



Figure 1: The temple of Lo Gekhar after the snowfall on April 21.

Seismic Strengthening and Restoration of Lo Gekhar

U.S. Ambassadors Fund for Cultural Preservation, Award No. SNP40020GR0042

Project Report, Third Year, Third Quarter – April to June 2023

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Norbusum Foundation (NGO)

Himali Hotel, Jharkot, Ward no. 1, Baragung Muktichhetra 33107
Mustang District, Gandaki Pradesh, Nepal

Kunjon Thakuri,
Chairman
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Report Overview

The project commenced its work on site in the second week of April. On April 12 the materials for the accommodation and construction materials arrived at the site. This year, all project members and workers could be accommodated in the hotel building that lies in close proximity to the monastery, which could be rented from the Marang community. Conservation architect Thomas Schrom, art historian Christian Luczanits and painting expert Sreekumar Menon also visited the site in April, and Christian Luczanits also in June. The stone panel displays of the Chenrézik Lhakhang (Avalokiteśvara Temple) and the Néten Lhakhang (Arhat Temple) were completed. Major electrical works were also completed in this quarter by electricians hired from Pokhara. Otherwise, much of this quarter was spent on improving and complementing the interior wood works, complete internal painting works on the caretaker's side, roofing the courtyard and more broadly improving the roofing throughout. Late April was unusually cold (Figure 1) this year, slowing down the work in the first month considerably.

Purchase of Materials

The major purchases made in this quarter were items for the accommodation of the project workers in the rented communal hotel building. Well-seasoned saal wood, a type of hard wood, for the stone panel frames were already purchased in the last quarter. All electrical components were purchased from Pokhara with the estimates prepared by the electrician during his visit to the site two months before the project commenced.

Architectural Work

Conservation architect Thomas Schrom visited the site in April and assessed the architectural work done in the year before. He suggested many detail improvements for the works done and also proposed designs for the roofing of the courtyard and the wooden stairs in the courtyard of the caretaker's quarter and to the roof. A big difference with all architectural work was made by the carpenters hired from Kathmandu, which were recommended by Tsewang Bista, board member of the foundation. Specifically hired for the stone panel frames their presence made a big difference to the quality of the woodwork throughout, the stairs and railings in the atrium of the caretaker's quarter providing a good example in this regard (Figure 20).

Roofing the Courtyard

Despite the work done last year in making the floor of the courtyard above the Assembly Hall as waterproof and usable as possible even under adverse weather conditions, the small existing drainage pipe could not be expanded due to the Kanjur Lhakhang being built over it. Accordingly, the drainage of this area still represented a risk, and it was considered to cover the entire courtyard with a wooden framework holding transparent sheets. Thomas Schrom proposed a design for such a lightweight skylight covering the courtyard, which was constructed this quarter.

Accordingly, the adobe parapets around the courtyard were dismantled and a main supporting frame was built of wood above the existing timber structure. Round poplar beams were purchased from Sakre and were connected to the square frame to provide the support for the rafters and the fiber sheets (Figure 2). Rectangular rafters were then screwed onto the poplar beams (Figure 3), and the corrugated fiber sheets were screwed to the rafters to complete the skylight (Figure 4). Pine boards were installed over the prepared frames on the internal side while waterproof plyboards were used for the exterior surface. Similarly, bitumen sheets were extended on the ply board surface as a waterproofing measure and also for the durability of the exterior wooden surfaces from natural wear and tear.



Figure 2: The construction of the frame for the roofing of the courtyard.



Figure 3: The finished frame for the courtyard roof.



Figure 4: The roofing of the courtyard largely completed.

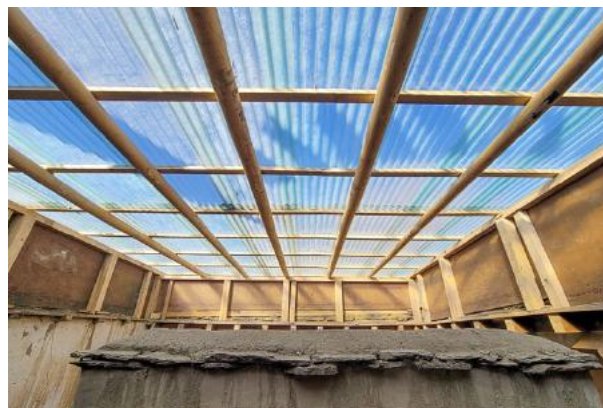


Figure 5: The interior of the roofed courtyard before finishing its side walls.

Figure 5 shows the construction from the interior of the courtyard. The surface of the square frame was later boarded up to give it a more smooth appearance.

Painting Works

The painting of the walls has been carried out with the same materials as were used previously in the respective rooms.

In most rooms, natural mineral colors were used to paint the walls. These had to be sourced from several places in Upper Mustang. The white, yellow, blue, and orange colors could all be sourced from the Lo Manthang area, while the maroon used extensively in monasteries needed to be sourced from the old Dhey village. Accordingly, a jeep was hired for a day to go to the Dhey village to request the village head to collect the red colored stone from the mine which is about two and half hours jeep ride from Lo Gekhar. A ritual seeking forgiveness by burning incense and prayers was conducted at the mine before the ground was dug.

Once sourced, these natural colors need to be hand ground, sieved, and soaked in water before application. All colors—maroon, yellow, white, and blue—were soaked in water and mixed with a water-soluble glue. The maroon color was further boiled with sugar and then sieved again on a muslin cloth before application. Temple spaces, like the Guru Lhakhang were painted with the usual border motives, namely a cloth valance at the top and multicolored stripes marking the bottom of the main area (Figure 6).



Figure 6: The Guru Lhakhang room after its walls were painted with natural colors.



Figure 7: The VIP room restored to its original appearance.

Acrylic paints were used to restore the wall painting of the VIP room (Figure 7), the window of the VIP room (Figure 8, Figure 9), and the window in the guest lobby following their original decoration (Figure 10, Figure 11).



Figure 8: The window to the VIP room in September 2022.



Figure 9: The newly painted window and surrounding courtyard in June 2023.



Figure 10: The window in the guest lobby before repainting.



Figure 11: The window in the guest lobby after repainting.

These decorations were done by painters brought to the site for work on one of the new constructions in front of the temple, and they could complete the work in the evening hours of their workdays.

Stone Panel Frames

Originally it was expected that the new frames for the stone panels in all relevant rooms would be completed in 2022. However, the local carpenters that were hired were not skilled enough to create the frames in the desired form. Thus, for spring 2023 skilled carpenters from Kathmandu were hired to complete this task. They proposed that the frames are constructed using Saal wood with grooves holding the panels cut into them using a router machine. The grooves were cut deep enough to enable the insertion of the panels once the frame is completed, as has been proposed by Christian Luczanits. This way, the panels rest in the frames without taking pressure from any sides. In future, these panels can be easily taken out or put back into their frames for cleaning and maintenance.

Frames of this type are foreseen for all the three walls of the Guru Lhakhang (Upper Sanctum) as well as the Arhat panels. This quarter the frames for the Arhat panels have been completed (Figure 12, Figure 13, Figure 14), while those for the Guru Lhakhang are still under construction.



Figure 12: The frame for the Arhat panels under construction.



Figure 13: The completed frame for the arhat panels before mounting them.



Figure 14: The Arhat panels mounted in their original composition within the new frame.

The solution for the Avalokiteśvara panels needed to be different as here the panels are of considerably different sizes. This fact also resulted in many of them being damaged in the past to fit them in the previously used frames. Instead, Christian Luczanits proposed to mount them with iron clamps on sturdy plywood support forming a shrine like environment. This also enables to display these panels in their historical succession from the left side of the entrance to the room clockwise.

Accordingly, the carpenters constructed this support structure using a double layer of waterproof plywood supported by vertical rafters. The structure further was attached to the floor and beams to increase its sturdiness. Once constructed, the surface was sanded and several layer of shellac polish were applied (Figure 15). Strong iron clamps of custom width according to the varying thickness of the panels were prepared in Kathmandu. Two of these clamps support the stone panels from the bottom and hold its weight, while another one placed in the top area secures it in place. Again, there is no pressure on the panel beyond their own weight. The panels were mounted in this way in June 2023 (Figure 16), and Christian Luczanits supplied labels for each of them.

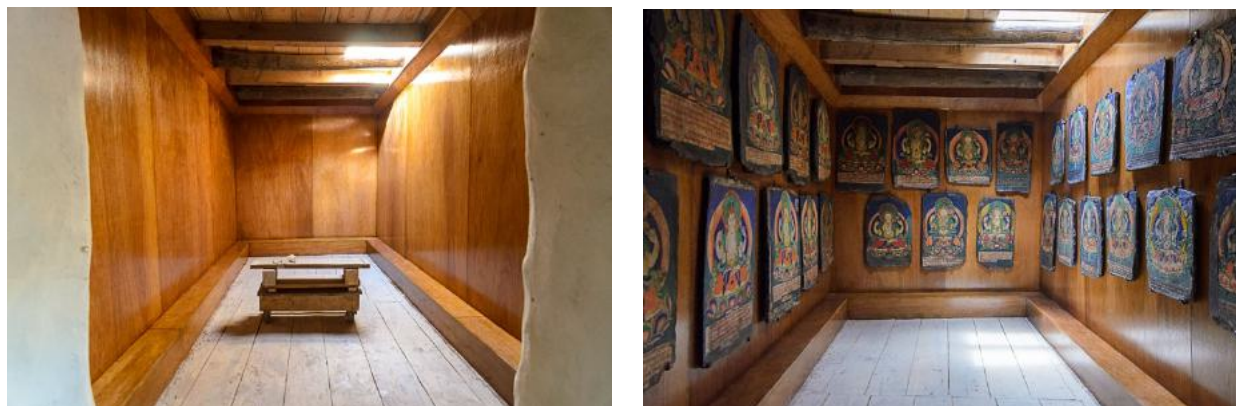


Figure 15: Avalokiteśvara Temple room prepared for the stone panels.

Figure 16: The Avalokiteśvara Temple with the stone panels mounted in natural light.

The new displays have greatly impressed their first visitors.

Electrical Work

The electrical work on the temple and the caretaker side was prepared through a planning and estimation visit by an electrician from Pokhara in early February. Materials were bought after these estimates, and this quarter the new system was installed. Essentially there are two electric systems, one grid powered and the other solar, with mini circuit breakers installed in each room to minimize the risk of fire due to short circuit.

Work began with the removal of old wiring, light points, and unused solar lines (Figure 17). Then new lightings were installed in the temple. Two flood lights were installed on the two sides of the main statue, while a center light was installed for backup solar power (Figure 18). Focus lights were used to light the statues on the left and the right sides in the main shrine that previously had no dedicated lights and were not properly visible to the pilgrims and visitors. The stone panels in the assembly hall were also lit using flood lights installed on the capitals (Figure 19).

Likewise, the caretaker's mansion was equipped with a completely new wiring.



Figure 17: An example of the multiple, partially dysfunctional lighting systems used previously in the assembly hall.

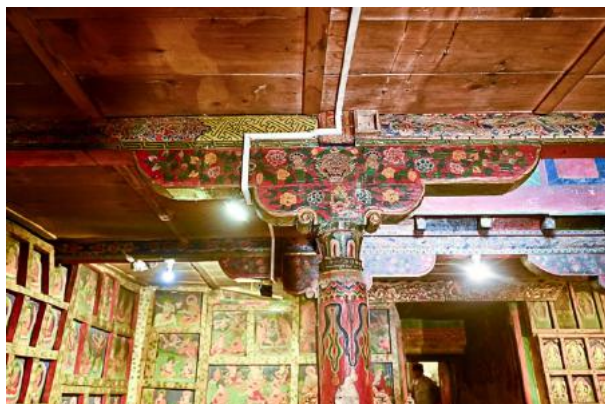


Figure 18: The same area of the assembly hall after the installation of the new lighting.



Figure 19: View of the Assembly Hall and the sanctum in the back when electricity is available and all lights are turned on. The white bulb in the centre is from the solar backup system.

Atrium of Caretaker's Quarter

In the atrium of the caretaker's quarter, the old adobe parapet walls have now been replaced by a wooden railing.

The staircase to the upper floor was also moved to a more accessible location from the middle of the courtyard. A wide wooden staircase was designed by Thomas Schrom and

constructed in this quarter. The base platform on which it is resting was built of stones. The staircase was completed with a linseed oil polish (Figure 20).



Figure 20: View of the new railing and staircase in the atrium of the caretaker's area.

Bathrooms

The drainage of the bathrooms and their tile works were completed in this quarter. The drainage pipes of the attached bathroom and the visitor toilets on the ground floor the caretaker's mansion has been connected to the cess pit that was constructed last year. The drainage of the old toilet is connected to the old cess pit on the south side. All the three toilets have been equipped with tiles. Chicken mesh was installed on the mud wall surface and then plastered over to make sturdy surface for the tiles.

The plumbing works for the toilets and bathroom will be carried out in the coming quarter. It is being planned to run the plumbing lines internally over the walls which will minimize the danger of freezing water in the pipes during the winter. The exposed pipes will also ensure easy maintenance in future. Similarly, the sanitary and other bathroom fittings will also be completed in the next quarter.

Roof Access

The new access to the roof has been built from a room on the caretaker's mansion that was formerly used to store firewood and dried cow dungs by the caretaker. The same room is now used to store the batteries for solar lights and the main power control system is also installed here (Figure 21). A new wooden staircase was prepared by the carpenters. The access to the roof has been designed as a wooden trap door with fiber sheets on the top (Figure 22).



Figure 21: Battery storage and main electrical power control in the room that also allows access to the roof.



Figure 22: The access to the roof is covered by a wooden trapdoor, here under construction.

Repair of Mani Wheels and Chörten

The mani wheels installed on the south and west of the temple were repaired. The old joists and round sticks were rotten and the prayer wheels had tilted outward. The roof was completely dismantled and reconstructed using salvaged and new wood. Round sticks salvaged last year from the floor of the Guru Lhakhang were used for the roofs. A layer of brushwood was laid and then the mud mortar was added. Finely sieved clay was spread before laying the plastic sheet. The plastic sheet was then covered with mud mortar and flat stones were arranged (Figure 23).

The only chörten with brushwood on the north-east side was repaired last year. The other chörten were repaired in this quarter. The weed and grass grown on the roofs were removed along with pile of mud gathered over the time. Some of the tops that had either sunk or tilted were dismantled and rebuilt using the mud bricks. The flat stones were rearranged and replaced where necessary to divert the water from draining over the plastered surface. The chörten will be given a color wash in the next quarter (Figure 24).



Figure 23: Repair of the mani wheels to the back of the caretaker's quarter.



Figure 24: The temple after the repair of all mani wheels and chörten as well as plastering the temple.

Plaster

As part of the exterior work the exterior of the temple has been replastered (Figure 24). In the coming quarter a new color wash will be added to the entire structure.

The clay on the roof turned out to take on too much water in areas. Thus, much of it had to be redone this year with a better plaster composition as suggested by the tests Sreekumar Menon has made.

Replacement of Drainage Spouts

The design for the replacement of PVC drainage spouts on both the temple and caretaker sides by a wooden one has been prepared by Thomas Schrom. The two spouts on the north side of the temple and two on the south side of the caretaker side will be built with wooden boards and the surface will be covered with metal sheets. Due to the delay in delivery of some materials required for the construction, the work has been pushed for the coming quarter.

Painting Conservator

The painting conservator Sreekumar Menon visited Lo Gekhar in April and assessed the stone panels and the wall paintings in the main shrine area. Some of the broken stone panels were fixed and he also strengthened the broken panels that were already fixed previously. Likewise, the crack on wall to the right of the main statue in the shrine area was also filled (Figure 26). Some cleaning of the wall paintings was also done during his stay at

Lo Gekhar (Figure 25). Dawa Tsering Gurung, who was hired this year worked closely with the expert and garnered the basic skills to continue the cleaning of the stone.



Figure 25: Sreekumar Menon cleaning some of the wall paintings in the sanctum.



Figure 26: Sreekumar Menon assisted by Dawa Tsering Gurung filling a major crack on the main wall of the sanctum.

A detailed illustrated report by Sreekumar Menon is being provided separately.


Art History

Christian Luczanits visited the site twice, mainly to clarify some minor elements of his assessment of the murals in the main temple, complement the documentation were needed, and to make sure that the stone panels are mounted as proposed.

The murals of the main sanctum were studied again in some detail and certain parts of them were re-documented, in particular in areas where they are obscured due to the furnishing of the sanctum. Particular attention was paid to the area in which the protectress of the temple was painted. The protectress was also studied in its manifestation in the protector chapel, the sculptures of which were photographed as well.

The sculpture of Ngadak Püntso Rigdzin, which turned out to be a very important historical document, was re-photographed in full, that is including side and back views. Previously this was not possible as the seal at the bottom of the sculpture was loose and the lotus base itself moist. In this condition, the sculpture was originally only photographed in situ and the sculpture could not be moved without danger. Sreekumar Menon reattached the seal in April, which enabled the documentation in June.

The making of the frames for the stone panels was delayed due to the other works that the carpenters were needed for. Further, the carpenters chose to first test their own frame design, based on but not fully equal to what has been proposed by me, on the basis of the



Arhat panels. This frame was done by June. Towards the end of Christian's visit the iron clamps for the new Avalokiteśvara chapel finally arrived and he could make sure that the panels are displayed as intended (Figure 16).

Accounting

By Lopsang Dorje Lama


As of Year 3 Quarter 3, our cumulative expenditure stands at \$188,734.90, which represents approximately 66% of the approved budget of \$285,000. Consequently, we have achieved a surplus of 34%, which is unlikely to be fully expended in the final quarter of the project.

In the previous quarter, our total expenditure amounted to \$7,288.21. These encompassed costs associated with preparing to resume project activities in this quarter. The current quarter witnessed a significant acceleration of project operations, resulting in a total expenditure of \$38,465.72. Despite this progress, our expenditure remains notably below the estimates outlined in advance request #4.

In April, we executed a second budget revision. The primary adjustments involved reallocating funds intended for the remuneration of the art historian. These funds were repurposed to cover his travel, accommodation, permit fees, and related expenses. Furthermore, surplus budget allocated for the "Translator and Assistant" line item was redirected to support the "wooden floors" category.

In terms of expenditure categories, substantial surpluses have emerged in Personnel (46%), Contractual (37%), and Travel (34%). The considerable surplus observed in the Personnel category can be attributed to the dual sourcing of the Accountant's Salary from two projects. Notably, during a significant portion of the Logekar project, a dedicated accountant was not in place, resulting in the substantial surplus under "personnel." Concerning the Contractual category, a substantial overestimation of the budget for the "Labour" line item in the initial budget revisions has been identified. Additionally, challenges have arisen in optimizing the budget allocated for expert remuneration. In the Travel category, The appointment of Dawa Tsering Gurung, a local from Mustang, as a conservation assistant, obviated the need for special transportation and accommodation arrangements. Furthermore, budgets allocated for experts' travel, accommodation, and meals were judiciously managed, resulting in underspending.

We have also noted over expenditures in three line items. The permit fee for the art historian exceeded expectations by 51% due to an unforeseen extension of his permit duration during



his second visit in June. The mandatory involvement of a guide's company contributed to elevated costs. The "Electrician" line item experienced a 34% overage due to the initial underestimation of the budget required for the substantial site work.

In summary, our financial review highlights a concerning pattern in our budget management. The intentional fund reallocations and controlled expenditures have resulted in surplus accumulation that exceeds reasonable levels. Moreover, unforeseen circumstances have led to over expenditures in specific line items, revealing a notable gap between our estimates and actual expenditure needs.

Power Supply

By Sonam Gurung

While Lo Gekhar is now connected to the national grid, its power supply turned out to be unreliable. Therefore, a generator backup needed to be used for most of the quarter to operate power tools. The costs for the generator and its fuel have not been budgeted and hence the expenses had to be borne out of the indirect funds.

Evaluation

Despite the much better living conditions at the site this year, the start to the project work on site was relatively slow and also hampered by a spell of cold weather. With Dawa Tsering Gurung added to the project team on site assisting Sonam, management of the work is more flexible, and work can continue one of them is absent. Bringing the carpenters from Kathmandu was of great value, as their much greater range of experience profited the work on site and increased the quality of the woodwork considerably.

The absence of a masterplan for the site or a functioning committee deciding on what can be done to the site haunted the project insofar, as new mani wheels were added to the main complex by the villagers of Marang (see below). Visitors to the site are very likely to mistake this addition as the work of this project.

Mani Added by Village

Against the advice of the Norbusum Foundation, Marang locals installed new set of prayer wheels with tin roofs on the south side of the caretaker's mansion (Figure 27) just a few days before HH the 42nd Sakya Trizin paid a visit to Lo Gekhar. The chairperson of Marang village committee Mr. Kunga Tenzing Gurung himself was the lead person during all this

activity. These prayer wheels have been constructed without any attempt to match them to the existing ones in either appearance or technology and they feature a simple tin roof that now considerably disturbs the appearance of the temple. In addition, a part of them was constructed directly in front of the toilet area drainage, making access to this area in case of a technical fault impossible (Figure 28).



Figure 27: The new prayer wheels added by villagers of Marang to a short section that was without previously.

Figure 28: The contrast between the old and new and old prayer wheels in appearance. Further, at the foot of the new part the toilet drainage pipe can be seen.

During a visit to the site by Kunjon Thakuri, she spoke with Mr. Kunga Tenzing Gurung about the addition of these new prayer wheels and assure to take the full responsibility in future should there be any criticisms.


Remedy?

This addition to the main temple begs the question how it can be avoided that this work is mistaken as part of this project. It may well be necessary to clearly mark this donation through information boards as independent of (and contradictory to?) the restoration work. Any advice on this matter by the embassy is welcome.

Going Forward

The last quarter of this project will be dedicated to finishing all the works of the restoration, the main ones being:

1. Stone pavement on the entry steps replacing the cemented surface.
2. Stone pavement around the circumambulatory.
3. Exterior color wash on the temple and the caretaker mansions walls.

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4. Plumbing work and sanitary fittings.
 5. Replacement of PVD drainage spouts with wooden ones.
 6. Cleaning of the shrine area and the whole temple premises.