TEMPLES OF LHASA

TIBETAN BUDDHIST ARCHITECTURE FROM THE 7TH TO THE 21ST CENTURIES

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with a contribution by Matthew Akester



VOLUME ONE OF TIBET HERITAGE FUND'S CONSERVATION INVENTORY

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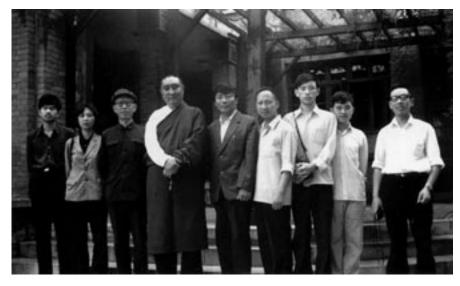
Preface

The Tibet Heritage Fund Project

In 1983, the Tenth Panchen Lama Trinlay Lhundrup Chökyi Nyima (1938–1989) initiated a project to document and study Tibetan architecture. He assembled a team of Han Chinese and Tibetan architects, which was sent to Lhasa. China at the time was still recovering from the turmoil of the Cultural Revolution, and the Panchen Lama's project was launched when Tibet's most important historic buildings lay in ruins or were still used as converted granaries. The team worked for more than a decade on documenting the architecture of the Potala Palace and some of the major monasteries, and their work was published in 1998.²

In 1985, the Tibetan archaeologist Sonam Wangdu organized survey missions to compile documentation of the most important surviving historic buildings all over Tibet. This resulted in the County Cultural Relics Inventory series (*Xian wenwu zhi*).³ These reports spoke in plain language—describing the ruins of Tibet's civilization, with only a minority of sites reported to have escaped substantial damage.

Despite these important early initiatives, official interest in preservation and restoration remained limited to only a handful of sites, such as the Potala Palace and Ganden monastery. In Lhasa, restoration and reopening of individual sites started very enthusiastically in the mid-1980s with the reconsecration of the Ramoché Temple. But after the unrest in Lhasa of 1987–1989 and the tragic death of the Tenth Panchen Lama, it slowed down markedly. The situation in the historic center of Lhasa in the late 1980s, when the present author first arrived, was one of deep decay. The nationalized historic residential buildings had become dilapidated after two decades without maintenance. There was no policy to preserve individual historic buildings except the main monasteries and temples. After 1991, extensive urban redevelopment began to transform the old city, replacing on the average 40 historic residential buildings per year. Aware that most of these old buildings constituted unique parts of Tibet's architectural heritage, the present author founded a project to inventory, document and study Lhasa's historic buildings that year.⁴ This project, called the Lhasa Archive Project, was presented at the seventh seminar of the International



The Panchen Lama's survey team, 1983 Beijing (after Xizang zizhiqu jianzhu kancha shejiyuan 1999).

Association for Tibetan Studies (IATS) as part of a campaign to preserve Lhasa's old neighbourhoods. Files and extensive photographic documentation were compiled, covering more than 900 buildings in the Lhasa area. The timing was fortunate. In 1993-1994 it was still possible to document a large amount of authentic pre-Cultural Revolution art and architecture, including complete buildings and minute details such as ornamental patterns and carvings. The idea to compile a separate inventory of Lhasa's religious buildings arose in 1994. In the same year, Pimpim de Azevedo and I published a map, carved and xylographed in the Meru Dra-tsang, identifying all extant temples. The intended short book describing the sites was never published, but some of the material has been incorporated into the present work.

In 1996, encouraged by the Lhasa municipality, the project shifted focus from research to actual conservation work and development cooperation, and was reconstituted as Tibet Heritage Fund.⁵ The municipality agreed to cooperate with THF to engage in community-based rehabilitation of sections of the old city, and to restore and upgrade individual historic buildings. The mayor of Lhasa, Mr. Lobsang Gyentsen, chaired the Lhasa Old City Protection Working Group (LOCPWG), of which the present author was vice-chairman, and

Left hand page,

Top: demolition of the nationalized ancestral home of the Shakapa family (Zhwa sgab pa) (1997 AA).

Bottom left: THF rehabilitation of Meru Nyingpa monastery, using traditional earth materials and techniques (1999 AA).

Bottom right: the ruins of Ganden monastery before restoration (1989 JM).



Above: remains of bronze Buddha, Lhasa (1997 AA).

Right: THF team 2000 (YH).



Blue sign, designating one of 93 historic Lhasa houses as protected buildings under order of the municipal government and the Lhasa City Cultural Relics Bureau, here the Tromzi-khang Palace (1998 PdA).



THF codirector Ms. Pimpim de Azevedo became a permanent member. The task at the time was to begin rehabilitation activities as soon as possible to reverse the decay of Lhasa's historic urban fabric. This meant that rather than spending the next five years on necessary feasibility studies, actual preservation work was started immediately, focusing at first on the central Barkor area (see www.tibetheritagefund.org for reports on that project).

A recent UNESCO evaluation of THF's project commended the project 'for its holistic approach to conservation. The project has been systematically undertaken, with an urban-scale conservation plan providing the framework for restoration of specific buildings. The restoration has provided an opportunity to revive traditional construction and restoration techniques, support experienced artisans, and strengthen community pride in cultural traditions and skills.'6

In 1997, THF submitted a list of 83 Lhasa buildings to be earmarked for preservation. On 3 June 1998 the municipality and the Lhasa City Cultural Relics Bureau officially listed 76 (later 93) buildings as protected sites. Listed buildings were then marked with a blue identification plaque. Rehabilitation work covering more than a dozen buildings in the Barkor area, carried out

by senior Tibetan artisans hand-picked by THF, quickly led to a noticeable revitalization of the old town.

After five successful years, the project came to an end in late 2000 because the environment and climate in Lhasa were no longer favorable to conservation and community-based rehabilitation. It is my hope that such a climate will come to exist again, and I wish to thank all our colleagues and supporters in the Lhasa city administration for the time we spent working together, and for the excellent results achieved. Special thanks must be expressed to the Lhasa City Cultural Relics Bureau for their efforts in trying to save Lhasa's historic buildings, to China's State Administration of Cultural Relics, to the Vice-Mayor Ms. Dekyi Dolkar and to the Barkor Neighbourhood Committee. Thanks are also due to the financial supporters of this project; these include the governments and economic cooperation facilities of Germany, Holland, Canada, Finland and Sweden, and the German Society for Technical Cooperation (GTZ), as well as Trace Foundation, MISEREOR, Heinrich-Böll-Foundation, the Shelley and Donald Rubin Foundation, Schweizer Tibethilfe, Shalu Deutschland e.V., the Shalu Association, the Mailman Foundation, the Lost-and-Foundation, the Albert-Kunstadter-Family-Foundation and a host of individuals too numerous to mention.8 Without the crucial early and generous support from Trace Foundation and from the embassies of Germany and Holland in particular, the project would not have been possible.

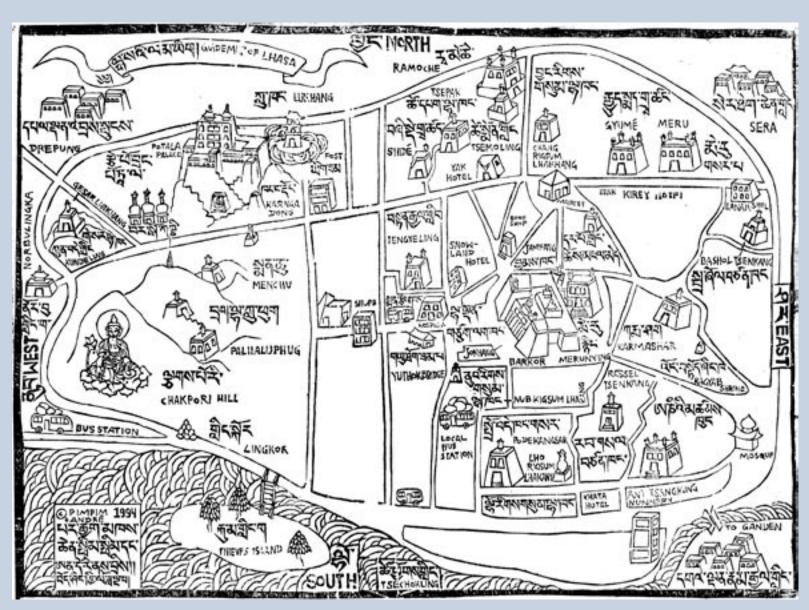
Special mention must be made of the contribution of the project's codirector, Pimpim de Azevedo, whose unyielding commitment to the work has been a constant source of inspiration to all participants. Pimpim and I did all the planning of THF's building restoration and upgrading work, and shared the daily supervision on site (and continue to do so to this day). Pimpim also played an important part in the shaping of this publication. Thanks are due to our Tibetan teachers, some of Tibet's greatest surviving master builders, especially master builder Migmar and carpenters Chuchok and Jampa Kelsang, who have taught us so much. It was fortunate that Sonam Wangdu served the project as friend and consultant. John Harrison taught us the skills of surveying, though none of us could hope to match the beauty of his drawings. For this publication, Matthew Akester has made an invaluable contribution; this book owes much to endless discussions and his editing and improvement of the text. Professor Per Sørensen shared his sources and insights. Lobsang Ngüdrup and Lündrup Dorjé helped to guide me through long source texts. Ken Okuma completed the layout based on my very basic suggestions, while also co-running the Banana Cat Café in Patan. Yutaka Hirako managed our overall well-being and contributed endless patience. Special thanks also to the Isdell Foundation. My parents and Lharigtso provided crucial support.

Over 300 Tibetans participated in the overall THF project, and I would like to thank all of them but can name only a few: Nyima Tashi, Nyima Tsering, Lündup Dorjé, Tseyang, Lobsang, Chökyi, Chuchok and Ama Trasi for their energetic support. THF is also indebted to Professor Heather Stoddard, Enrico Dell' Angelo, An Li, Guo Zhan, Zhan Zhiping, former TAR Cultural Relics Bureau director Mr. Jamyang, former Lhasa mayor Loga, current Lhasa mayor Lobsang Gyentsen, Barkor Neighbourhood Committee Chairwoman Tselha, the late Dorjé Yudon Yuthok, Dawa Norbu, Kenam, Nechung Retrö, Minyak Chökyi Gyentsen, John Niewoehner, the late Hugh Richardson, Heinrich Harrer, the late Dungkar Rinpoché, former TASS director Puntsok Tsering, Tseyang Chang-ngöpa, Tenzin Gelek, the Beijing Tibetan Studies researcher Tenzin, Potala Jampa Kelsang, Maurice Leonhardt, Arif Hasan, Prafulla Pradhan, Somsook Boonyabancha, Gregor Meerpohl, Holger Green, Amy Heller, Elke Hessel, Margaret Miller, HIM Haile Selassie Jah Rastafari,

Frances Howland, Sigrid Joss, Maria-José de Azevedo, Gladys Martinez, David Holler, Jakob Winkler, Dr. Robert Barnett, Uli Eltgen, Marialaura di Mattia, Christian Luczanits, Li Ng, Gwendy Feldman, Carol Rattray, Hollis Brookover, Valrae Reynolds, and in Berlin Sylvester Kaben, Alex Müller and Moritz Wermelskirch. More than anything, I also thank the people of Lhasa for their generosity, hospitality and obvious love for their city.

Notes

- 1 (located on the dedication page) Roth 1987 introduction.
- ² Budala gong, Beijing 1999, edited by Xizang zizhiqu jianzhu kancha shejiyuan, see bibliography.
- See bibliography under Chinese sources (Sonam Wangdu's name in Chinese pinyin is Suolang Wangdui).
- Initial support for the documentation work came from the British Royal Geographic Society, Freie Universität Berlin, Shalu Association (Paris) and Verein Freie Kultur Aktion (Berlin).
- 5 Professor Heather Stoddard made a crucial contribution to the founding of THF, see also the foreword for Professor Stoddard's recollection of the events
- OUNESCO Regional Unit for Social and Human Sciences in Asia and the Pacific, dated 2 September 2004.
- Several protected buildings, including Ganden Khang-sar and the Pa-lha mansion, have been demolished since the end of the cooperation with Lhasa Cultural Relics Bureau in late 2000.
- We also thank the Norwegian National Commission for UNESCO and the Tibet-Norway Network for University Cooperation for their initial interest and support.



Blockprint map of Lhasa, showing major religious sites, carved and printed at Meru Dra-tsang monastery (1994 PdA and AA).

Introduction

Purpose and Scope of the Present Study

There is no typology of Tibetan monastic buildings yet, and only a handful of serious studies deal with Tibetan monastic architecture (apart from the work published as a result of the Panchen Lama's initiative cited above, Khosla 1979, Vergara and Beguin 1987, Vitali 1992 and Su Bai 1998 have made important contributions in this field). Authoritative specifications regulating the details of Tibetan temple construction still remain largely unrecognized due to the lack of detail in available sources. Different historic and regional architectural styles remain largely unrecognized (Stoddard, Klimburg-Salter, Lo Bue, Jackson and Luczanits, among others, have contributed important identifications of artistic styles in Tibetan religious art).

The present study cannot be seen as an attempt to fill the existing gaps and unravel the evolution of Tibetan monastic architecture. The aim of this work has been to document existing historic buildings in Lhasa in order to develop proposals for their adequate conservation and rehabilitation. Details of historic and traditional art and architecture were identified, registered and subsequently evaluated. Initially, the focus lay on vernacular architecture. However, Lhasa's monastic buildings contain some of Tibet's earliest and finest architecture, and it was found that their rehabilitation was essential to the success of THF's area conservation program. They were therefore included in the documentation work. We then chose to divide our material, to present for this first publication an inventory of Lhasa's historic religious buildings, compiled at the threshold of the third millennium. A future volume will include an inventory of Lhasa's vernacular architecture.

The choice of Lhasa for the investigation has been opportune. The extant monastic buildings surveyed span the entire length of Tibetan history. They include the earliest temples in Tibet, dating to the imperial period, chapels built during the long period between the 'later diffusion' of Buddhism and the reunification of Tibet in the 17th century, during the Ganden Po-trang period and modern (post-Cultural Revolution) structures.

Unlocking the past of a building is the first duty of the conservator. During the survey work, the past often appeared only a layer of dust away, but at other times it seemed like an eternity away. Generally speaking, the work did not consist of excavating a culture perished long ago. The survey teams found an active local community that upheld their traditions by making regular congregational and devotional use of Buddhist sites. Recognizing this as a remarkable 1300-year-old tradition is a useful reminder to the conservator that the community for which sites are conserved matters importantly to his work.

The publication of this material addresses not only the present condition of Lhasa's historic monuments, but also the question of their preservation. The urban transformation of Lhasa in recent years has dramatically diminished the city's physical heritage. Lhasa has lost more than three-quarters of its historic structures, making technically adequate and community-based preservation a matter of vital importance. The present publication makes several years' worth of documentation material available, hopefully to benefit current discussions and efforts regarding historic preservation in Tibet.

Methodology

The earliest part of the project, in 1993–94, lay in the identification of all historic buildings in the old city area, and then to distinguish those that currently were or had in the past been serving religious purposes. After the start of the official conservation program, the sites were investigated and documented in detail in cooperation with the municipality. Full architectural surveys were made, as proper documentation either did not exist or was insufficient. The contents and conditions of every room and space within the sites covered have been noted and photographed, and relevant building details registered. Building conditions were often analyzed in consultation with local master builders.

The survey archive now consists of several tens of thousands of photographs and over a thousand original survey drawings, and is currently growing to include historic and traditional sites in other regions with Tibeto-Buddhist architecture, including Mongolia and Ladakh. The material is organized in the form of an interactive database, a prototype of which can be seen on our Web site, www.tibetheritagefund.org.

A large number of people took part in the architectural survey work. THF set up a local documentation program in 1997 with the aim of obtaining complete documentation of every single historic building in Lhasa. Five Lhasa-born men, Dakar, Jian-Jun, Huang Xiao-lin, Loden and Gelsang, were trained as draftsmen by John Harrison, Ken Okuma and the present author. The results of this training program were extremely satisfying, having produced surveys of very fine quality. The progress made can be seen in some of the drawings. We were also fortunate to have had the participation of a number of universities, with architectural classes and individual students arriving to help to get as much of old Lhasa surveyed in time as possible. These included the Chinese University of Hong Kong, Technische Fachhochschule Hamburg, Technische Fachhochschule Wissmar, Tongji University Shanghai, and a number of individual German, Chinese, Japanese and Swedish students (all contributors are named in the chapters where their work appears).

Each site was surveyed using locally bought measuring tapes and a German 'Bosch' infrared device (model DEL 300601098003). The survey plans were all drawn by hand, and subsequently digitized, corrected or redrawn where necessary, and prepared for presentation by Ken Okuma and the present author. Satellite imagery was used to verify (and correct) the site surveys.

All survey drawings and maps published here were created (and financed) entirely under the THF Lhasa Old City Conservation Project.

The findings are presented in the order of general site description, summary of past and recent history and results of the architectural survey. Listings of components with important conservation value are then followed by preliminary analysis and evaluation. The sites are arranged in order of the age into which they can best be placed.

A concluding chapter summarizes the findings, and a proposed typology and chronology of Tibetan Buddhist architecture found in Lhasa is presented in the form of a table.

Dating

It has not always been possible to obtain reliable founding dates. In addition, monasteries have been repeatedly enlarged, restored and rebuilt over the centuries. Whenever possible, we have tried to identify building components that belong to a particular period of construction activity, and discern those elements that have remained unchanged.

Interdisciplinary research was carried out in order to arrive at usable preliminary chronological and typological conclusions, incorporating art historical, dendrochronological, textual and oral evidence. In more than one case, construction dates had to be revised several times, trying to bridge written sources with oral traditions, historic depictions and information gleaned from site surveys.

Historical research was conducted on site, with an additional research phase in Beijing and Berlin. During this period, the facilities of the Himalayan Buddhist Resource Center, the German State Library, the British Library, the Tibetan Studies Center in Beijing, the Tibetan Academy of Social Sciences and the Pitt Rivers Museum have provided invaluable assistance. In Lhasa, we were very fortunate to have had the help of the eminent Tibetan historian Dungkar Rinpoché until his untimely death in 1997.

Main periods of Lhasa history, which will be referred to in the text, are defined as follows:

The imperial period (7th-9th c.):

Maturity of Tibetan civilization, characterized by important cultural exchanges with the Indian cultural realm, China and Central Asia, and construction of the first Buddhist temples and monasteries.

The long period between the renewed expansion of Buddhism in Tibet and the ascendancy of the Gelukpa school can be divided into a number of periods with particular significance for Lhasa:

• The period of the reestablishment and expansion of Buddhism in Tibet, from the 'later diffusion of Buddhism' (Tenpa Chidar) through the following two centuries (i.e. 10th–12th c.), characterized by the consolidation of Buddhism as the main religion, and renewed cultural exchanges with India. New monasteries were founded across Tibet (including in Lhasa) and existing ones restored. This is a period for which sources on Lhasa are scarce.

- During the Tsel-pa period, 12th–14th c., Lhasa was governed (and its monasteries restored) by the rulers of Tsel Gungthang. During this period, there were renewed cultural exchanges with Central Asia and China, and Tibetan art and architecture were increasingly subject to indigenous refinements and developments.
- For much of the 15th c., Lhasa was governed from Ne'u-dzong while Tibet was under Pagmo-drupa rule. From there Jé Tsongkapa received support for his activities in Lhasa around the turn of the 15th century (restoration of the Tsukla-khang, founding of Drepung and Sera and establishing the Mönlam Chenmo festival).
- The Ü-Tsang rivalry period, 15th–16th c., during which Tibet's two central regions were engaged in bloody civil war. Lhasa was governed by the Kyishöpa-s, Jé Tsongkapa's Gelukpa school challenged by the followers of the Karma-pa.

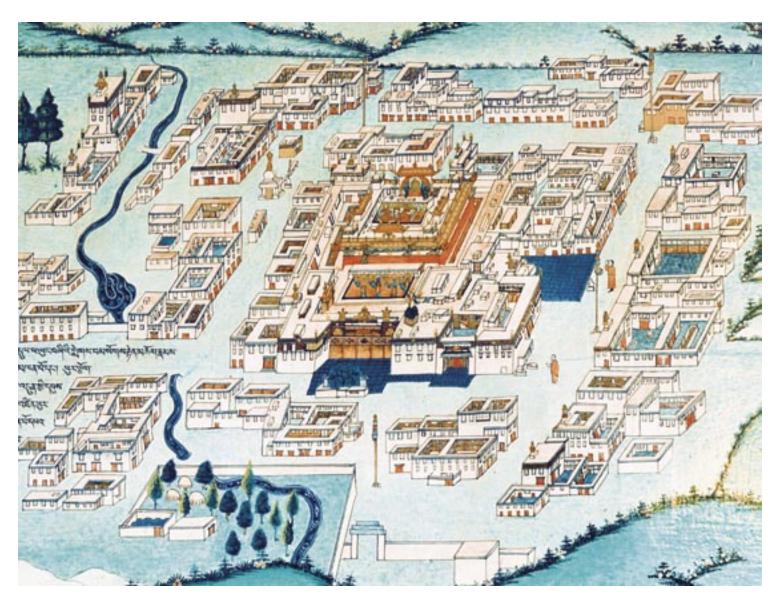
The Ganden Po-trang period (1642–1959); it is useful to mention the following subperiods:

- Rule of the Fifth Dalai Lama and his regents (1642–1705, including the reign of Dési Sangyé Gyatso), major renovations of 'dynastic temples' such as the Lhasa Tsukla-khang and Ramoché and important new construction projects including the Potala Palace and the Chakpo-ri medical college.
- Rule under the Qing government (1750–1911);
 Tibetan regents confirmed and sometimes directly chosen by the Qing emperor, the so-termed 'Regency Seats' constructed in Lhasa.

 Rule of the Thirteenth Dalai Lama (1895–1933), characterized by reforms in government and modernization of society (introduction of electricity, motor vehicles, radio communication), which also led to a modernization of the architecture (use of iron roof beams, import of glass, etc.).

People's Republic of China period (since 1951)

- 1951–1959: Monasteries in central Tibet restored following the enthronement of the Fourteenth Dalai Lama; new monasteries built in this period represent the last development phase of Tibetan architecture organized under the traditional guild system.
- 1959–1978: General ban on practice of religion, monasteries either completely destroyed or seriously vandalized and converted into nonreligious use (residential, meeting space, grain storage). Traditional architecture is discredited.
- 1978–1984: The Lhasa municipality revived and modernized traditional Tibetan architecture; buildings dating to this period represent the last development phase of traditional Tibetan architecture before the employment of the concrete frame became ubiquitous.
- Since 1985: Increased deployment of industrial construction technology and decline of traditional building skills. The traditional timber frame is designated as 'backwards' and 'unsafe' by the authorities, and replacement of traditional buildings became an official development target.
- 1998: Ninety-three residential buildings are listed as protected by the municipality.



Historic Lhasa, mineral colors on mud plaster, Norbulingka Palace 1956 (1994 AA).





Panoramic view of central Lhasa from the south (1998 AA).

Setting

The city of Lhasa is located at an altitude of 3,648m above sea level, in a valley formed by the river Kyichu, a tributary of the Tsangpo (Brahmaputra). The dominant surrounding peaks range between 4400m and 5300m above sea level. The Lhasa valley is sheltered from the harsh winds that roam much of the Tibetan plateau, and benefits from a microclimate that can be termed moderate. It is also characteristically dry.

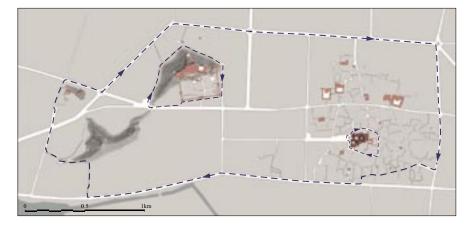
Remains of the earliest settlement identified so far, dating back to about 1500–2000BC, have been excavated three kilometers to the north of the present-day city, at the base of the mountains. The city is built on a plain of marshy ground in the center of the valley.

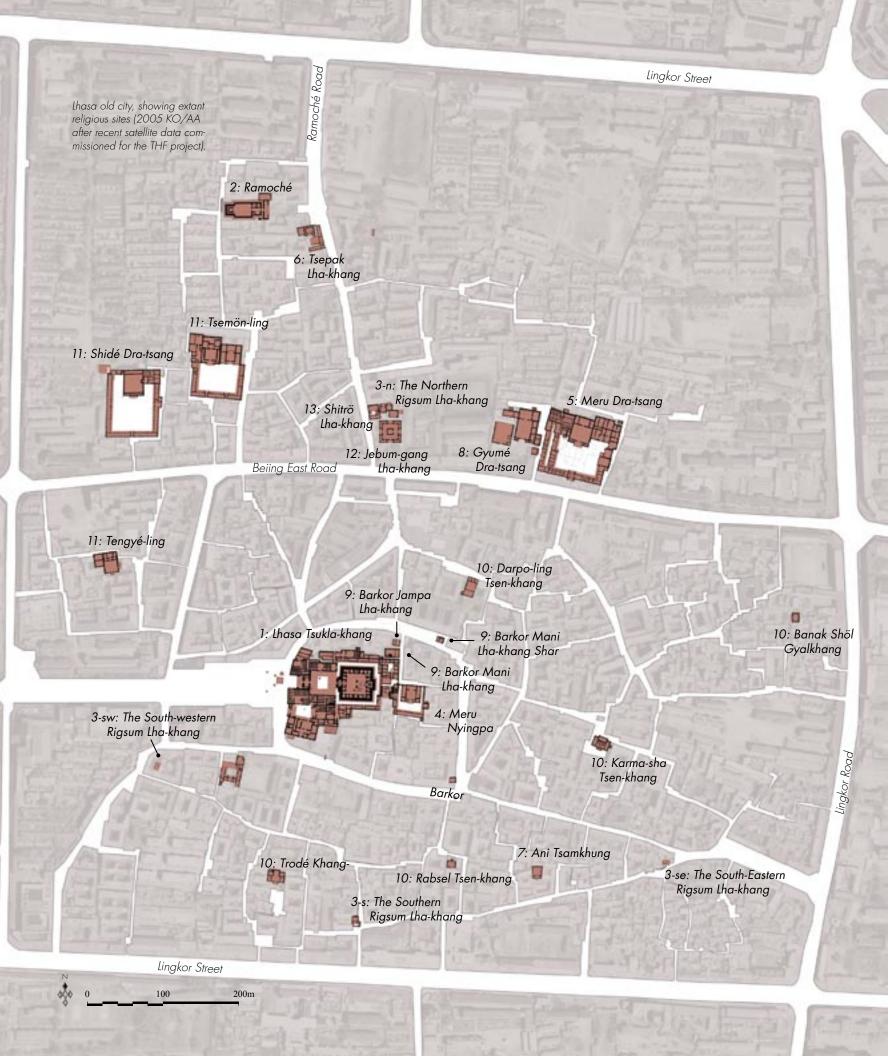
Our knowledge of early Lhasa is sketchy at best. The 33rd Tibetan king, Songtsen Gampo, founded Lhasa during the first half of the 7th century. Two of his five queens fulfilled an ancient prophecy by bringing Buddhist images and ritual knowledge to Tibet. In the late 630s, the first Buddhist temple in Tibet was built at the behest of princess Bhrikuti, the Nepali bride of king Songtsen. This was the Rasa Trul-nang (miraculous self-manifest temple of Rasa), later commonly called the Lhaden Tsukla-khang (Lhasa Cathedral) or simply Jo-khang (house of the Jowo, precious Buddha image). The Trul-nang temple's importance was recognized by Songtsen's successors (in the form of documented stone edicts), and the temple became an important national focus. Its existence eventually gave Rasa the status of a holy city, and a new name: 'Lhasa,' the 'place of the gods.' In Tibetan historic sources as well as in popular

parlance, the name Lhasa only referred to the Tsuklakhang and its immediate surroundings. Until the 1950s, Ramoché was considered to be outside of Lhasa. Public mini-buses driving from the Potala towards the new square in front of the Tsukla-khang still announce their destination as 'Lhasa.'

The Lhasa valley became an important seat of monastic learning, attracting students from as far away as Mongolia and Ladakh. In the 17th century, Lhasa was reestablished as national capital, and much of the city's historic urban fabric as we know it dates from that time. The city's importance as a center of monastic learning increased further. Being on the crossroads for trading caravans from Nepal, India, Ladakh, Central Asia and China, Lhasa was also a major trading center.

Map of Lhasa Lingkor area (2001 KO after recent satellite data commissioned for the THF project).







Early 20th century efforts under the Thirteenth and Fourteenth Dalai Lama-s to combine modernization of Tibet with preservation of the ancient way of life were continuously thwarted by the conservative religious establishment and the aristocracy. China's People's Liberation Army overwhelmed a society distinctly unprepared for modern political or military challenges. After the exodus of Tibet's ruling classes, property was nationalized and agricultural production reorganized under a commune system. Monasteries were destroyed and Tibetan customs and traditions branded as feudal, and forbidden. After the political reforms of the post-1978 period, Tibetan religion and customs underwent a process of limited rehabilitation. By the mid-1990s, the economic reforms that had already transformed most of China also reached Lhasa, resulting in rapid modernization of the city. Today, Lhasa has modern roads and several high-rise buildings, and there is very visible evidence that the city is still rapidly expanding.

The 7th century Tsukla-khang temple is still the spiritual and physical heart of the city (if not of Tibet). In harmony with the Buddhist traditions, several circumambulation routes lead clockwise around the temple, enabling pilgrims to venerate Tibet's most holy shrine and to gain merit by doing so.

The 'inner circle,' the Nangkor, leads around the Tsukla-khang (the central building). The 'intermediate circle,' the Barkor is also Lhasa's main bazaar street. Even today, in the early hours of the morning, and at

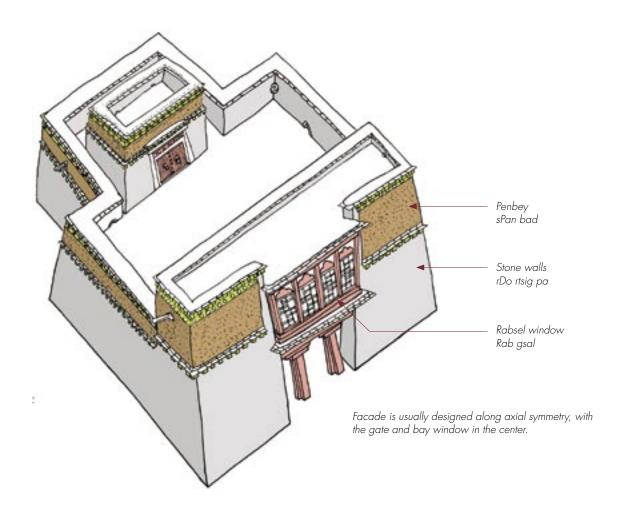
sunset, a visitor can ascertain that the Barkor is still a religious circumambulation of major importance for Lhasa citizens and pilgrims. Most Lhasa Buddhists perform *kor-ra* (circumambulation) daily. The outer circle or 'continental circle,' called Lingkor, leads around the pre-1950 limits of the city, encompassing all of the 40-odd temples, monasteries and shrines that once existed in greater Lhasa.

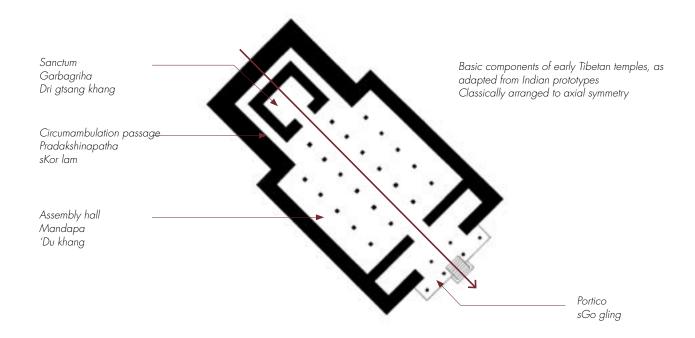
In 1948, according to Peter Aufschnaiter's survey, the central area of Lhasa consisted of 600-odd buildings (900 if other districts such as Shöl are included), populated by some 30,000 people. Today's old city is an area of 1.3 square kilometers, officially defined by the Lingkor North, Lingkor East and Lingkor South Roads, and the Do Sengé Road to the west. Far fewer than 100 of the historic buildings recorded in 1948 still stand (see THF Web site for database of remaining buildings). Despite the recent construction boom, the old city has kept its separate physical character. The urban structure is different, much denser than in the rest of the city. According to available information, 50,000 people (mostly ethnic Tibetans) live in the old city area, whereas the entire city population is estimated to be around 400,000 people.

The present publication includes only Buddhist sites within the old city, which means a number of important sites are not included, like the temples at Marpo-ri, Chakpo-ri, Kundeling and the Norbulingka.

Central Lhasa, in the center the gilded rooftops of the Tsuklakhang, far left top Ramoché, far right bottom the Tsamkhung Nunnery, top right the yellowand-orange Chenguanqu seat of the city administration (1994 courtesy ART).

Principal elements of Tibetan Monastic Architecture



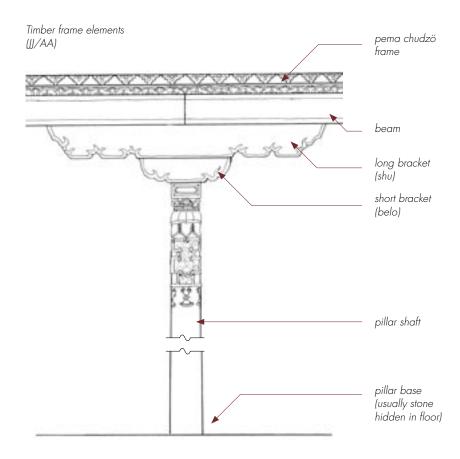


Notes on the Fabric of Central Tibetan Monastic Architecture

The earliest Buddhist shrines built in India contained only abstract symbols for veneration. Under the influence of the evolution of the Mahayana school, these symbols were substituted from the first century AD onwards by images of the Enlightened One himself, scenes of his life and images of a developing pantheon of deities. Two major types of devotional buildings have developed: shrines with a single devotional center (often a chaitya hall) and the vihara cloister-hall surrounded by shrines and residential cells. A number of common structural elements can be defined—the entrance portico (providing a symbolic gateway into the sacred space), the assembly hall (mandapa) and the sanctum area (garbagriha), usually with a passage for pilgrims to perform merit-bringing circumambulation (pradakshinapatha).² These correspond to the basic components identified in Tibetan temples, respectively the portico known as go-ling (sgo gling, also sgo khang), the assembly hall known as du-khang ('du khang) and the sanctum known as dri-tsang-khang (dri gtsang khang). The internal ambulatory or kor-lam (skor lam) occurs only in early sites, after the 15th century it disappears, often replaced by external passages.

Tibetan monastic architecture reached its maturity after the Indian prototypes were abandoned, and the design of assembly halls, ambulatories and sanctum spaces was remodelled to suit indigenous preferences. Prominent architectural components added as a result include the rabsel (rab gsal) bay window sitting room for senior monks, the skylight (mthongs), sometimes in the form of a balustrade (seng g.yab), and external service rooms and buildings attached to the temple rooms.

All sites investigated were designed for the standard Tibetan forms of religious practice and service. Monks are seated on long rows of cushions between the pillars, with elevated thrones reserved for important lama-s. Pilgrims can perform prostrations (phyag-'tshal) and ritual circumambulation (skor ra), make prayers and offerings to individual shrines or deities (by lighting butterlamps, offering khata scarves and symbolic gifts). The assembly hall is also the space where they can consult with individual monks and lama-s, listen to teachings and watch rituals being performed.



The basic method of construction and the materials used are essentially identical for all sites surveyed, unless mentioned otherwise.

The construction is based on an internal timber frame, with juniper [Juniperus tibetica] the preferred wood for inner chapels. The majority of timber elements identified during the investigation were made from poplar [Populus sp.]. Walls in Lhasa are generally built in rubble masonry, with nonbinding mud mortar. Upper floors are often built with sun-baked mud bricks. Rammed earth walls, common in other parts of Tibet, have only been found in a handful of cases in Lhasa.

The basic module consists of pillar and beam. Average distance between two pillars found among Lhasa buildings is 2.2 meters. Tibetans describe room size by the number of pillars or pillar-beam modules, and we adopt this method in the site descriptions. The pillar-beam module also includes two brackets,

the smaller bracket (be lo) and the larger bracket (gzhu—lit. bow); these are also sometimes referred to as pillar capitals. Only rarely is there a separate detached capital between pillar and bracket.³ The design of the brackets varies and can be an indicator to the period of construction, but only a handful of distinct styles have been identified so far. The interior of monastic assembly spaces is usually illuminated by a central skylight (mthongs), supported by raised pillars (byar ka or in classical literature gnam yang ka ba) of greater height.

The roofs are flat, built by layers of rafters, pebbles and mud. They are often waterproofed using a technique and material known summarily as arga (ar ka), tamped and polished earth with high lime content.

The outer walls if built from stone are left plain; only mud brick walls are plastered. The interior walls are plastered with various qualities of earth and polished for optimum smoothness. Murals are applied on a dry mud surface coated with lime. Until 1959 high-quality pigments made from semiprecious stones were used, with animal glue as binder.

For further components and Tibetan architectural terms occurring in the text, refer to the glossary

Decorative elements

Distinct color schemes and a number of decorative elements distinguish a religious site from other buildings, and also for zoning within monastic compounds. The walls of the *sanctum* area of temple buildings and the protector chapel are generally colored maroon red. Monastic residences, assembly halls and other utilitarian parts of monastic complexes are usually whitewashed. Rooms in which either a Dalai Lama or someone of comparable status have once spent the night, as well as homes of particular oracular deities, are colored

ochre. Red and ochre are considered sacred colors.

Many additional color schemes exist outside of Lhasa, such as the bluish grey of Sakya monastery and the red-white-blue stripes symbolizing the three bodhisattva-s known as Rigsum Gonpo.

Among the structural monastic decorations, the most obvious is the Chinese-style pagoda roof (*rgya phib*, spelling variations incl. *phubs*), built of gilded copper or glazed tiles over a timber structure. More peculiar is the maroon frieze called *penbey* (*span bad*), the 'band of the shrubby cinquefoil' [*Potentilla fruticosa*]. This has no structural function, but is purely decorative and marks monastic and government buildings. The width of such a frieze reflects the status of the building's occupant. Imitation *penbey* friezes have become popular in modern times as decorations for restaurants and hotels.

Nonpermanent decorations have been only briefly included in the conservation inventory; most of the originals were lost during the 1960s. These include banners, cylinders and sculptures erected along roof parapets, and the symbolic depiction of the eight-spoked *dharma* wheel flanked by two deer commonly placed above the main entrance.

The architectural structures described are but the setting, and only the placing of images completes their purpose. However, in the case of Lhasa, most of the original objects of veneration—clay sculptures, metal images and paintings—have not survived the post-1959 period, with some notable exceptions. New images have since been substituted, usually based on oral transmission and memory. Their recreation has often been limited by financial restraints, a 20-year gap in artistic transmission and lack of photographic records.

Notes

- A number of THF's survey drawings, as well as drawings by Tibetan and Chinese colleagues from the Cultural Relics Bureau (such as drawings of the Potala Palace), have been published in the Lhasa Atlas (Larsen and Sinding-Larsen 2001), but unfortunately these were not credited according to international publishing standards. Except for the incomplete survey by Norwegian students of the Barkor Tashi-Lhunpo Khang-sar and the Shatra House documentation by Minyak Chökyi Gyentsen, all architectural drawings were taken from existing publications.
- For a useful overview of the subject, refer to Meister 1988. In the present volume, diacritical marks for Sanskrit terms were omitted.
- ³ In Lhasa, the only case where we found detached pillar capitals was in the Tromzikhang Palace (built around 1700).