from the assembly room. The structural evidence clearly indicates that these rooms are part of the original spatial programme (Fig. 515).

At the temples of Alchi and Sumda Chung (Fig. 513 and Fig. 514), both side chapels are located directly next to or beside the vestibule. These side rooms clearly date back to later building phases. On the other hand, the two small rooms of the Red Temple at Tholing, which are located on both sides of the apse, are the walled remains of a circumambulation that once led around the raised cella (Fig. 505).

Regardless of its size, the three-part division of the building in the vestibule, assembly hall and apse areas is essentially also retained in the later temples. This division was clearly manifested in the early temples both by the arrangement of the rooms and in the three-nave character of the halls. Examples of such later temples include the Red Temple (Fig. 517) and the White Temple of Tholing (Fig. 518), and the Large ´Brom-ston Temple of Tabo (Fig. 516), even if the effect of the interior spaces is different due to the arrangement of the pillars and the room heights. The increasing width of the assembly halls seen in the Red Temple and the White Temple of Tholing requires the use of more supports for the ceiling construction in both temples, dividing the interior into up to seven naves, but the concept of the central aisle and the open visual axis to the apse area is maintained in all cases.[120]

In the typological development, the area of the apse becomes an independent spatial zone inside the temple, which is almost as large as the assembly room and whose floor level is intentionally elevated. An example of this formal development can be seen in the Red Temple in Tholing, whose side rooms next to the apse indicate a former ambulatory. This ambulatory originally led from the assembly hall around the raised area of the apse as a presumably covered passage. In this case, the apse together with the ambulatory is even wider than the assembly hall (Fig. 505). In contrast, the apse of the White Temple at Tholing is only a small niche. The side areas of the vestibule in the White Temple, which are now walled up, could also have been used as separate side rooms in the past (Fig. 517).

Fig. 519 The spatial sections show the heights of the different room zones in the cella or apse, the assembly hall and the vestibule. Above: the Main Temple of Tabo. In the second line a reconstruction of the Main Temple in Nyarma. In the third line: the Red Temple of Tholing. Below: the White Temple of Tholing. © Neuwirth & Auer, TU Graz 2020.

120 The Red Temple Tholing has a size of 18 x 12.30 metres in the assembly hall, with a room height of 5.95 metres, and a size of 11.90 x 12.30 metres with a room height of 6.10 metres in the apse area. The ceiling is supported by a total of 28 pillars. The White Temple Tholing has a floor area of 18 x 21 metres and is 4.85 metres high. The ceiling is supported by a total of 42 pillars.

Fig. 520 Floor plan of the Small ´Brom-ston Temple of Tabo.
Hall 5.10 m x 4.93 m, 5.10 m high, 1 pillar.
Wall thickness 0.80 m, 0.50 m (vestibule), west wall 1.65 m.
Ratio of side length to height 1:1:1.
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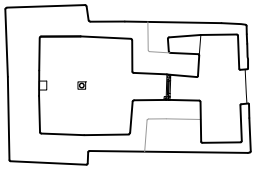

Fig. 521 Floor plan of the Mandala Temple of Tabo.
Vestibule 3 m x 2 m, 2.50 m high.
Hall 5.30 m x 5.30 m, 3.80 m high, 2 pillars.
Wall thickness 0.90–1.10 m, western wall 2.10 m.
Ratio of side length to height 4:4:3
© Neuwirth & Auer, TU Graz 2020.

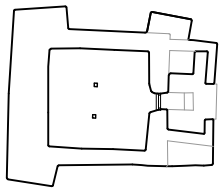

Fig. 522 Floor plan of the Maitreya Temple of Tabo.
Vestibule 5.90 m x 1.80 m, 2.16 m high.
Hall 7.80m x 7.80 m, 5.90 m high, 4 pillars.
Apse 5.60 m x 2.60 m, 6.30 m high.
Wall thickness 0.80–1 m.
Ratio of side length to height 4:4:3.
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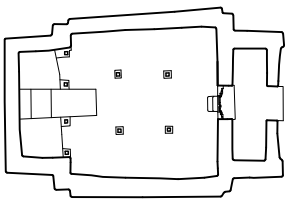

Fig. 523 In comparison the reconstruction of the floor plan of the Dukhang in Alchi.
Hall 7.50 m x 7.70 m, 4.50 m high, 4 pillars. Apse 3.40 m x 2.70 m, 4.40 m high.
Wall thickness 0.80–1 m.
Ratio of side length to height 5:5:3.
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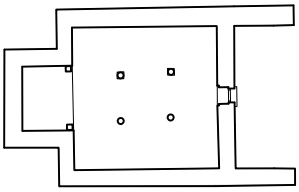

Fig. 524 Floor plan of the Golden Temple of Tabo.
Vestibule 5.40 m x 2 m, 3.40 m high.
Hall 8.10 m x 8.30 m, 5.30 m high, 4 pillars.
Wall thickness 1–1.80 m, west and south wall 1.70–1.80 m.
Ratio of side length to height 3:3:2.
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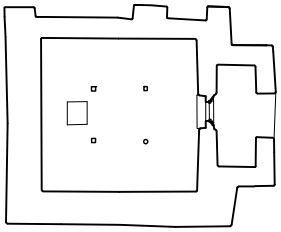

Fig. 525 Floor plan of the White Temple of Tabo.
Hall 4.70 m x 5.40 m, 2.30 m high, 4 pillars.
Wall thickness 0.60–0.80 m.
Ratio of smaller side length to height 2:1.
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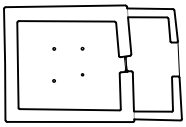
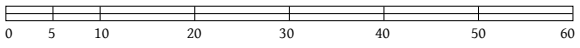




MINOR TEMPLES AND CHAPELS

In addition to the Main Temples, a number of smaller temples are found on the areas of the monastery, which date from different construction periods. These temples can be differentiated by their size and proportions, on the one hand, and their spatial organisation and function, on the other hand. The number of supports that are used to fulfil the constructional requirements can also be used to classify them. This number corresponds to the size of the temple, but can also have a symbolic meaning. All these temples consist essentially of an approximately square room, which is usually flanked by a vestibule on the east side. The vestibule is often considerably smaller than the main room, but can also be adjoining at the same width and with various heights. In some temples, an apse is spatially formed on the side opposite the entrance, as is usual in the building type of the assembly hall. The rooms in the larger of these temples could have been used as the assembly rooms of the monastery, while the smaller temples might have been used as chapels for initiation or veneration.

Concerning the temples of Tabo, some significant, technical pieces of evidences suggest that the building phases should be re-interpreted. Indeed, the Small ´Brom-ston Temple and the Mandala Temple, despite their small sizes, show the technically unfounded construction of a reinforced west wall, which runs like a bracket around the corners of the building. This construction already occurs in the same form at the Main Temple of Tabo and is not repeated in any of the other temples. This constructive-symbolic reference to an essential building element of the Main Temple supports early dating from a constructive point of view. We could assume that both temples were built around 1100, even if the painting of the Mandala Temple, for example, has been dated to the 15th century (see page 341).

The spatial configuration in both temples is also similar. The interior of the Small ´Brom-ston has both a side length and room height of 5.10 metres, corresponding to a room proportion of 1:1:1. The interior of the Mandala Temple has a side length of 5.30 metres and a height of 3.80 metres, corresponding to a proportion of 4:4:3. The masonry in the vestibules in both temples have asymmetrical areas, indicating that later alterations or additions were made. We know that the Mandala Temple had no vestibule until 1970. So, it is quite obvious that the existing vestibule in the Small ´Brom-ston Temple was also not part of the original concept or was later rebuilt in a modified form. This idea is also supported by the fact that the wall thicknesses of both temples, which measure 0.90-1.00 metre in the area of the halls, are reduced to as little as 0.50 metre in the area of the vestibules.

The Maitreya Temple of Tabo is one of the larger temples in the ensemble and corresponds to a typology of a small assembly hall. The three spatial zones are clearly visible from the outside. These zones consist of the vestibule, a high hall with four pillars and an apse. The wall thicknesses are relatively homogeneous with 0.80–1.00 metre. The vestibule is low and provides a stronger contrast to the spatial impression of the hall, which has a side length of 7.80 metres and a height of 5.90 metres, corresponding to the spatial ratio of 4:4:3. The apse is even higher with 6.30 metres and the idea of the ambulatory is also varied here, as one can walk around the seated figure in the apse. The dramaturgy of the spatial zones is further enhanced by the different floor levels; this is particularly effective when descending five steps from the vestibule into the hall.

The complexity of the floor plan and the spatial proportions suggest an early dating in the 12th century. If one compares the floor plan with the Dukhang in Alchi (Fig. 522), which is dated around 1200, certain similarities are striking, such as the formal design of the apse and the size of the square hall with its four pillars. At the same time, refined construction details are evident, such as the unusual emphasis on the Maitreya Temple's corners.

In comparison, the Golden Temple of Tabo is a little larger, but much simpler. It consists of an almost square interior without an apse and a clearly lower vestibule; thus, it is not divided into three room zones like other assembly halls. The wall thicknesses of 1.00–1.10 metres conspicuously increase to 1.80 on the west and south walls; these layers of thickness were probably added later. The square hall with its four pillars has side lengths of 8.10 and 8.30 metres, respectively, and a room height of 5.30 metres. Thus, it is somewhat lower in relation to the Maitreya Temple, which corresponds to a room proportion of 3:3:1.

The White Temple of Tabo, which was undoubtedly constructed later, obviously had no vestibule before the 1990s. With an interior size of 4.70 x 5.40 metres and a room height of only 2.30 metres, the spatial proportion between smaller side length to room height is approximately 2:1. At the same time, the structural thickness of the wall (i.e. an average of 0.60 metre) also decreases significantly. The ceiling beams are relatively small in size, making the support of the four pillars useful from a structural point of view.

In examples like the Main Temple of Tabo, whose room parts demonstrably originate from one construction phase, the use of different masonry results in an even wall thickness of 1.00-1.20 metres, even in the area of the vestibule. An exception is the use of masonry in the west wall, which is 2.40 metres thick due to the conical reinforcement of the wall. The same construction is 1.65 metres thick at the Small ´Brom-ston and 2.10 metres thick at the Mandala Temple.

If we compare this results with documentations of other temple buildings, some of which are even smaller than those discussed here, we see that the wall thickness of freestanding temples from the early phase is hardly less than 0.80–0.90 metre. For larger buildings, a wall thickness of about 1.00–1.10 metres is common. The presence of a massive, homogeneous formation of masonry and plaster layers with a high technical quality indicates that these belong to the same construction phase. In this way, the wall thicknesses and surface texture serve as good indicators, allowing us to analyse later extensions and different construction phases of a building. For example, the masonry of the early, free-standing Main Temple of Tabo is 1.00–1.20 metres thick, while the walls of the Protector Chapel are only 0.50–0.70 metre thick. The walls of the New Entry Hall are also inhomogeneous with a wall thickness ranging from 0.50–0.90 metre.

If one observes the typological development of the individual buildings, the minor temples are more difficult to classify than the assembly halls. In these halls, the spatial organisation begins with a relatively complex form and then becomes increasingly simple in terms of its spatial organisation. The interiors of the minor temples of Tabo, for example, all have an approximately square layout. The side lengths are between 4.70 and 8.30 metres, and the ceiling construction will be supported by one, two, or four pillars – even if the room is almost the same size. What is evident is that the spatial proportions have changed in the course of the development, and the ratio of side length to room height has changed, thus the rooms became increasingly lower. In the Small ´Brom-ston, the spatial proportion between interior room length and room height corresponds to the ratio of 1:1:1; in the Mandala Temple and in the Maitreya Temple, to 4:4:3; in the Golden Temple, to 3:3:2; and in the White Temple, to 2:1.

A homogeneous, relatively large wall thickness together with a room proportion of 1:1:1 or 4:4:3 are indications for rather early dating in this respect. However, a comparison of the typologies shows how long the early, traditional spatial forms, which have been adapted to the ritualistic and functional changes and conditions, remained dominant in the temple construction of this cultural area.

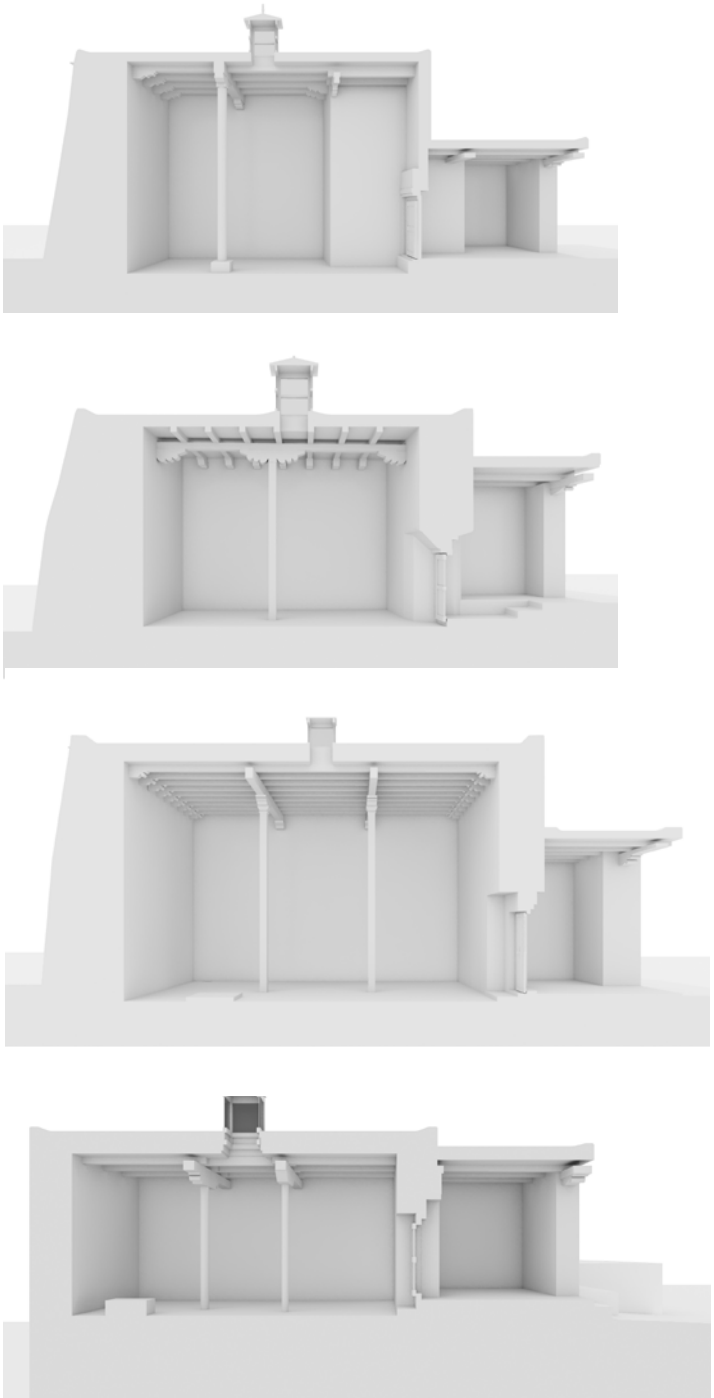


Fig. 526 The longitudinal sections show the different room proportions and heights. The spatial proportions change in the course of the development, and the ratio of room height to side length decreases. From the top and down: The Small ´Bromston Temple, the Mandala Temple, the Golden Temple and the White Temple of Tabo. © Neuwirth & Auer, TU Graz 2020.

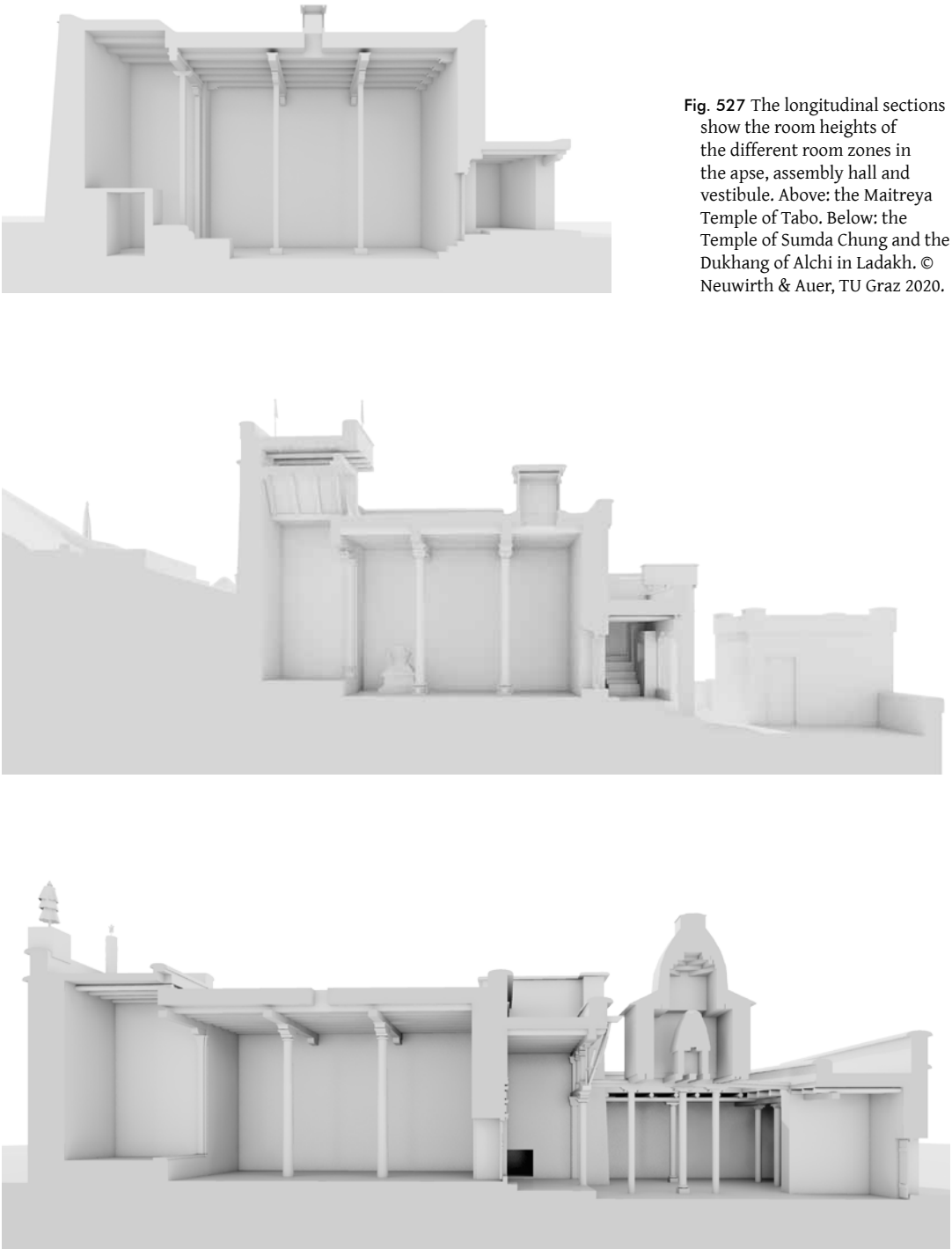


Fig. 527 The longitudinal sections show the room heights of the different room zones in the apse, assembly hall and vestibule. Above: the Maitreya Temple of Tabo. Below: the Temple of Sumda Chung and the Dukhang of Alchi in Ladakh. © Neuwirth & Auer, TU Graz 2020.

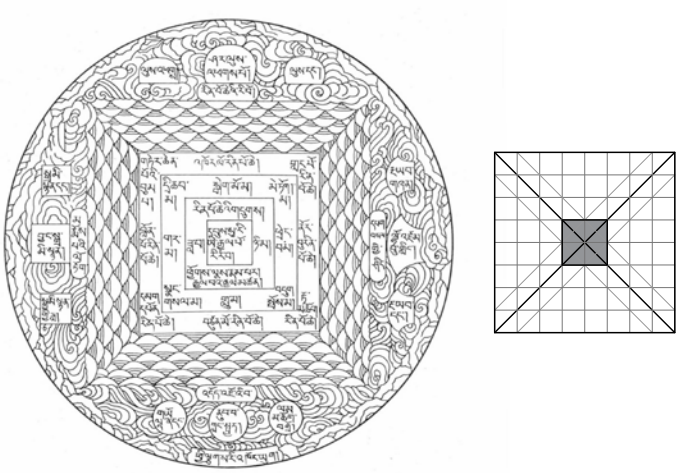


Fig. 528 This block print shows the universe in the form of a mandala with Mount Meru in the centre. The structure of the centre corresponds to a square diagram of 8 x 8 units, with the innermost area comprising 2 x 2 units. See JACKSON 1988:38.

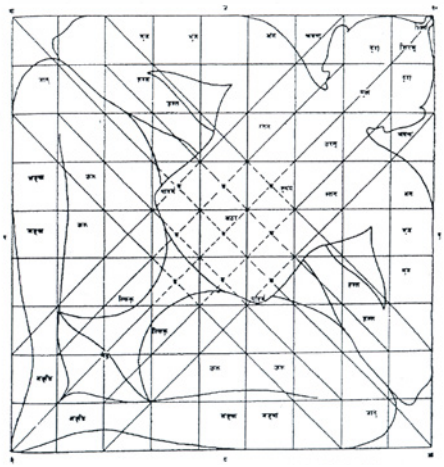


Fig. 529 The Vastu-Purusha-Mandala consists of 81 square parts as described in Varāhamihira's Bṛhatsaṃhitā. The puruṣa or personified cosmos is the superhuman entity which manifests itself as an illusion (vastu) when sacrificed. The puruṣa is pressed into a square form and is held in place by gods lying on its body. According to Indian tradition, the Vastu-Purusha-Mandala represents the form in which order, as opposed to chaos, exists See MEISTER 2003: 265.

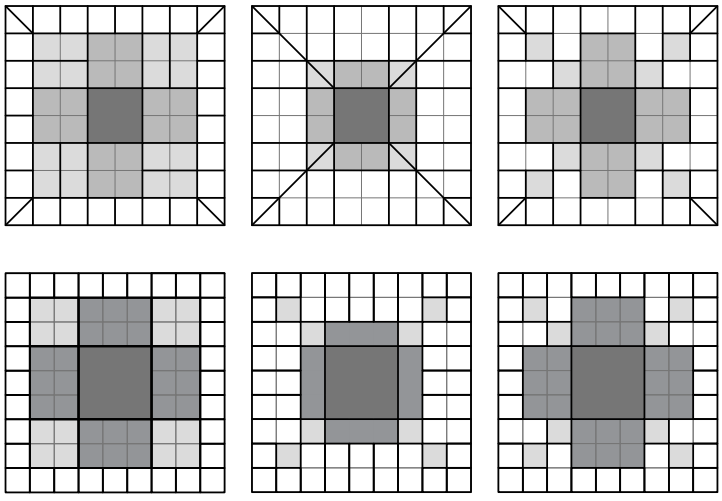


Fig. 530 Vastu diagrams with variations of the the maṇḍūka mandala (8 x 8) and the paramaśāyin mandala (9 x 9). The centre is always occupied by Brahmā, who is surrounded by 44 deities. The outer row is always occupied by 32 deities. The size and the assignment of the gods to the squares may vary according to the description, although the principle that the zone hierarchy decreases from the centre and outwards remains largely unchanged. See KRAMRISCH 2007: 86-88.

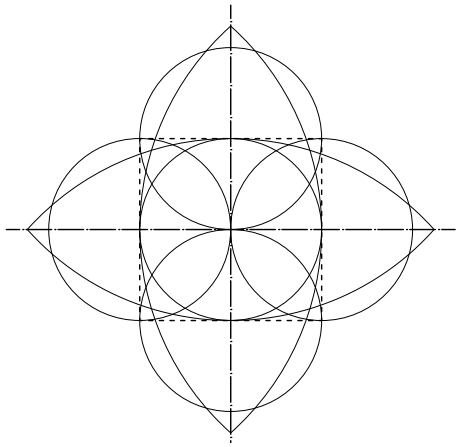
THE TEMPLE AS THE REFLECTION OF A COSMIC PLAN

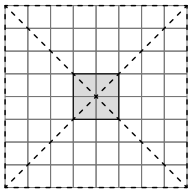
The significance of the square as the defining geometric figure that underlies sacred buildings of Tibetan Buddhism is already evident in early temple buildings. As the analysis of individual buildings in Ladakh showed, the inner structure corresponds to a geometric diagram. This is important with respect to the organisation of their floor plans, as well as for the height development.[121] Thus, the results clearly reference the Indian principles of temple construction, the so-called Vastu-Purusha-Mandala. The basic form of the Vastu diagram is always a square, and the division of the structure is also performed on a square grid, which determines the building elements.[122]

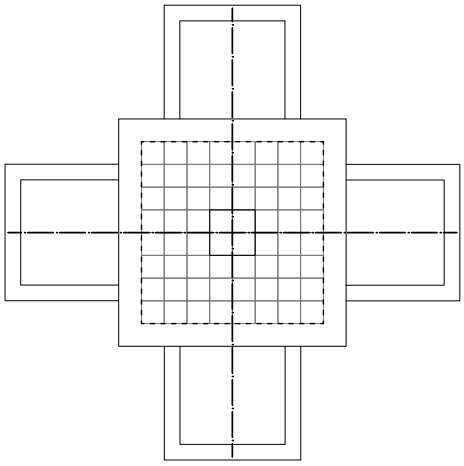
The results of the analyses performed on the basis of our plan documentation show that such a grid, under consideration of certain rules of application and execution, also serves as the basis of the spatial configuration of the early temple buildings discussed here. First, however, we need to clarify which kind of diagram or mandala was used in each case and identify which principles became decisive during the building process. Starting with the floor plan, the grid that shows the greatest correlation with the existing building can clearly be identified.

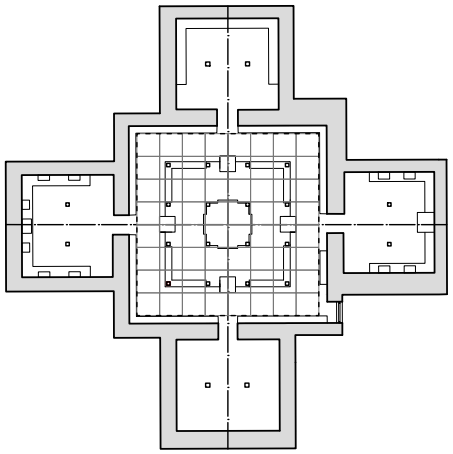
It is helpful to proceed methodically from the central area of the building outward. According to its importance, it has normally been given the greatest attention during the planning. The following investigations will show that the Main Temple of Tholing, as well as the Main Temples of Nyarma and Tabo, are based on a mandala of 64 units in their central areas. The size of the square in which the 8 x 8 grid is inscribed is variable. In the main temples examined here, the side lengths of the mandala measure 12.80 metres in Tholing, 12 metres in Nyarma and 10.40 metres in Tabo. The sizes of the individual units of the mandala accordingly have side lengths of 1.60 metres (Tholing), 1.50 metres (Nyarma) and 1.30 metres (Tabo), respectively.[123]
The lines of the grid and the basic size of the units, as well as their part-sizes, continue to determine the basic structure of the temples. A similar method is still used to produce thangka paintings today, where a coordinate grid on a smaller scale is used as the basis for the drawings of different representations.[124]

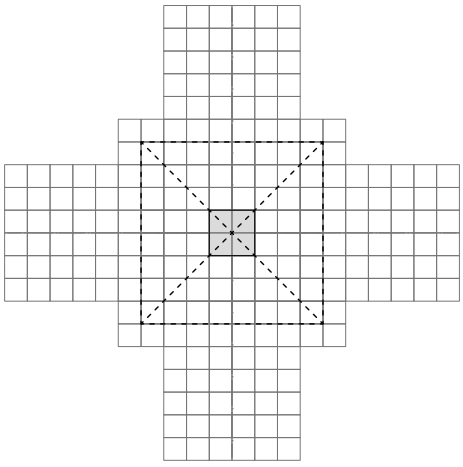
121 AUER 2015: 133-147.
122 The first detailed efforts to analyse the planning basis of the Hindu temples with the help of written sources were made by Stella Kramrisch as early as the 1920s. She also deals with the subject of how the two main types of the vastu diagrams, the maṇḍūka (8 x 8 units) and the paramaśāyin (9 x 9 units) were developed. KRAMRISCH 2007: 46-50, 85-97.
123 Regarding the specialized terminology of Tibetan measures the size of these units correspond to 3 *gru mo*. The units of measurement used in Tibet are finger width (Tib. *sor*), span (Tib. *mtho*), cubit (Tib. *gru mo*) and bow length (Tib. *gzhu*). 12 *sor* make up a *mtho*, 2 *mtho* make up a *gru mo* and 4 *gru mo* make up a *gzhu*. It is important to realize that the units has no absolute values; they were merely used to indicate proportional relationships within each sacred representation. JACKSON 1984: 50.
124 The basic unit of this grid is sor. JACKSON 1984: 50.

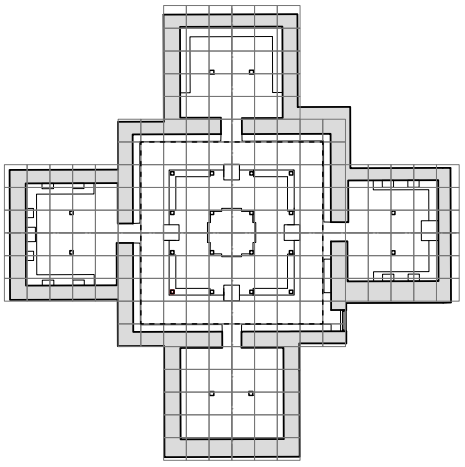












PLANNING PRINCIPLE OF THE MAIN TEMPLE OF THOLING

The complexity of the Main Temple of Tholing, which was developed around a cruciform core, shows the geometric structure on which the building is based in an exemplary manner. After the main axes and the dimension of the central space of the temple were determined, the structure was developed step by step from inside to outside.

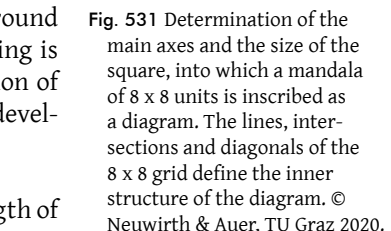


Fig. 531 Determination of the main axes and the size of the square, into which a mandala of 8 x 8 units is inscribed as a diagram. The lines, intersections and diagonals of the 8 x 8 grid define the inner structure of the diagram. © Neuwirth & Auer, TU Graz 2020.

The 8 x 8 grid inscribed in the central space of the temple has a side length of 12.80 metres and consists of 64 units, each with a side length of 1.60 metres. The lines of the grid define the size of the central pedestal of the main figure with 2 x 2 units, as well as the figure pedestal running around the main figure with the adjacent 12 pillars, which support the ceiling construction. Since the lines and intersections of the grid are spatially understood as lines of force, they should not be built upon directly. This rule becomes clear when one examines the position of the pillars as well as the course of the pedestals, which always are positioned directly beside the lines and intersections of the grid.

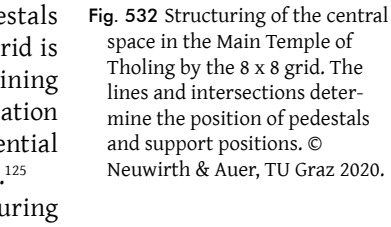


Fig. 532 Structuring of the central space in the Main Temple of Tholing by the 8 x 8 grid. The lines and intersections determine the position of pedestals and support positions. © Neuwirth & Auer, TU Graz 2020.

The walls of the central sanctuary with its surrounding figured pedestals are defined by another row in the size of a unit, whereby the 8 x 8 grid is extended to a 10 x 10 grid. The entrances to the cross-shaped adjoining chapels, as well as their defined proportions correspond to the continuation of the basic grid by 4 x 4 units each inside the rooms, and a circumferential row of units for the wall thicknesses and the pedestals along the walls.[125] This method of implementation continues to be observed in the structuring of the entire building with remarkable consistency. Thus, the extension and layout of the circumambulation around the inner building core is defined by the lines of the grid as well as by the configuration of the outer chapel ring and the assembly hall and its vestibule on the east side (Fig. 534). The deviations from the lines of the basic grid, as can be seen in the width of the outer chapels and the assembly hall, are determined by part-sizes of the basic units, comprising mainly 1/2 units (0.80 metre) and 1/3 units (0.53 metre).

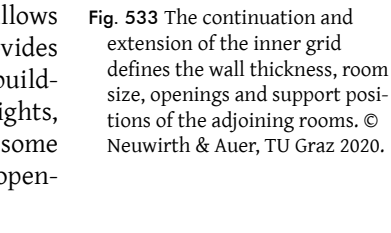
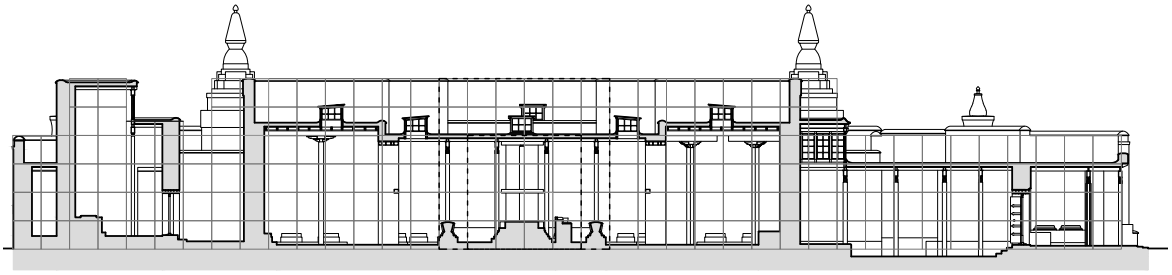
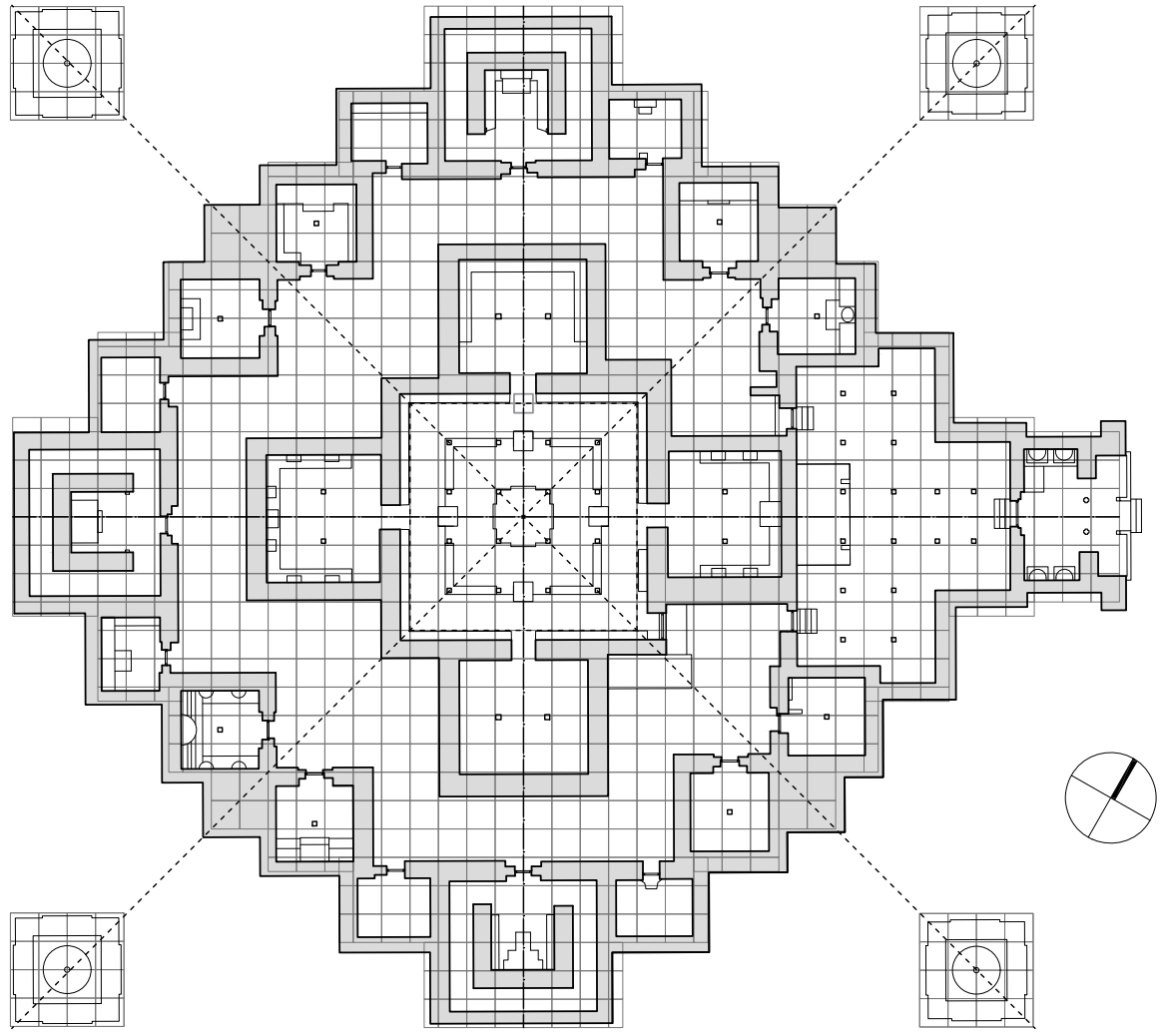


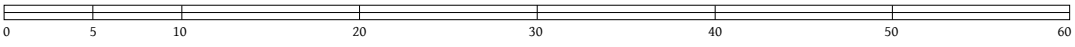
Fig. 533 The continuation and extension of the inner grid defines the wall thickness, room size, openings and support positions of the adjoining rooms. © Neuwirth & Auer, TU Graz 2020.

This additive approach, which develops from the centre and outward, allows the entire building to be clearly structured, on the one hand, and provides enough space for variations, on the other hand. The grid on which the building is based is also clearly reflected in the development of the room heights, although it must be assumed that the floor levels have changed in some areas. Further similarities can be seen in the dimensions of the door openings and in the height of the attics.

125 Deviations in the sizes of symmetrically arranged rooms or in the wall thicknesses are interpolated with regard to this analysis. These deviations were caused by construction techniques, on the one hand, and by restorations, on the other hand.



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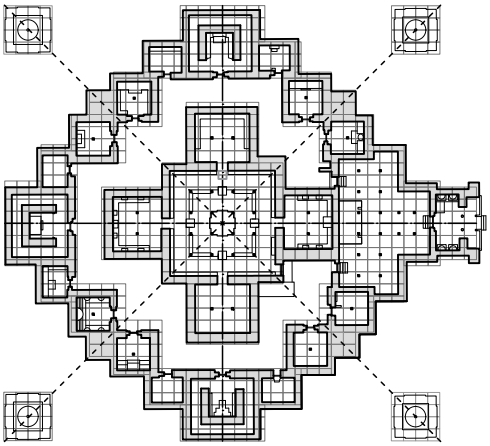
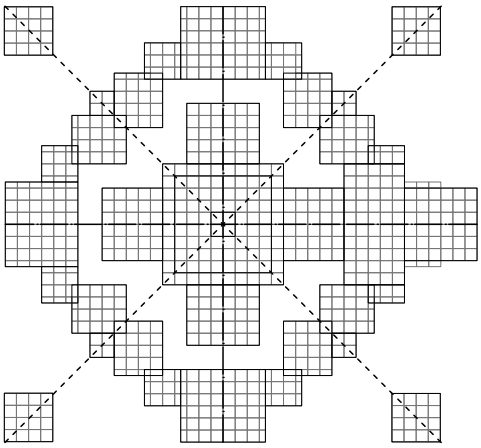




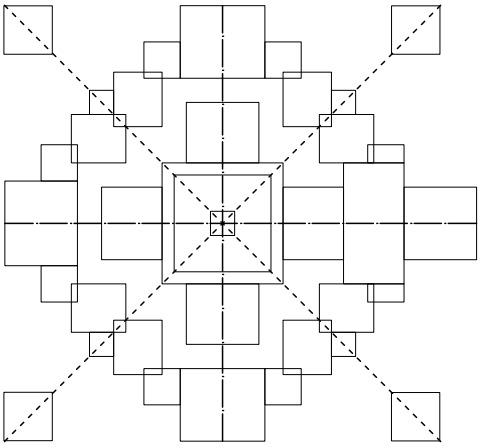


Fig. 534 Overleaf: Section and floor plan of the Main Temple of Tholing with the reconstruction of the original support position. The grid structures both the central core and the circumambulatory and outer chapel ring. The square space in the centre comprises 8 units, a row with one unit defines the walls, and the adjoining chapels comprise 6 x 5 units. The ambulatory is two, respectively in the diagonal, or three units wide, and the three larger of the surrounding chapels, which lie along the main axis, comprise 6 x 7 units. Deviations from the lines of the basic grid, as in the width of the outer chapels, are determined by the part-size of 1/2 unit. The chörten which are marking the outer corners in the diagonal directions are also defined by 4 x 4 units. In the development of the heights, four units correspond to the room height in the core of the temple, and two units correspond to the height of the attic above. The three outer main chapels are six units high, the assembly hall is three units high and the overlying attics comprise one more unit. © Neuwirth & Auer, TU Graz 2020.

Fig. 535 The additive extension of the mandala with 8 x 8 units in the centre makes it possible to realise the complex overall geometry of the temple step by step during the construction process. The diagrams on this page show the geometric arrangement of the individual room areas along the main axes and the diagonals, which was developed according to the inner mandala. © Neuwirth & Auer, TU Graz 2020.

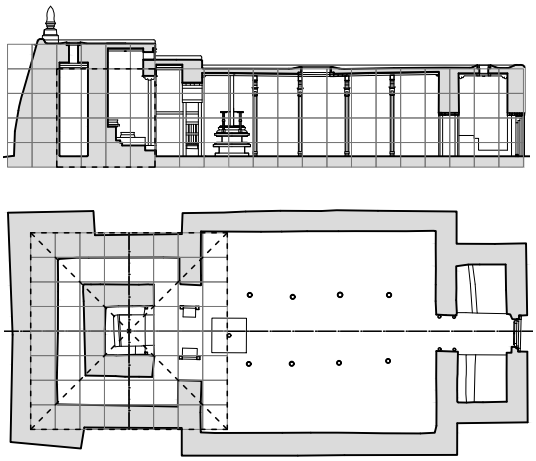


Fig. 536 Longitudinal section and floor plan of the Main Temple in Tabo. The western part is defined by a mandala of 8 x 8 units with a side length of 10.40 metres, which determines the size of the cella and ambulatory as well as the extent of the walls, the size of the openings and the thickness of the reinforced western wall. The centre of the mandala, the cella, is defined by 2 x 2 units. © Neuwirth & Auer TU Graz 2020.

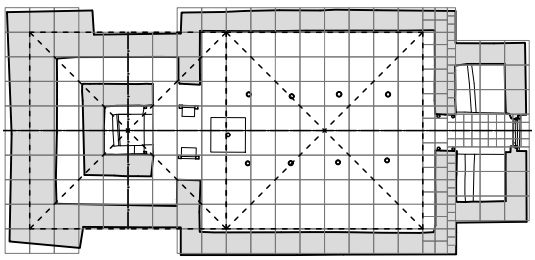


Fig. 537 The extension of the grid determines the dimension of the assembly hall and the vestibule as well as the width of the openings and the wall thicknesses. © Neuwirth & Auer, TU Graz 2020.

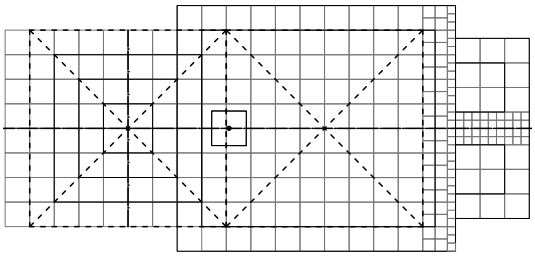


Fig. 538 Deviations from the lines of the basic grid are determined by part-sizes of 1/2 and 1/3 of the unit size. © Neuwirth & Auer, TU Graz 2020.

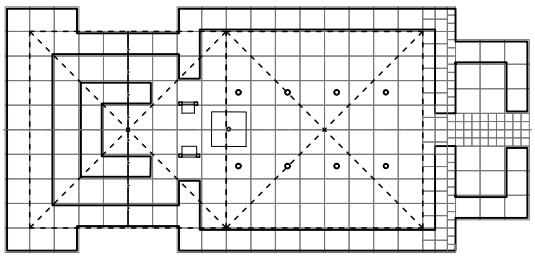
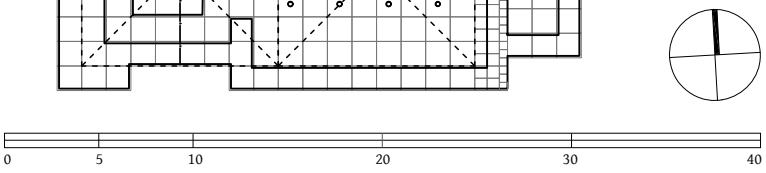


Fig. 539 The analysis allows you to generate an ideal plan with a high degree of consistency with the inventory. Clear rules apply in the implementation of the grid; for example, the intersections and lines of the grid are not built on in the interior. © Neuwirth & Auer, TU Graz 2020.



PLANNING PRINCIPLE OF THE MAIN TEMPLE OF TABO

The Main Temple of Tabo seems to have been constructed using a similar process. The analysis shows that again a mandala of 8 x 8 units is the basis of the geometry, whereby the cella on the west side forms the centre. This mandala, which defines the western part of the temple and reaches exactly up to the pedestal of the Vairocana sculpture in the assembly hall, has a side length of 10.40 metres. Each of the 64 units has a side length of 1.30 metres. The innermost area of the cella comprises 2 x 2 units, resulting in a side length of 2.60 metres. The lines of the 8 x 8 grid allow us to determine the wall thicknesses as well as the wall openings, and the width of the ambulatory around the cella can be determined with simple, geometric references. The pillar-like reinforcement of the western façade is extended by one unit, thus comprising two units.

The basic structure of the mandala continues in the assembly hall. A doubling of the basic square of 8 x 8 units defines the interior of the assembly hall, with an extension of a 1/2 unit (0.65 metre) in the depth of the hall. Thus, the total width of the assembly hall measures 8 units, and the length measures 9 1/2 units (Fig. 537). How the idea of the mandala becomes effective in the assembly hall can be seen in relation to the sculpture program. 32 sculptures are lined up along the inner walls; this number corresponds exactly to the number of deities in the outer row of the mandala (Fig. 530). Ten sculptures are located on the north and south side walls, three figures are placed on each side of the entrance on the east wall and two figures are placed on each side of the portal to the cella on the west wall of the assembly hall (Fig. 247, page 193). This implementation of the iconographic program could be the reason for the extension of the hall.

In the interior, and especially around the cella, the lines of the grid and their intersections are deliberately avoided. In practice, the course of the walls runs about 0.10 metre away from the lines of the grid. This results in an average wall thickness of 1.10 metres. The pillars are also placed always next to or in between the lines. The side areas of the vestibule correspond to 2 x 2 units each, and deviations from the main grid in the vestibule comprise a 1/3 unit (0.43 metre). In terms of height, it can be assumed that the vestibule, the assembly hall and the ambulatory were once four units high, whereas the cella was five units high.[126] The ideal plan of the temple, which was generated according to the analysis, allows structural changes to be more accurately reconstructed.

126 Regarding the room heights of the building, it must be taken into account that the floor level was originally situated lower.

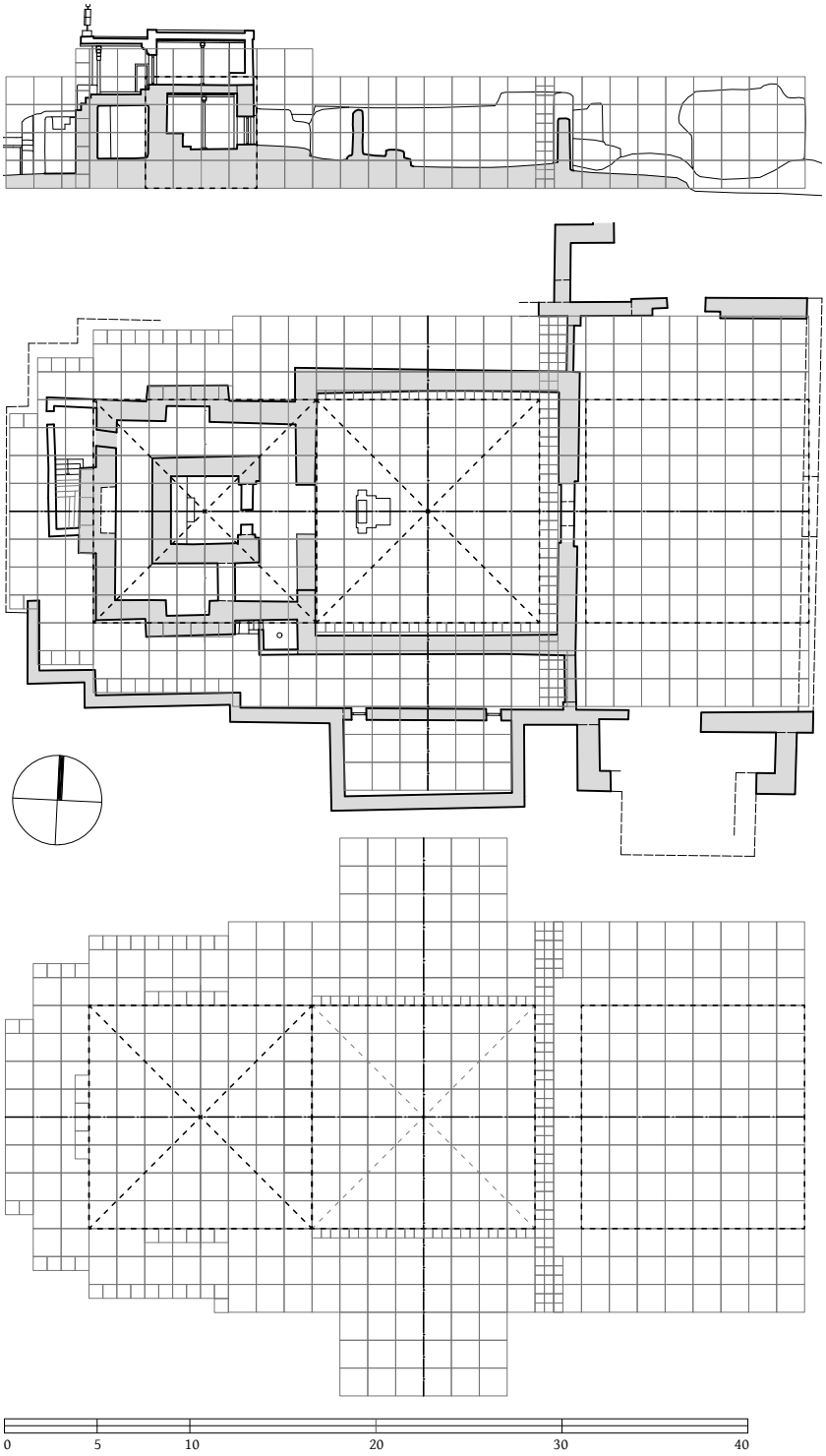


Fig. 540 The western part of the temple, where the cella and the inner ambulatory are located, is defined by a mandala with a side length of 12 metres, which is divided into 8 x 8 units. The central 2 x 2 units determine the cella and the surrounding components. The extension of this grid structures the assembly hall, the vestibule and the outer ambulatory. The niches in the inner ambulatory as well as the extensions in the assembly hall are defined by part-sizes of 1/2 and 1/3 units. The course of the walls is determined by the grid lines, but positioned away from the lines. This results in a wall thickness of 1.10 metres in the core of the building, and the outer wall of the surrounding ambulatory (i.e. 0.75 metres) corresponds exactly to a 1/2 unit. The height development also shows clear similarities with the grid sizes. The room heights of the inner ambulatory comprise two units, and the assembly hall and the outer ambulatory comprise 2 1/2 units. The room height of the cella was originally higher than the current stock; this area was once probably three units high. © Neuwirth & Auer, TU Graz 2020.

Fig. 541 The geometric grid on which the inventory is based shows how the spatial areas are generated. The 8 x 8 grid, which defines the cella the inner ambulatory, is reflected in the inner proportion of the assembly hall. The surrounding parts of the temple can be determined by simple geometric operations based on the dimensions of the grid. © Neuwirth & Auer, TU Graz 2020.

PLANNING PRINCIPLE OF THE MAIN TEMPLE OF NYARMA

The analysis of the Main Temple of Nyarma shows an equally consequent structure. As in Tabo, a mandala with 8 x 8 units underlies the western part of the temple. The side length of the mandala measures 12 metres, and each of the 64 units has a side length of 1.50 metres. The cella is located exactly in the centre of the mandala and again includes 2 x 2 units, while the walls and the inner ambulatory are defined by 1-unit rows. Here, too, efforts were consciously made in the interior to avoid building directly on the lines and intersections; therefore, the walls are placed 0.10–0.30 metre away from the grid lines.

The extension of this basic grid also defines the structure of the assembly hall, the courtyard and the outer ambulatory. The recesses of the niches in the inner and outer ambulatory areas and the deviation from the grid lines in the assembly hall are determined by the part-sizes of a 1/2 unit (0.75 metre) and a 1/3 unit (0.50 metre), respectively. The length and width of the assembly hall comprises 8 2/3 units, the distance from the assembly hall to the outer wall of the courtyard measures exactly 9 units, the outer ambulatory is 2 - 2 1/2 units wide and the adjoining niche of the ambulatory on the south side corresponds to 3 x 6 units. On the basis of this analysis, the ground plan can be reconstructed in its original form as an ideal plan. This plan clarifies that the wall fragments on the north and south sides of the courtyard do not match the geometry of the grid and, thus, are not part of the original concept.

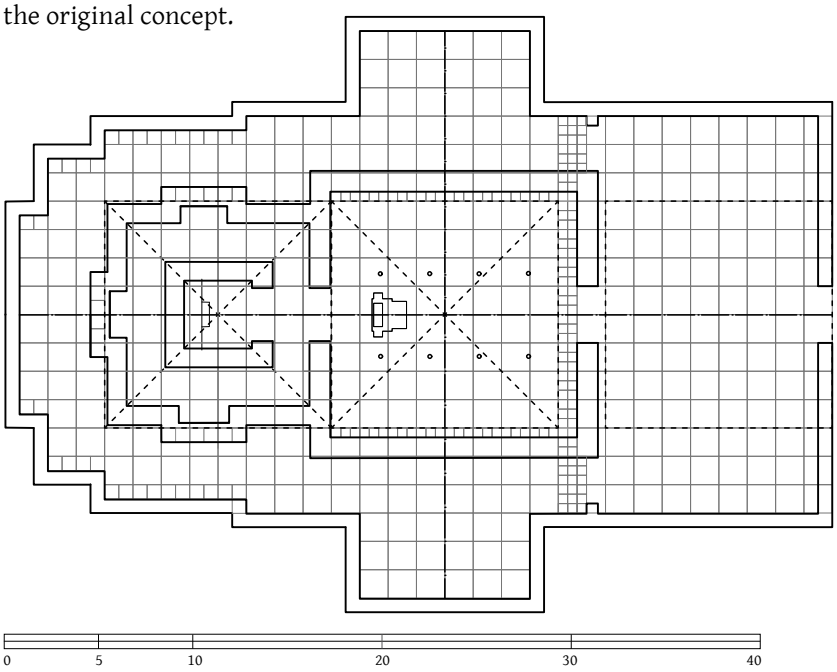


Fig. 542 The analysis of the inventory makes it possible to reconstruct the ground plan of the temple as an ideal plan. Parts of the building which are obviously determined by the observed geometry are thought to be related to the original concept of the temple. © Neuwirth & Auer, TU Graz 2020.

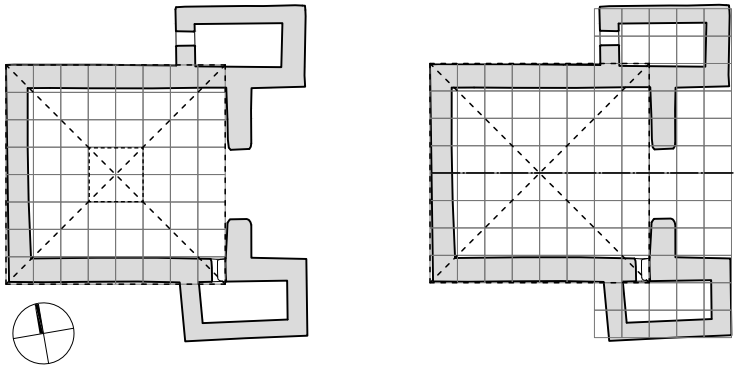


Fig. 543 The Temple of Basgo. A mandala of 8 x 8 units with a side length of 11.60 metres defines the main room and its walls. The extension of the grid determines the vestibule and the side chambers. © Neuwirth & Auer, TU Graz 2020.

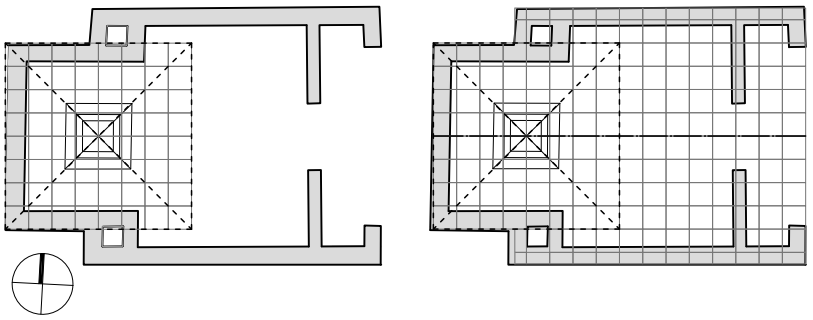


Fig. 544 Temple No.5 of Nyarma. A mandala of 8 x 8 units with a side length of 9.85 metres defines the main room and its walls. The extension of the grid determines the vestibule and the side chambers. © Neuwirth & Auer, TU Graz 2020.

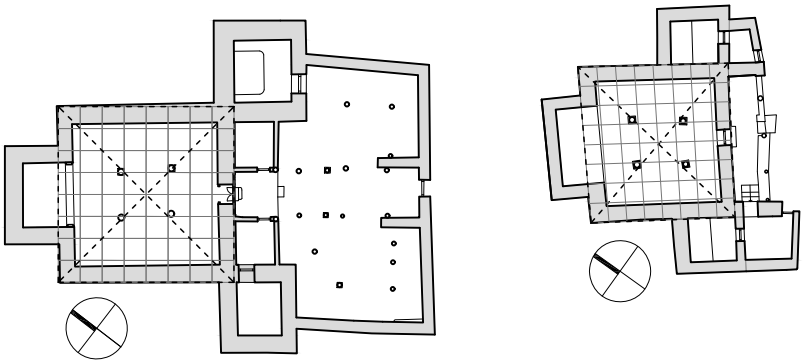


Fig. 545 Left: The Dukhang of Alchi in Ladakh. A mandala of 8 x 8 units with a side length of 9.30 metres underlies the structure. © Neuwirth & Auer, TU Graz 2020.

Fig. 546 Right: The Temple of Sumda Chung in Ladakh. A mandala of 8 x 8 units with a side length of 8.30 metres underlies the structure. © Neuwirth & Auer, TU Graz 2020.

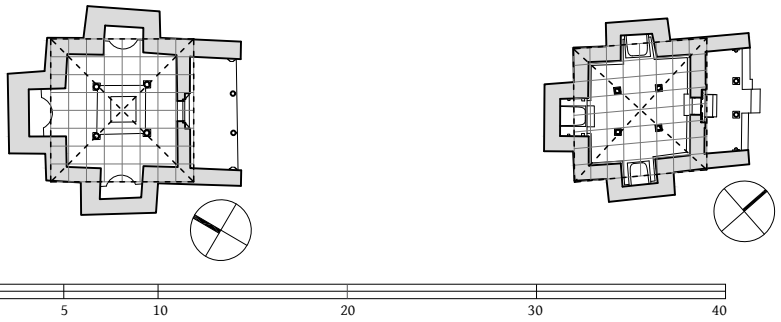


Fig. 547 Left: The Sumtsek of Alchi in Ladakh. A mandala of 8 x 8 units with a side length of 7.60 metres underlies the structure. © Neuwirth & Auer, TU Graz 2020.

Fig. 548 Right: The Temple of Wanla in Ladakh. A mandala of 8 x 8 units with a side length of 7 metres underlies the structure. © Neuwirth & Auer, TU Graz 2020.

The results of the preceding analysis clearly showed that variations of the Manduka Mandala (Skt. *maṇḍūka mandala*), consisting of 8 x 8 units, dominate as the basic system of organisation in the planning methods used in the early temples and their step by step planning processes . In spite of a certain level of imprecision, which is caused both by the construction technology and by structural changes, these results provide valuable insights regarding the implementation of the cosmic concept in the building. The original spatial concept of the temples becomes visible, and different construction stages and later modifications are easier to differentiate. As far as the state of preservation of the individual buildings allows, one can also see that the geometric principles were of great importance not only for the hierarchical structure of the building parts but also for their iconographic configuration.

If one extends the investigation of the geometric principles to other temple buildings, clear similarities become apparent here as well. The temple ruin of Basgo (Fig. 543) also corresponds to the planning principle of an underlying 8 x 8 grid, which is obvious, since the remains of the interior decoration evidently reference the iconographic configuration of the assembly hall in the Main Temple of Tabo. The 32 figures, which correspond exactly to the number of deities seen in the outer row of the Manduka Mandala, are arranged along three walls and not along four walls as in Tabo (see page 323). Thus, when implementing the iconography, it was the numerical correspondence that was important, not the arrangement in space, which could be adapted to the building

The Temple No. 5 of Nyarma (Fig. 544) follows the same planning principle. Fragments of a chörten have been preserved inside that once manifested the centre of the Manduka Mandala with a size of 2 x 2 units. A similar emphasis on the centre probably once existed in Basgo. With regard to the vestibules and side chambers, the Temples of Baso and Nyarma have similar planning grids, which indicates that they are part of the original concept.

The manifestation of the centre took place in different ways, in the form of a pedestal for the main sculpture as in the Main Temple of Tholing, as a walled cella as in the Main Temples of Tabo and Nyarma, or as a chörten. Later temples like the Dukhang in Alchi and the Temple of Sumda Chung (Fig. 545, Fig. 546) as well as the three-storeyed Temples of Alchi and Wanla (Fig. 547, Fig. 548) show the manifestation of the centre by the arrangement of four pillars. In multi-storeyed temples, this was kept open towards the top. In the Sumtsek of Alchi, the centre is additionally emphasized by a stupa. the size of the centre in all examples always corresponds to 2 x 2 units of the grid, which is a clear indication that the idea of the Manduka Mandala is used as the basis for the planning of these buildings.

Fig. 549 A lhato between the stupa rows leading to the monastery district of Tholing. Neuwirth 2007.

„Nanos gigantum humeris insidentes“
Dwarfs perched on the shoulders of giants.

Bernhard von Chartres 1120, SALISBURY 1159: folio 217.

SUSTAINABLE RESTORATION MEASURES

Holger Neuwirth

THE CULTURAL HERITAGE

The UNESCO Convention of 1972 begins by pointing out that cultural and natural heritage is increasingly threatened by destruction, not only by traditional causes of decay, but also by changes in social and economic conditions which worsen the situation through even more fatal forms of damage or destruction. Article 1 defines that protected architectural monuments are of outstanding universal value for historical, artistic, or scientific reasons. The monuments documented here undoubtedly belong to this category.[127]

This also suggests that we have an obligation to preserve and make accessible this cultural heritage in a sustainable manner with regard to generational fairness. In order to fulfil this responsibility, interpreting the authenticity and legibility of the historical development is a challenge for preservation and architectural design. For the most part, the documented case studies still do not include reports on archaeological investigations that could contribute essential insights and allow the building history to be reconstructed. This is particularly true for the monastery in Nyarma, which was abandoned 500 years ago and has survived as a ruin until today. Only in recent years have fundamental changes been carried out in the monastery area.

An additional challenge is that all of the buildings presented are located in a zone that has a very high earthquake risk (Zone IV-V).[128] Furthermore, natural hazards such as increased rain and snowfall significantly affect the buildings. Another problem is the inadequate maintenance of the buildings; maintenance is no longer sufficiently guaranteed due to social changes and the negative consequences of increasing tourism. In order to preserve the historic buildings, the first step is to repair the causes of damage in cases of imminent danger and to carry out the most necessary repairs to ensure the stability of the structures.

127 Convention concerning the protection of the world cultural and natural heritage. Adopted by the General Conference at its seventeenth session, Paris, 16 November 1972. UNESCO World Heritage Convention, Internet sources.
128 Earthquake hazard map of India, BMTPC 2019. Internet sources.

After these initial preservation measures have been taken, the restoration of the building substance and the interior decoration should be planned in stages. This process includes ongoing monitoring, reflections and modifications, which are also closely related to the specific current building use.

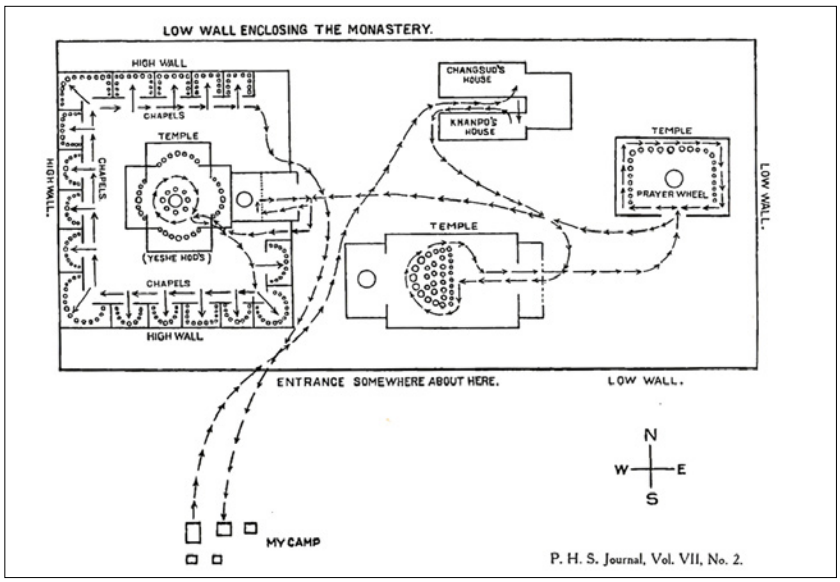


Fig. 550 The sketch by G. M. Young gives an impression of the access and guidance to the area and inside the temples of Tholing in 1912. See Young 1919.

Fig. 551 The monastery area of Nyarma before the changes that occurring in the last years. In the meantime, new buildings have been erected between the ruins, and material from the monastery area has been extracted for road construction. Neuwirth 2000.

RESTORATION AND CONSERVATION MEASURES

The starting point is the assessment of the actual state of each building and site. The planning process for an appropriate restoration begins with a comprehensive documentation of the entire complex, using an adequate accuracy of measurement, and the creation of the necessary technical plan representations in the forms of floor plans, cross-sections, longitudinal sections and elevation maps. In these plans, the deformations of the building structure, different wall thicknesses, wall alignments and construction joints become visible. Together with a photo documentation, the professional examination of the necessary technical requirements can be carried out, and a damage catalogue can be created.
On the basis of this documentation, a technical analysis can then be made. The structural condition often makes it necessary to first repair the existing damage in order to preserve the building structure and protect the interior. Once these repairs have been made, the necessary interventions can be comprehensively planned in order to ensure a sustainable restoration process. The detailed planning for each building allows a verifiable cost calculation to be performed, the necessary funds to be secured and the services provided to be checked.

The study of reliable historical sources in the relevant archives is crucial for the evaluation of the buildings. This research begins with writings on the traditional history, biographies of important personalities, travel reports of explorers in the 19th and 20th centuries and, old plans and photographs that are available in archives. All of these documents, together with the plan documentation, are used to help reconstruct the development of the site as well as the building phases during the different building periods. In the past, both documentation and conservation efforts were often focused on the main temple of the monastery complex, whereby other components of the overall complex were neglected. In order to counteract this tendency, it is essential to understand the monastery complexes as a complete ensemble and to also document and restore the smaller and newer buildings. In some cases, archaeological investigations provide additional data on different stages of development, which can provide useful information for the analysis of individual construction phases and technical construction.
Before starting the restoration process, a precise timetable will be drawn up. Depending on the climatic and local conditions, precise knowledge of the region will be needed to create this timetable. After restoration has begun, it is essential to document the work in the form of a construction diary, which serves as an important basis for all further work and can be continuously supplemented. This documentation then also serves as the basis for necessary reconstruction efforts, if structures are destroyed by natural disasters.

Fig. 552 Left: Construction of the foundations from quarry stone masonry. Neuwirth 2002.

Fig. 553 Right: Foundation and lower zone of the exterior wall, made of quarried stones with clay mortar. Neuwirth 2002.

Fig. 554 Left: The course of the brickwork will be checked with a batter board, and the quarried stones will be straightened on the outside. Neuwirth 2002.

Fig. 555 Right: Window frames and door frames are integrated into the rising masonry. Neuwirth 2002.

Fig. 556 Left: The lower zone of the exterior wall is built of quarried stones, window frames and door frames are integrated. Neuwirth 2002.

Fig. 557 Right: Construction of the rammed clay wall layer. Neuwirth 2002.

Fig. 558 Left: The construction of a residential house in Tabo. Neuwirth 2002.

Fig. 559 Right: Exterior plaster and colour scheme of the ground floor. Neuwirth 2003.

LEARNING FROM VERNACULAR ARCHITECTURE

During the stay in 2002 and 2003, it was possible to photographically document the construction of a residential building in the immediate vicinity of the monastery complex in Tabo. Since the building tradition and the materials used, most of which are obtained from the surrounding area, as well as the craftsmanship have not changed significantly over time, valuable knowledge for the assessment of the historical buildings could be obtained in this area. Below, a short description of the individual work steps is provided, as shown in the photos on the left:

Deep trenches are dug for the foundations, which are first filled with quarry stones. The space between the inner and outer walls is then filled with crushed stone. As a horizontal finish, a compensating stone layer fills in the width of the foundation. This creates a layer that protects the outer wall against rising humidity. The outer wall of the building is erected on this foundation, which consists of crushed stone mixed with clay mortar in the lower area, which reaches up to the parapet height of the windows. The inner walls are made of rammed earth; they are built on the foundation wall at ground level. A batter board ensures horizontal and geometrical accuracy; a plumb bob is used for vertical alignment. The outer walls above the base zone also consist of several layers of rammed earth, which are built up gradually with the width of the stone walls at the height of the movable shuttering boards. The clay is extracted and processed directly on site from a construction pit. The wooden frames for windows and doors are fixed by adding rammed earth layers and supports. Additional wooden lintels support the load of the masonry via the frame .
The ceiling beams for the flat roof are integrated into the rising masonry. At right angles to this, a layer of straight rods and, above this, a layer of lichen and grass secures the support and seals the multiple clay-layers of the flat roof together (see Fig. 571 and Fig. 572). The rising masonry ends with a low parapet, which is integrated into the flat roof with a clay top. The walls were finally plastered with clay and whitewashed, while the base and the framing of the openings with horizontal lintels are painted black. An upper floor is frequently added in a further construction phase.

This analysis of the construction site gives us an insight into the inner structure of traditional building techniques. Valuable conclusions regarding the material behaviour and stability of the building structure during the restoration can be drawn from this analysis. The building process is accompanied by ritual ceremonies and is usually not only carried out by an individual family but is supported by the village association.[129]

129 KHOSLA 1979: 113-122; MEYER & JEST 1987: 146-167.

Fig. 560 Foundation work in Namche Bazar, a village in Kumbu at 3,440 metres above sea level. For the foundations, deep and wide trenches are dug, which are filled with quarried stones. Neuwirth 1975.

Fig. 561 Left: Securing the soil zone with river stones in a clay mortar bed on the outer wall of the Red Temple of Tholing. Auer 2007.

Fig. 562 Right: Securing the ground zone with natural stone walls with cement mortar at the Main Temple of Tabo. The horizontal surface of the base increases the moisture level and destroys the surface of the wall on the inside. Auer 2003.

MATERIAL AND FOUNDATION

To this day, stones and clay are still mined from the immediate surroundings. Loam is a mixture of sand, silt and clay and has different properties regarding its application, processing and durability, depending on the mixing ratio used. A high proportion of clay is preferred.[130] For this reason, longer transport distances have been accepted when mining the building material in order to use deposits of better quality.
Clay as a building material also has a great influence on the physical behaviour of buildings, as it stores heat and has a regulating effect on humidity. Negative consequences arise when cement is added today and when cement mortar and concrete elements are inserted as building components. Thermal bridges and the hydroscopic properties have negative effects on the entire building structure.

Wood as a building material is rare and expensive, and its use often depends on transport conditions. There are usually only willows or poplars with limited structural properties available on site, which are used as round timber. To create more complex structures, juniper, larch, pine, salt cedar (tamarisk) and deodar (Himalayan cedar) from the lower lying regions were used as squared timber.
The dimension and length of this timber depended on the availability in the region, on the road conditions and on the higher costs. This availability has now improved as the transport routes have expanded, which ensures the use of optimal beams: *"In 2002, ASI carried out replacement of the large beam, 10 by 10 inches (250 mm × 250 mm), by 4 feet (1.2 m) in length, made of Deodar, which supported the roof of the main hall of the old monastery, with a Sal timber beam as Deodar of that size could not be located."* [131]

Only archaeological excavations can give an exact indication of the depth of the foundations of existing buildings. However, it can be assumed that the foundation width corresponds at least to the respective wall thickness of the building and, thus, the foundations are sufficiently dimensioned. The depth of the foundations also takes into account the climatic conditions. The decisive factor is the connection between the adjacent level and the rising masonry. For this reason, a stone wall is first erected on top of the foundations created for earthen buildings; this wall extends above the ground level, thus protecting the base zone from soil moisture. The rammed earth or clay brick walls are placed above this, protecting them from direct humidity. In Tholing today, the base zone has a conical protection made of river stones and a clay mortar compound.

130 FEIGLSTORFER 2019: 33-129.
131 THE TRIBUNE Himachal Pradesh 2002, Internet sources.

In Tabo, during the restoration carried out in the 1990s, all temples were enclosed with a massive base made of quarried stones and cement mortar, with the horizontal tops reaching a height of up to 1.00 metre. The transition from the base wall of river stones to the mud brick wall from the construction period is directly visible only at the ruins in Nyarma. Cracks in the rising masonry indicate weaknesses, which may also be due to the foundation, but can also be interpreted as a consequence of earthquakes. A crack-pattern plan on all wall surfaces provides information about the movements of the entire wall structure.[132] Long-term monitoring of the cracks can determine whether a new equilibrium has been established and whether the movement in the structure has come to a standstill.

132 NEUWIRTH 2015: 155-159.

Fig. 563 South wall of the outer circumambulatory of the Main Temple of Nyarma. The cracks at the corners and connection points show the weak point of the wall. The crack in the wall field can be attributed to a settlement of the foundation layer. Neuwirth 2003.

Fig. 564 Left. The outer layers of the brick masonry of the temple ruins of Basgo show an orderly brick bond, while the interior shows the dissolved state of the bond. Neuwirth 2004.

Fig. 565 Middle: Brick bandages in the vestibule wall of Temple No. 2 in Nyarma. Neuwirth 2003.

Fig. 566 Right: In Nako, wooden tie-rods with a wedge safety device were tied into the rising masonry of the Lhakhang Gongma. Neuwirth 2003.

CONSTRUCTION TECHNOLOGY AND MASONRY

In Tholing, Nyarma and Tabo, the rising masonry of the temples above the stone base consists of air-dried mud bricks set in a bed of clay mortar. The clay bricks are usually produced and dried on site. The stability for the load transfer is usually achieved by creating thick walls (i.e. between 0.80 and 1.20 metres). However, the quality of the masonry bonding also plays an important role. Runners and trusses are normally replaced with staggered joints per brick batch. In the case of thicker walls, the bond inside is not always properly continuous, which weakens the stability. Often, masonry bonds are only orderly in the outer walls, and the gaps are filled.

For this reason, the front sides of free-standing walls (e.g. in open vestibules) as well as the corner formations and extensions that do not interlock with the existing masonry represent weak points which must be secured afterwards. Therefore, numerous historical buildings have been reinforced with additional supporting pillars, especially at the corner joints. If the beams in the ceiling construction no longer act as tension anchors, an additional hazard arises. In Nako on Lotsawa Lhakang, there are tie rods embedded in the masonry which, together with the wedges, should prevent the wall from bulging. The brick sizes of the investigated buildings are 0.40 x 0.25 x 0.10 metre with minor deviations.

Fig. 567 Left: Remains of the north wall of the outer ambulatory at the Main Temple of Nyarma. Neuwirth 2003.

Fig. 568 Right: Base masonry of river stones and above the rising masonry of air-dried mud bricks of Temple No. 2 in Nyarma. Neuwirth 200.

Fig. 569 Left: The crack in the middle of the wall at this ruin in Stok can be attributed to a weakness in the foundations as a settlement crack or it can be the result of an earthquake. Neuwirth 2000

Fig. 570 Right: The broken main beam in the Main Temple of Tabo above the Vairocana sculpture. Neuwirth 2002.

Fig. 571 Left: A construction site in Dangkhar, showing the beam layer and bar layer used for the flat roof construction. Neuwirth 2011.

Fig. 572 Right: An insulating layer of grass and lichens is integrated into the first clay layer of the flat roof. Auer 2011.

Fig. 573 Left: Details of the different attic constructions of the three-storey temple of Wanla. Neuwirth 1998.

Fig. 574 Right: The periphery of the flat roof is secured with stone slabs. Neuwirth 1998.

Fig. 575 Left: Water spouts of the Main Temple of Tabo. Beside the widely projecting wooden gutter, the dripping edge of the rod layer was removed when the new plastic pipe was moved. Neuwirth 2002.

Fig. 576 Right: Ruin on the castle hill in Tsaparang. A layer of juniper branches insulates the attic and prevents the formation of thermal bridges. Neuwirth 2007.

Fig. 577 Left: At the Mandala Temple of Tabo, the flat roof is still without attic in 2003. In 2019, the Mandala Temple has a raised parapet all around with the same number of water spouts without sufficient dimensions. Neuwirth 2003.

Fig. 578 Right: The Mandala Temple of Tabo with a raised attic. Roswag-Klinge 2019.

FLAT ROOF CONSTRUCTION, ATTIC AND ROOF LANTERN

The ceiling beams for small spans are integrated directly into the masonry. For larger spans, pillars with consoles support the main beams, whose supports are laterally supported by wall consoles. A secondary beam layer is then overlaid on the main beams, whose supports can also be reinforced with wall consoles for wall connections. Above the secondary beam layer, the entire area is covered with willow rods or with a layer of boards. This layer of boards can be painted as part of the interior design. The roof structure of the flat roof is constructed above the final ceiling layer of the interior. Grass, moss, lichens, or small branches are applied as the first layer, which can form the basis for the first clay layer and also act as thermal insulation. In the clay flat roof, the construction in several layers determines the long-term durability. The same applies to the addition of straw chaff as a reinforcing material and the addition of oils to create a thin, uppermost, water-repellent layer, which is also mechanically compacted during application. Here, the starting material, the layer thickness and the quality of the processing are of crucial importance in order to avoid the occurrence of shrinkage cracks.

The rising masonry can be completed in different ways. As a simple solution, a short 0.10–0.20-metre-long protruding bar layer is arranged at the height of the ceiling construction for the roof finish. This layer of bars is used to create a parapet with a drip edge that is only slightly higher than the flat roof and is integrated into the roof surface with a flat mound of clay. For buildings with a higher parapet, the structure is completed with a second layer of bars above the first one and the space in between is painted red. Stone slabs in a bed of clay mortar are often used to cover the top of the wall. In place of the bar layer, short square timbers with a board support are also used on which the overhanging attic is built, which protrude over the roof surface. The top of the wall is secured with stone slabs and a clay mortar bed. In general, there are numerous attic formations, which can also establish a hierarchical, semantic order. By covering the outer surface on the upper side of the attic with horizontal juniper branches, this heat-insulating layer can prevent possible condensation due to thermal bridges.

To allow the drainage of rainwater, half-open wooden water spouts are integrated into the clay layer of the roof. These ensure rapid drainage and require no special maintenance. A raised parapet alone creates a problem in that rainwater collects in a roof trough and cannot drain off quickly enough. The plastic pipes used today as water spouts often have a small diameter and need constant maintenance, as they can be blocked relatively quickly by leaves or bird's nests. In addition, the plastic material cannot form a permanent bond with the clay layer and is generally not suitable.

If the rainwater does not drain off quickly enough, the clay layers of the flat roof construction soak it up, and the water seeps through the clay layers. This can cause major damage to the ceiling and wall paintings. During the roof restoration in Tholing, large openings in the raised parapet with a funnel-shaped integration of the open sheet metal gutters into the roof surface allowed the water to drain away quickly.
In addition, it is necessary to consider the roof area when determining how many water spouts to use. New technologies in roof construction are also used, such as waterproofing foils as a barrier against moisture, which are integrated into the multi-layer roof construction. Open questions in this regard concern the service life of the foils, proper installation and their unintended role as a vapour barrier, depending on the dew point.[133]

133 KILCHHOFER 2004.

Fig. 579 Left: Tholing Mandala Temple. Large openings in the raised attic ensure the rapid drainage of meteoric waters. Neuwirth 2007.

Fig. 580 Right: Tholing Main Temple. Large openings in the parapet and open gutters make the waterspouts easier to maintain. Neuwirth 2007.

Fig. 581 Left: The White Temple of Tabo with the water spout of the porch. Neuwirth 2003.

Fig. 582 Right: The number of undersized water spouts was not adjusted even after the attic was raised. Roswag-Klinge 2019.

Fig. 583 Left: Lanterns and different attics above the building complex of the main temple of Tabo. Neuwirth 2003.

Fig. 584 Right: The eastern extension of the main temple of Tabo with the lantern above the former residence. Roswag-Klinge 2019.

In 1909, A.H. Francke visited Tabo and mentioned the light conditions in the temple rooms*: "But the little light that entered this hall through a minute hole in the ceiling was not sufficient for the lamas, whom I set to work on the paintings and wall inscriptions."*[134] Small windows in the elevated apse or cella illuminated only the main figure, while a small opening in the ceiling illuminated the assembly room. The room was lit by butter lamps. In the meantime, separate lamp houses for the butter lamps have been built outside to avoid depositing soot on the wall painting. At the same time, several and also larger openings were made in many roof areas, in which roof lanterns with glass windows were erected in order to provide a better room lighting. By increasing the use of solar panels, it is possible to illuminate the rooms more effectively without interfering with the building fabric.

WALL PLASTER AND ROOM CLIMATE

The walls of air-dried clay bricks are usually plastered with clay mortar on the inside and outside. The mortar used is a clay mixture – if possible, with an increased proportion of clay – to which straw chaff can also be added. Normally, it is applied in two layers and smoothed by hand. The second layer can then be prepared on the outside with coloured pigments or used as a painting base. If the walls are painted on the inside, then a special painting base is created in several layers.

The buildings' ideal physical characteristics result from the quality of the natural materials used, such as clay with the addition of barley straw chaff, the thermal insulation layers of moss, leaves and small branches, the thermal conductivity and the careful craftsmanship principles applied to avoid the formation of cracks in the construction. Above all, the increasing use of cement result in changed conditions for the indoor climate due to its hygroscopic properties, thermal bridges, increased condensation and mould formation in the interior.

Temples which are mostly locked have almost no interior ventilation. The removal of exhaust air is also limited due to the increasing use of glazed lanterns. The result is an accumulated water vapour content, which condenses on the ceiling and walls when the temperature drops. The original clay floors have been partially replaced by cement screeds, which additionally stores moisture and hinder the even drying of the floor surface and the rising masonry. The use of cement in the base zones causes the capillary moisture levels in the masonry to rise. Another influence on the room climate is the growing number of tourists, which additionally increases the interior water vapour content.

134 FRANCKE 1999: 43.

Fig. 585 The outer façades with supporting pillars at the Red Temple in Tholing. Auer 2007.

Fig. 586 The room-high walls of the former Main Temple of Nyarma. Auer 2003.

Fig. 587 Subsequently attached supporting pillars and a surrounding base zone on the north side of the Main Temple of Tabo. Neuwirth 2003.

BUILDING CONDITION AND STABILITY

The monastery complexes documented in this book were built at the end of the 10th century and have been preserved in very different conditions. Tholing was the main monastery in the Kingdom of Guge and lost its importance when the kingdom fell apart in the 17th century. After the destruction that occurred during the Cultural Revolution, the monasteries were placed under protection and are constantly being restored. Nyarma was abandoned in the 15th century, and only the ruins of the walls have survived, except for the Dorje Chenmo Chapel, which was later built on the ruins above the former cella of the Main Temple. Only the monastery in Tabo has been continuously operated until today, and the interior decoration of the temples has been largely preserved. Restorations are continuously carried out by the Archaeological Survey of India (ASI).

In general, the foundations and the large wall thickness ensure sufficient stability. Any weaknesses in the brick masonry bonds and at the corner joints have been secured from the outside over time by installing supporting elements and retaining walls. The decisive factor is that the tensile forces that arise when the wall structure is secured can be taken over by the main beams of the ceiling construction. Tie rods with wedge protection can also be integrated into the masonry. Deformations of the walls can be further increased by adding higher loads, for example, by subsequently adding attics and additional clay layers when repairing the clay flat roof.

In Tabo, the west side of the building of the Main Temple, the Mandala Temple and the Small 'Brom-ston Temple was formed as a massive, conical abutment, which clasps a part of the side walls of the hall. As a characteristic element, this technical construction can be associated with the time of its origin. During the restoration processes that were carried out in Tabo, all temples were completely surrounded by massive pedestals of quarried stones with cement mortar in the floor zone, which changed their appearance considerably. Vestibules were added in the course of the restoration to the Mandala Temple and the White Temple, without distinguishing these additions from the existing buildings. Particular attention must be paid to the technical details of the attic construction and drainage during the renovation. The restorations in Tholing provide a positive example in this respect.
The ruins in Nyarma are a special case. After the monastery was abandoned in the 15th century, wooden parts were reused in the construction of the White Temple of Tikse Monastery. Meanwhile, the walls have survived for 500 years. Archaeological excavations could still provide valuable insights and a roofing – at least of the Main Temple – could be added to reflect the importance of this historically unique place in Ladakh.

Fig. 588 Damage to the wall painting due to dripping clay sludge in the Cave Monastery of Tabo. Neuwirth 2002.

Fig. 589 White Temple of Tabo. Damage to the inner wall by condensation and the penetration of meteoric water. Neuwirth 2002.

Fig. 590 The murals inside the Painted Stupa of Nyarma show mechanical damage caused by acts of vandalism. Neuwirth 2002.

PROTECTION OF THE INTERIOR

Humidity plays an important role in the indoor climate. It acts as rising soil moisture (capillary moisture), as condensed water that collects indoors and as rain or snow from outside. The most important prerequisite for the protection of the interior is that no precipitation water should penetrate through the building walls to the interior. Likewise, rainwater and water from the water spouts should be quickly drained from the immediate vicinity of the building and should not penetrate the base masonry or seep into the soil near the building.

The external, solid plinths in Tabo increase the moisture penetration of the masonry, as dehydration is blocked. Inside, this moisture damages the plaster surface of the mostly monochromatic painted wall. Cement screeds, which seal the clay floor inside, bind additional moisture and drive up the capillary moisture in the surrounding walls. Since there is also no functioning ventilation system, and some rooms are rarely opened, the water vapour content in the interior increases.

Furthermore, an increase in the number of visitors has an influence on the air humidity content. Therefore, a sufficient air supply must be provided and ventilation must function effectively, venting the outgoing air from the ceiling zone outside the building, which continuously reduces the water vapour content in the interior. Otherwise, the water vapour condenses on the ceiling or the interior wall, especially if thermal bridges are present. Serious damage to the wall painting occurs when water condenses where the wall transitions to the ceiling. This condensation then loosens the clay in the ceiling construction and drips in streams over the painted wall surfaces. If rainwater also penetrates through cracks in the roof surface or in the area of the parapet, the amount of loosened clay silt increases and can extensively damage the wall painting.

Fig. 591 Left: West façade of the Mandala Temple of Tabo with the technically unfavourable construction of the base zone. Neuwirth 2002.

Fig. 592 Right: The shrinkage cracks on the surface indicate lower material and processing quality. Roswag-Klinge 2019.

Fig. 593 The modifications and changes of the appearance at the eastern facade of the Maitreya Temple of Tabo. Khosla 1979, Illustration 44.

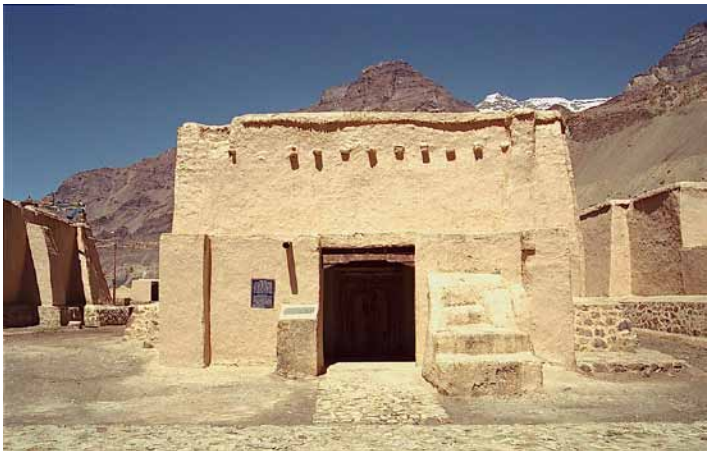


Fig. 594 The modifications and changes of the appearance at the east façade of the Maitreya Temple of Tabo. Neuwirth 2002.

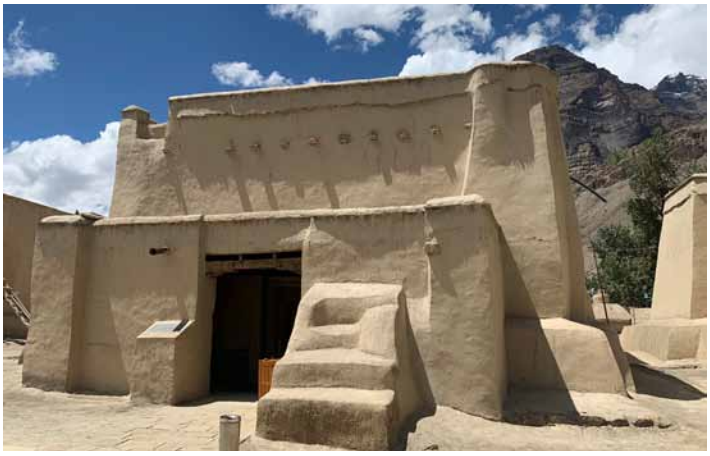


Fig. 595 The modifications and changes of the appearance at the east façade of the Maitreya Temple of Tabo. Roswag-Klinge 2019.

APPEARANCE AND MAINTENANCE

The external appearance of the buildings is determined by their structural arrangement and by the different surfaces and colours. All measures must first fulfil the technical requirements, but also meet the traditional stylistic requirements.

As an example, the historical photographs of the Maitreya Temple in Tabo by Romi Khosla show us a simple attic with a final bar layer secured by a flat mound of clay mortar, which covers the attic. In the meantime, the attic has been raised and equipped with an additional second layer of bars. The benefit of this measure is not entirely clear, as the original proportions of the building have been changed, even if only slightly. But the pressure load acting on the walls is increased. Furthermore, the capacity of the roof trough is increased but the rapid drainage of meteoric water has not been ensured by altering the diameter and number of water spouts. Cleaning the wind-protected roof surfaces is also more difficult during snowfall. The water spouts and their functionality must be checked continuously. In general, no plastic pipes should be used, but instead open gutters, which more rapidly drain meteoric water and are easier to constantly clean and check.

The colour is determined either by the material character of the exterior plaster or by a specific colour scheme. In Tabo, red coloured plaster remains are found in the space between the Main Temple and the Large 'Brom-ston Temple, which indicate the earlier, red colouring of the material. The nature of the façade plaster is a decisive factor that determines how the surface of brick buildings weathers.

Looking at the façades of the historical buildings in Nyarma, the quality of the plaster is surprisingly good after more than 500 years of exposure to the weather. The difference in quality can be seen particularly clearly in the construction stages of the Main Temple. In the cella, parts of the original masonry with a high quality are adjacent to masonry and the floor above of the Dorje Chenmo Chapel, which were installed later and definitely have poorer quality This is a clear indication of the high quality of materials and workmanship used in the early construction periods (see Fig. 168, page 139).

The exterior plaster is completely missing only on Temple No. 2 in Nyarma, in contrast to the interior plaster. This may indicate when the monastery was abandoned. Shrinkage cracks and mould formation are determined by the material and processing quality of the clay mortar or can be traced back to the use of cement admixtures which increase the moisture content. The annual application of a clay slurry serves to preserve the monastery by closing the cracks and renew its appearance.

GUIDELINES AND QUALITY MANAGEMENT OF THE PRESERVATION

Essential principles regarding the handling of historical buildings that give an international framework for the preservation and restoration of ancient buildings were laid down in the International Charter for the Conservation and Restoration of Monuments and Sites, refered to as Venice Charter:
"The conservation and restoration of monuments must have recourse to all the sciences and techniques which can contribute to the study and safeguarding of the architectural heritage".[135]

Article 9 of the Venice Charta defines the restoration process as follows:
"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."

Once the building has been surveyed and the condition has been documented by presenting the plan, construction report and a damage catalogue, the planning of the restoration measures can be started. The first restoration measure involves structural restoration to exclude further damage. Subsequently, the questions arise regarding monument protection, the necessary reconstruction steps and the securing and preservation of the valuable interior equipment. To achieve the planned state, the changes in use which are caused by, e.g. increasing tourism, must be taken into account. Article 15 of the Venice Charter applies in particular to Nyarma: *"Ruins must be maintained and measures necessary for the permanent conservation and protection of architectural features and of objects discovered must be taken. Furthermore, every means must be taken to facilitate the understanding of the monument and to reveal it without ever distorting its meaning."*

Of crucial importance for further maintenance and preservation is the detailed documentation as defined in Article 16: *"In all works of preservation, restoration or excavation, there should always be precise documentation in the form of analytical and critical reports, illustrated with drawings and photographs. Every stage of the work of clearing, consolidation, rearrangement and integration, as well as technical and formal features identified during the course of the work should be included. This record should be placed in the archives of a public institution and made available to research workers. It is recommended that the report should be published."*

A committee of experts convened by China´s State Administration of Cultural Heritage (SACH), composed of members of the national committee of ICOMOS, the Getty Conservation Institute (GCI) in the United States of America and the Australien Heritage Commission, initiated the drafting of the Principles for the Conservation of Heritage Sites in China in 1997, refered to as China Principles. These China Principles were published in 2000 by China ICOMOS, and established the major criteria for the conservation of China´s cultural heritage and for the evaluation of the conservation work.[136]

135 ICOMOS. International Council on Monuments and Sites, Venice Charter 1964, Article 1. Internet sources.
136 JINSHI 2010: 3-7; HONGKUI 2010: 75-84.

A revised edition of the China Principles was published in 2015, which responds to the changing conditions of monument preservation, for example through increasing tourism: "*The new version of the China Principles regards reconstruction of a destroyed historic building as a means of interpretation and presentation, which defines the nature and values of reconstructed buildings, thus settling a long disputed issue in the conservation of China's historic structures. The document also stresses the importance of employing a variety of methods for interpretation and presentation of historic structures, ruins and sites, especially the use of digital presentation. The new version of the document emphasises that interpretation and presentation must also abide by the fundamental principles of conservation*".[137]

In article 16 of the China Principles the conservation and management process is defined in six steps, which should be undertaken in the following order: "*(1) identification and investigation; (2) assessment; (3) formal proclamation as an officially protected site and its level of protection; (4) preparation of a conservation master plan; (5) implementation of the master plan; (6) periodic review of the plan and its implementation.*"
The article is commented as follows: "*Conservation and management must be undertaken in accordance with the relevant laws and technical standards and should not result in damage to a site. Site conservation and management are both complex and interdisciplinary, and require a holistic approach. Following the steps of the process ensures that conservation will accord with the law and meet technical standards, and be feasible, technically appropriate and effective.*"
See ICOMOS China 2015: 71, Online sources.

The Archaeological Survey of India (ASI), an attached office of the Ministry of Culture, was established in 1861 and is reponsible for the cultural heritage in Himachal Pradesh and well as in Jammu and Kashmirh. Guidelines on different aspects regarding Ancient Monuments, Archaeological Sites and Remains (AMASR) wer published by the ASI in 2009.[138] Agreement with the Venice Charter can be found in chapter B, point 5: "*Conservation of the protected monuments and archaeological sites is carried out by the ASI following the principles laid down in the 'Conservation Manual' written by Sir John Marshall. Subsequently, the relevant articles of the Venice Charter 1964 have been followed by the ASI in accomplishing the conservation projects both in India and overseas.*" [139]

The monuments of Tholing, Nyarma and Tabo are not part of the Unesco World Heritage. Tholing and Tabo were included in the national lists of monuments, but Nyarma is not yet a protected monument of the Indian national list. Important supplements for an analysis of the documentation include material on the building history, descriptions, plans and photographs, which are available in publications and archives. This is especially important for the Monastery of Tholing, which was subject to major structural changes.[140]
The systematic and comprehensive documentation as well as a collection of all available visual materials can also provide the basis for necessary restoration and reconstruction efforts if structures are destroyed by natural disasters.[141] The Tabo Monastery was included in the ASI's list of protected monuments of Himachal Pradesh.[142] The ruin complex of Nyarma is an important building testimony of the early monastery foundations in Ladakh and should therefore urgently be included in this list of monuments, as the decisive selection criteria are more than fulfilled.

"The ancient monument, or archaeological site and remains proposed for declaration as of national importance should meet one or more of following criteria [...]:
(i) represents a masterpiece of human creative genius. (ii) exhibits an important interchange of human values, over a span of time or within a cultural divisions of the country, on developments in architecture or technology, monumental arts. (III) bear a unique or at least special testimony to a cultural tradition. (iv) be an outstanding example of a type of building, architectural or technological insoluble which illustrates significant stages in history. [...]: "
See ASI 2009: 2, Online sources.

137 ICOMOS China 2015: 57. Principles for the Conservation of Heritage Sites in China.
138 ARCHAEOLOGICAL SURVEY OF INDIA 2009. Ancient Monuments, Archaeological Sites and Remains.
139 ARCHAEOLOGICAL SURVEY OF INDIA 2009: 11.
140 NAMGYAL 2001; HUI 2010: 389-393.
141 In 2007 wall paintings of Tholing were digitally archived with high precision in order to ensure the basis for future restorations. CHINA TIBET ONLINE 2017, Internet sources.
142 ARCHAEOLOGICAL SURVEY OF INDIA. Alphabetical List of Monuments – Himachal Pradesh, Internet sources.

Fig. 596 Northeast view of the ancient monastic complex of Nyarma. G. Klinge, in PANGLUNG 1983: Plate VIII.

APPENDICES

A Tibetan text of the Nyarma Society. [143] *Translation by Andrea Loseries, commented by Carmen Auer.*

NYARMA MONASTERY

"Chronicles mention that in the year 1011 the Great Translator Lotsawa Rinchen Zangpo, then aged 55 years, visited Ladakh. In this particular moment in time, he is said to have laid the foundation stones for three monasteries, including the one of Nyar ma. Moreover it is reported that the protectress Sri Devi Mahavajra (dPal ldan lha mo rdo rje chen mo) has also been present at that time, which explains why the monasterial site is also called Nyar ma rdo rje chen mo.

The original site consisted of eight temple halls of different size with the gtsug lag khan as its main temple. The most important statue was the one of Buddha Dipamkara, which was surrounded by numerous tantric deities. The length and width of the great temples hall measured 25 gom khru (approx. 22,75 m [sic]) each, while the walls' strength amounted to 3 lag khru (approx. 1,37 m [sic]) and their height to 13 lag khru (approx. 5,92 m [sic]).[144] *The external wall embracing the site measured 250 gom khru (225,5 m [sic]) in length, 2.5 lag khru*[145] *(1,14 m [sic]) in strength and 8 lag khru (3,64 m [sic]) in height. [...] In the South and West of this location many figures engraved in stone have been found. In the area of the Northern and Eastern border of the monastery, only an 'earshot' away (approx. 2 miles), a hermitage (mtshams khang) in which Lotsawa Rinchen Zangpo is believed to have deepened his realisation, is located.*

Not far away there was a well, which is held to have sprung from the force of his blessing. This special site, which was largely built by the great Lama-translator and many other divine lamas, repeatedly played a significant role in early teaching but, nonetheless, still persists – despite later lootings, robberies and demolitions caused by floods, turmoil and wars - in the minds of believers. In the present time, the site is placed under the reign of the reincarnations that originate from the Bodhisattva line related to Sherab Zangpo. Every year and beginning with the fourth day of the fourth Tibetan month, the monks hold a ceremony of sacrifice, which lasts for two days and during which diverse rituals are executed. From the 10th day of the fifth month the Sangha of Khrigse is assembled in order to offer catharses, prayers and benevolent formulas."

143 The description derives from the Rinchen Zangpo biography from the Tiksé monastery of 1976, same as the extract mentioned by PANGLUNG 1983: 283.
144 Many different synonyms existed for the Tibetan units of measurement. JACKSON 1984: 50. Panglung supposes that *gom khru* stands for *gom pa*, a step length, the measure *lag khru* translated with 'elle'.
145 Panglung gives a diverging indication of 1.5 *lag khru.*

The real dimension of the structures show that the conversions of the Tibetan units to the metric system that occur in the text are not comprehensible. The assembly hall of the Main Temple has an inner side length of 13.10 metres, the wall thickness is between 1.00-1.10 metres in the inner section, and 0.70-0.80 metre in the outer section.

If one interprets the unit *gom khru* as cubit (Tib. *gru mo*), one *gom khru* corresponds to 52.40 centimetres in relation to the dimension of the assembly hall. 25 *gom khru* (25 x 52.40 cm) result in 13.10 metres, the inner side length of the assembly hall.
The unit *lag khru* can most probably be interpreted as span (Tib. *mtho*). One *gru mo* corresponds to 2 *mtho*, in this case 2 x 26.20 centimetres. Thus 3 *lag khru* or *mtho* (3 x 26.20 cm) correspond to the wall thickness of 78.60 centimetres, which complies with the dimensions of the outer wall of the ambulatory. The height of 13 *lag khru* (13 x 26.20 cm) corresponds with 3.40 metres also to the dimensions of the inventory. Hence in Nyarma one *lag khru* corresponds to 26.20 centimetres, one *gom khru* corresponds to 52.40 centimetres. The dimensions of the externall wall thus correspond to a length of 131 metres (the distance between the Main Temple and the preserved enclosure wall on the south side of the area), a height of 2.10 metres and a wall thickness of 65.5 centimetres. All these measurements are in accordance with the dimensions of the inventory.

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