

## Liminal, Llamas and Lore

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Llamas decorate the scene at Machu Picchu. In the Incan times, they were utilized for transportation and wool.



This window exemplifies the dry-stone architectural practice of the Incas. Each stone was carefully constructed to interlock with the ones surrounding it. This method eliminates the need for mortar and is very resistant to earthquakes.

The finer stonework (as in this example) leads to evidence that the structure was of greater importance (perhaps a religious building).





Farming terraces like these were constructed with sorted gravels so that heavy rainfall in the mountains would drain efficiently without destroying the foundations. This is an engineering technique that illustrates the ingenuity of the Incas. Below the terraces, the Urubamba River is visible.



Shown here is a piece of pottery from the Incan times that we found on the ground during our visit.



A baby llama looking out over the Incan trail and farming sector.





This is a view of the top of the quarry. The granite extracted from this quarry was fundamental in the building of the city.

In the foreground, the rock has been cut by scientists in what they believe were the ancient methods of the Incas. To make the cut, wood was placed along natural fracture lines in the granite and then drenched in water. The expansion of the wet timber would crack the granite into smaller pieces.



The city was engineered based on its water supply. Water was collected from the springs and channeled past the different housing districts. The first person to receive water would be the emperor. Then, the canals would pass through the other districts to distribute water according to class.

On the left, is the Stairway of the Fountains and it contains 16 fountains like this one.

The bottom photo depicts how the Incas drained water away from passageways.







The curved stonework on the terrace in the foreground is part of the drainage system that carries water from the spring to the canal. The large stonework in the middle of the picture is the canal itself. The canal also served a secondary purpose of separating the housing districts.



The residential (popular) district is shown here. Each building would have originally had a thatched roof. The stone pegs which were used to hold up the timber in the roof are visible in this shot.





The priests and nobility district can be seen here. You can easily admire the craftsmanship and planning that went into the whole city in this photo.



Above the doorway is a peg that extends outward overhead. In the Inca days, on either side of the door were two notches in which a piece of timber could be grooved to fit horizontally across the door. By latching the wood to this top peg, the feature would serve as a gate for the community.



This is the Sun Temple, the only curved structure in Machu Picchu. Inti, the Sun God and greatest deity was honored and celebrated here. Some say this is the domain of the Virgins of the Sun.

The sun of the winter solstice comes through the central window and illuminates the stone (local lore identifies the window as the Gate of the Sun). The light from the summer solstice perfectly aligns through the window with the edge of the carved stone located in the middle, leading to the belief that the structure was an astronomical observatory.





Below the Temple of the Sun rests this feature called the Royal Tomb, even though no human remains were found here. The Incan Cross can be found guarding the tomb. There are 3 steps to the cross, each representing a level of existence. The first is a snake which represents the underworld. The puma represents the present in the next step and the highest step is a condor for the heavens and sky.



The photo to the right is the Temple of the Condor and it is supposed to resemble the bird in flight. Under the wing on the left side is a passageway to other rooms. Dr. Bingham, generally credited with the rediscovering of Machu Picchu, speculated that these rooms were used as a torture chamber or prison. At the base of the condor's head, there appears to be an altar for religious reasons.

Below, is a picture of a necklace I purchased in Peru. Featured on the necklace is both the Incan Cross and the condor in flight.





In this photo you can see the Principle Temple, one of the major attributes in the Sacred Plaza. Notice the huge stones holding up the foundation of the building. The stones falling over are due to settling in the ground over time and not the construction of the building itself.





This is the Three Windows, a famous structure in the Sacred Plaza. The trapezoidal stones and windows are evidence that this was a religious center. Each of the 3 windows faces the rising sun which illuminates the plaza in the morning.



This large stone rests in the Sacred Plaza and resembles the southern cross constellation. It also points to the southern cross during the summer months.







This is one of the many Intihuatana stones from the Incas and is located in the upper area of the Sacred Plaza. This one is called Quechua which literally means “the hitching post of the sun”. At the equinoxes, the sun stands above the pillar leaving no shadow at all. Because of this, the stone may have been used as a calendar.

This stone is lined up with mountains in all four cardinal directions making this site very powerful. Local lore has it that if you place your hands very close to the stone, you can feel energy radiating off of it.

These two stones are called echo stones because they resemble the contours of the mountains to the east and north of the ruins. In the left picture is Wayna Picchu at the north. The right picture shows the echo stones and the mountain hovering over the Central Plaza.







This is the Sacred Rock of Machu Picchu. When the clouds clear away, it resembles the shape of Mountain Yanantin behind it. Some say it looks like a guinea pig facing the right side, a delicacy in Peru still today.



Pictured above is Missouri S&T Geological Engineering students and faculty that participated on this adventure. The elevation here is 8,000 feet. You can undoubtedly see why it has been called the City in the Clouds.