

The following pages contain information about our Service Learning trip to Bolivia from January 2 to January 15, 2014. We will be posting a separate document very soon with specific information for the Takesi Trail Hike.

I can be reached at 518-332-3156 if you have any questions or concerns.

## La Paz

Nuestra Señora de La Paz

[La Paz](#) (Spanish)

*Chuquiago Marka or Chuqiyapu* (Aymara)

*La Paz* (English)



Flag



Seal

Motto: "Los discordes en concordia, en paz y amor se juntaron y pueblo de paz fundaron para perpetua memoria"



Nuestra Señora de La Paz

Location of La Paz within La Paz Department

[Country](#)



[Bolivia](#)

[Province](#)

[Pedro Domingo Murillo](#)

Founded

October 20, 1548 by [Alonso de Mendoza](#)

Independence

July 16, 1809

Elevation

3,640 m (11,942 ft)

Website

[www.lapaz.bo](http://www.lapaz.bo)

Nuestra Señora de La Paz (Spanish pronunciation: [ˈnwe.s̺.tra seˈɲo.ɾa ðe la pas]; English: Our Lady of Peace; Aymara: *Chuquiago Marka* or *Chuqiyapu*) is the seat of government of Bolivia, as well as the departmental capital of the La Paz Department, and the second largest city in the country (in population) after Santa Cruz de la Sierra.<sup>[3]</sup> It is located in the western part of the country in the department of the same name at an elevation of roughly 3,650 m (11,975 ft) above sea level (the city is built on steep hills).

It is the world's highest de facto capital city, or administrative capital, with Quito being the highest legal capital. While the official capital of Bolivia is Sucre, the seat of Justice, La Paz has more government departments.<sup>[5]</sup>

The city sits in a "bowl" surrounded by the high mountains of the altiplano. As it grew, the city of La Paz climbed the hills, resulting in varying elevations from 3,200 to 4,100 m (10,500 to 13,500 ft). Overlooking the city is towering triple-peaked Illimani, which is always snow-covered and can be seen from several spots of the city, including from the neighboring city of El Alto. As of the 2008 census, the city had a population of 877,363.<sup>[6]</sup>

La Paz Metropolitan area, formed by the cities of La Paz, El Alto, and Viacha, make the most populous urban area of Bolivia, with a population of 2.3 million inhabitants and surpassing the metropolitan area of Santa Cruz de la Sierra.



Government Palace of Bolivia in downtown La Paz

Founded in 1548 by the Spanish conquistadors at the site of the Native American settlement, Laja, the full name of the city was originally *Nuestra Señora de La Paz* (meaning *Our Lady of Peace*). The name commemorated the restoration of peace following the insurrection of Gonzalo Pizarro and fellow conquistadors four years earlier against Blasco Núñez Vela, the first viceroy of Peru. The city was later moved to its present location in the valley of Chuquiago Marka.<sup>[8]</sup>

Control over the former Inca lands had been entrusted to Pedro de la Gasca by the Spanish king (and Holy Roman Emperor) Emperor Charles V. Gasca commanded Alonso de Mendoza to found a new city commemorating the end of the civil wars in Peru; the city of La Paz was founded on October 20, 1548.

In 1549, Juan Gutierrez Paniagua was commanded to design an urban plan that would designate sites for public areas, plazas, official buildings, and a cathedral. La Plaza de los Españoles, which is known today as the Plaza Murillo, was chosen as the location for government buildings as well as the Metropolitan Cathedral.

Spain controlled La Paz with a firm grip and the Spanish king had the last word in all matters political. In 1781, for a total of six months, a group of Aymara people laid siege to La Paz. Under the leadership of Tupac Katari, they destroyed churches and government property. Thirty years later Indians laid a two-month siege on La Paz – where and when the legend of the Ekeko is set. In 1809 the struggle for independence from the Spanish rule brought uprisings against the royalist forces. It was on July 16, 1809 that Pedro Domingo Murillo famously said that the Bolivian revolution was igniting a lamp that nobody would be able to turn-off. This formally marked the beginning of the Liberation of South America from Spain.

Pedro Domingo Murillo was hanged at the Plaza de los Españoles that night, but his name would be eternally remembered in the name of the plaza, and he would be remembered as the voice of revolution across South America.

In 1825, after the decisive victory of the republicans at Ayacucho over the Spanish army in the course of the Spanish American wars of independence, the city's full name was changed to *La Paz de Ayacucho* (meaning *The Peace of Ayacucho*).



Legislative Palace of Bolivia

In 1898, La Paz was made the *de facto* seat of the national government, with Sucre remaining the nominal historical as well as judiciary capital. This change reflected the shift of the Bolivian economy away from the largely exhausted silver mines of Potosí to the exploitation of tin near Oruro, and resulting shifts in the distribution of economic and political power among various national elites.<sup>[9]</sup>

## Geography



The city in winter, with Illimani in the background



La Luna Valley

La Paz is built in a canyon created by the Choqueyapu River (now mostly built over), which runs northwest to southeast. The city's main thoroughfare, which roughly follows the river, changes names over its length, but the central tree-lined section running through the downtown core is called the Prado.

The geography of La Paz (in particular the altitude) reflects society: the lower areas of the city are the more affluent areas. While many middle-class residents live in high-rise condos near the center, the houses of the truly affluent are located in the lower neighborhoods southwest of the Prado. And looking up from the center, the surrounding hills are plastered with makeshift brick houses of those less economically fortunate.

The satellite city of El Alto, in which the airport is located, is spread over a broad area to the west of the canyon, on the Altiplano. La Paz is renowned for its unique markets, very unusual topography, and traditional culture.

La Paz is located in the valleys of the Andes, and is closer to the Eastern split of the Altiplano region. Therefore, it is closer to the famous mountains such as the Illimani (guardian of La Paz), Huayna Potosi, Mururata, and Illampu. On the Western side of the Altiplano divide, about an hour to the West of the La Paz, is the site of the tallest mountain in Bolivia and 9th tallest mountain in the Andes, the Sajama Volcano. In July 1994, an earthquake rated at 8.2 struck just 200 miles (322 km) north of La Paz, the largest earthquake since the Sumbawa earthquake of 1977. Part of the water supply is

Buildings in San Jorge, on the 1st District (Cotahuma).

- San Jorge:, located on the 1st District (Cotahuma) and near Sopocachi, is one of the main residential and diplomatic areas of the city. In contains several buildings, both residential and offices, and embassies, including the Spain Embassy, the United States Embassy, the United Kingdom Embassy and others. One

of the main streets of the city, Arce Avenue, starts on this zone.

- Sopocachi:, in the 1st District (Cotahuma), Sopocachi is probably one of the oldest residential neighborhoods, 10 minutes from the center of the city. Despite the expansion and development of the area, this quarter maintained its residential property. In the last years, there has been an important commercial expansion, mainly on the surroundings of Abaroa Square, one of the many squares and parks of the zone.
- San Pedro:, located in the 1st District (Cotahuma), on the right bank of the Choqueyapu River and built around the "Plaza de San Pedro" (official name: Plaza Sucre, *Sucre Square*), is home to numerous shops, businesses and small enterprises, especially printing, spare parts and auto maintenance and repair shops. San Pedro's "Rodriguez Market" remains as one of the most popular middle-class and oldest of the city. The San Pedro prison is here.
- Centro: (*Downtown*) is in the 7th District and comprises the center of La Paz and principal roads of the city, like Arce Avenue, July 16 Avenue (also known as "Prado Avenue"), Mariscal Santa Cruz Avenue and Camacho Avenue — the last one being the home of the headquarters of the principal banks and companies of the country.



Skyline of Sopocachi, in the 1st District

- Casco Viejo:, located in the 7th District, is the historic and ancient center of La Paz. It now houses museums, hotels, shops and buildings as the Mayor City of La Paz and the Central Bank of Bolivia. In the Old Quarter is the Plaza Murillo, which is home to the Government Palace and the National Congress.
- Miraflores:, in the 7th District, Miraflores district is separated from downtown by a long barrel (called Parque Urbano Central, *Central Urban Park*) and connected by the Bridge of the Americas and two avenues. Originally a residential zone, its growth has led it to become a major recreational center. It houses universities (including the Universidad Mayor de San Andrés's faculty of medicine), hospitals and the Estadio Hernando Siles (capacity of 45,000 people).



Exhibition of Images of La Paz "Outdoor Art", Southern District, Obrajes

- Northern District:, located in the 2nd and 3rd districts, it has a significant industrial activity (mainly food), being the Cervecería Boliviana Nacional (Bolivian National Brewery) the most significant industry founded by Germans, and one of the city's biggest companies in the country. It connects La Paz with the city of El Alto by the "autopista" or Highway.
- Southern District:, in the 5th district has less height than the rest of La Paz (3,200 to 2,800 meters). This area houses the most affluent and exclusive neighborhoods of the city, like Obrajes, Irpavi, Calacoto, La Florida and Achumani, among others. It has been benefited from steady economic growth and is now the second commercial and financial center of the city.

## Climate

At 4,000 m above sea level, the highest parts of La Paz and the city of El Alto have an alpine or tundra climate (*ETw*) because the average temperature of the warmest month is lower than 10 °C (50 °F). The whole city has humid summers, dry winters and cool to chilly temperatures throughout the year. Light snow flurries can occur in winter.

Owing to the altitude of the city, temperatures are consistently cool throughout the year, though the diurnal temperature variation is typically large. The city has a relatively dry climate, with rainfall occurring mainly in the slightly warmer months of November to March.

## Colonial Architecture

The city of La Paz has a consistently decreasing volume of colonial buildings, mostly centered around the vicinity of the Plaza Murillo. Due to a lack of funds and the inability of property owners to pay for restorations to colonial buildings, many have been torn down, or are in a dilapidated state. As historic buildings are more expensive to keep, land owners find it less of a burden to construct more modern buildings as opposed to keeping the old ones. Although there has been an increasing number of projects and propositions to restore some of the city's colonial buildings, the future of these historic edifices remains uncertain.

## Economy





Central Bank building

The economy of La Paz has improved greatly in recent years, mainly as a result of improved political stability. Due to the long period of high inflation and economic struggle faced by Bolivians in the 1980s and early 1990s, a large informal economy developed. Evidence of this is provided by the markets found all around the city. While there are stable markets, almost every street in the downtown area and surrounding neighborhoods has at least one vendor on it. La Paz remains the principal center of manufacturing enterprises that produce finished-product goods for the country, with about two-thirds of Bolivia's manufacturing located nearby. Historically, industry in Bolivia has been dominated by mineral processing and the preparation of agricultural products. However, in the urban centre of La Paz, small plants carry out a large portion of the industry. Food, tobacco products, clothing, various consumer goods, building materials, and agricultural tools are produced. "The tin quotations from London are watched in La Paz with close interest as an index of the country's prosperity; a third of the national revenue and more than half of the total customs in 1925 were derived from tin; in short, that humble but indispensable metal is the hub around which Bolivia's economic life revolves. The tin deposits of Bolivia, second largest in the world, invite development."

Tiwanaku (Spanish: "*Tiahuanaco* and *Tiahuanacu*") is a Pre-Columbian archaeological site in western Bolivia, South America. It is the capital of an empire that extended into present-day Peru and Chile, flourishing from AD 300 to AD 1000.

Tiwanaku is recognized by Andean scholars as one of the most important civilizations prior to the Inca Empire; it was the ritual and administrative capital of a major state power for approximately five hundred years. The ruins of the ancient city state are near the south-eastern shore of Lake Titicaca in the La Paz Department, Ingavi Province, Tiwanaku Municipality, about 72 km (45 mi) west of La Paz.

The site was first recorded in written history by Spanish conquistador Pedro Cieza de León. He came upon the remains of Tiwanaku in 1549 while searching for the Inca capital Qullasuyu.<sup>[1]</sup>



Some have hypothesized that Tiwanaku's modern name is related to the Aymara term *taypiqala*, meaning "stone in the center", alluding to the belief that it lay at the center of the world.<sup>[2]</sup> The name by which Tiwanaku

was known to its inhabitants may have been lost as they had no written language. Cultural development and agriculture

#### Area of the Middle Horizon

The area around Tiwanaku may have been inhabited as early as 1500 BC as a small agricultural village.<sup>[5]</sup> Most research has studied the Tiwanaku IV and V periods between AD 300 and AD 1000, during which the polity grew significantly in power. During the time period between 300 BC and AD 300, Tiwanaku is thought to have been a moral and cosmological center to which many people made pilgrimages. Researchers believe it achieved this standing prior to expanding its powerful empire.<sup>[1]</sup> In 1945, Arthur Posnansky<sup>[6]</sup> estimated that Tiwanaku dated to 15,000 BC, based on his archaeoastronomical techniques. In the 21st century, experts decisively concluded Posnansky's dates were invalid and a "sorry example of misused archaeoastronomical evidence."<sup>[7]</sup>

Tiwanaku's location between the lake and dry highlands provided key resources of fish, wild birds, plants, and herding grounds for camelidae, particularly llamas.<sup>[8]</sup> The Titicaca Basin is the most productive environment in the area, with predictable and abundant rainfall. The Tiwanaku culture developed expanded farming. To the east, the Altiplano is an area of very dry arid land.<sup>[1]</sup> The Tiwanaku developed a distinctive farming technique known as "flooded-raised field" agriculture (*suka kollus*) to deal with the high-altitude Titicaca Basin. Such fields were used widely in regional architecture, together with irrigated fields, pasture, terraced fields and *qochas* (artificial ponds).<sup>[1]</sup>

Artificially raised planting mounds are separated by shallow canals filled with water. The canals supply moisture for growing crops, but they also absorb heat from solar radiation during the day. This heat is gradually emitted during the bitterly cold nights and provide thermal insulation against the endemic frost in the region. Traces of similar landscape management have been found in the Llanos de Moxos region (Amazonian flood plains of the Moxos).<sup>[9]</sup> Over time, the canals also were used to farm edible fish. The resulting canal sludge was dredged for fertilizer. The fields grew to cover nearly the entire surface of the lake<sup>[citation needed]</sup> and although they were not uniform in size or shape, all had the same primary function.<sup>[9]</sup>

Though labor-intensive, *suka kollus* produce impressive yields. While traditional agriculture in the region typically yields 2.4 metric tons of potatoes per hectare, and modern agriculture (with artificial fertilizers and pesticides) yields about 14.5 metric tons

per hectare, *suka kollu* agriculture yields an average of 21 tons per hectare.<sup>[1]</sup>

Modern agricultural researchers have re-introduced the technique of *suka kollus*. Significantly, the experimental *suka kollus* fields recreated in the 1980s by University of Chicago's Alan Kolata and Oswaldo Rivera suffered only a 10% decrease in production following a 1988 freeze that killed 70-90% of the rest of the region's production.<sup>[10]</sup> Development by the Tiwanaku of this kind of protection against killing frosts in an agrarian civilization was invaluable to their growth.<sup>[10]</sup>

As the population grew, occupational niches developed, and people began to specialize in certain skills. There was an increase in artisans, who worked in pottery, jewelry and textiles. Like the later Incas, the Tiwanaku had few commercial or market institutions. Instead, the culture relied on elite redistribution.<sup>[11]</sup> That is, the elites of the empire controlled essentially all economic output, but were expected to provide each commoner with all the resources needed to perform his or her function. Selected occupations include agriculturists, herders, pastoralists, etc. Such separation of occupations was accompanied by hierarchical stratification within the empire.<sup>[12]</sup>

The elites of Tiwanaku lived inside four walls that were surrounded by a moat. This moat, some believe, was to create the image of a sacred island. Inside the walls were many images devoted to human origin, which only the elites would see. Commoners may have ever entered this structure only for ceremonial purposes since it was home to the holiest of shrines.<sup>[1]</sup>

### Rise and fall of Tiwanaku

Around AD 400 a state in the Titicaca basin began to develop and an urban capital was built at Tiwanaku.<sup>[13]</sup> Tiwanaku expanded its reaches into the Yungas and brought its culture and way of life to many other cultures in Peru, Bolivia, and the people of the Northern regions of Argentina and Chile. It was not exclusively a military or violent culture. In order to expand its reach, Tiwanaku used politics to create colonies, negotiate trade agreements (which made the other cultures rather dependent), and establish state cults.<sup>[14]</sup>

Others were drawn into the Tiwanaku empire due to religious beliefs, as it continued as a religious center. Force was rarely necessary for the empire to expand, but on the northern end of the Basin, resistance was present. There is evidence that bases of some statues were taken from other cultures and carried all the way back to the capital city of Tiwanaku, where the stones were placed in a subordinate position to the Gods of the Tiwanaku. They displayed the power their empire had over many.<sup>[15]</sup>

The Tiwanaku conducted human sacrifices on top of a building known as the Akipana. People were disemboweled and torn apart shortly after death and laid out for all to see. It is speculated that this ritual was a form of dedication to the gods. Research showed

that one man who was sacrificed was not a native to the Titicaca Basin, leaving room to think that sacrifices were most likely not of people originally within the society.<sup>[1]</sup>

The community grew to urban proportions between AD 600 and AD 800, becoming an important regional power in the southern Andes. Early estimates figured that the city had covered approximately 6.5 square kilometers at its maximum, with between 15,000–30,000 inhabitants.<sup>[1]</sup> However, satellite imaging since the late 20th century has caused researchers to dramatically raise their estimates of population. They found that the extent of fossilized *suka kollus* across the three primary valleys of Tiwanaku appeared to have the capacity to support a population of between 285,000 and 1,482,000 people.<sup>[10]</sup>

The empire continued to grow, absorbing cultures rather than eradicating them. William H. Isbell states that "Tiahuanaco underwent a dramatic transformation between AD 600 and AD 700 that established new monumental standards for civic architecture and greatly increased the resident population."<sup>[16]</sup> Archaeologists note a noticeable adoption of Tiwanaku ceramics in the cultures that became part of the empire. Tiwanaku gained its power through the trade it implemented among the cities within its empire.<sup>[14]</sup> The elites gained their status by control of the surplus of food obtained from all regions, which they redistributed among all the people. Control of llama herds became very significant to Tiwanaku. The animals were essential for transporting crops and goods between the center and periphery of the empire. The animals may also have symbolized the distance between the commoners and the elites.

The elites' power continued to grow along with the surplus of resources until about AD 950. At this time a dramatic shift in climate occurred,<sup>[1]</sup> as is typical for the region.<sup>[17][18]</sup> A significant drop in precipitation occurred in the Titicaca Basin, and some archaeologists suggest a great drought occurred. As the rain was reduced, many of the cities furthest away from Lake Titicaca began to produce fewer crops to give to the elites. As the surplus of food dropped, the elites' power began to fall. Due to the resiliency of the raised fields, the capital city became the last place of agricultural production. With continued drought, people died or moved elsewhere. Tiwanaku disappeared around AD 1000. The land was not inhabited again for many years.<sup>[1]</sup> In isolated places, some remnants of the Tiwanaku people, such as the Uros, may be direct descendants of the people.

Beyond the northern frontier of the Tiwanaku state, a new power started to emerge in the beginning of the 13th century, the Inca Empire.

In AD 1445 Pachacuti Inca Yupanqui (the ninth Inca) began conquest of the Titicaca regions. He incorporated and developed what was left from the Tiwanaku patterns of culture, and the Inca officials were superimposed upon the existing local officials. Quechua was made the official language and sun worship the

official religion. So, the last traces of the Tiwanaku civilization were integrated or abandoned.

### Architecture and art



Closeup of carved stone tenon-head embedded in wall of Tiwanaku's Semi-subterranean Temple



Anthropomorphic receptacle

Tiwanaku monumental architecture is characterized by large stones of exceptional workmanship. In contrast to the masonry style of the later Inca, Tiwanaku stone architecture usually employs rectangular ashlar blocks laid in regular courses. Their monumental structures were frequently fitted with elaborate drainage systems. The drainage systems of the Akapana and Pumapunku structures include conduits composed of red sandstone blocks held together by ternary (copper/arsenic/nickel) bronze architectural cramps. The I-shaped architectural cramps of the Akapana were created by cold hammering of ingots. In contrast, the cramps of the Pumapunku were created by pouring molten metal into I-shaped sockets.<sup>[19]</sup> The blocks have flat faces that do not need to be fitted upon placement because the grooves make it possible for the blocks to be shifted by ropes into place. The main architectural appeal of the site comes from the carved images and designs on some of these blocks, carved doorways, and giant stone monoliths.

The quarries that supplied the stone blocks for Tiwanaku lie at significant distances from this site. The red sandstone used in this site's structures has been determined by petrographic analysis to come from a quarry 10 kilometers away—a remarkable distance considering that the largest of these stones weighs 131 metric tons.<sup>[21]</sup> The green andesite stones that were used to create the most elaborate carvings and monoliths originate from the Copacabana peninsula, located across Lake Titicaca.<sup>[21]</sup> One theory is that these giant andesite stones, which weigh over 40 tons, were transported some 90 kilometers across Lake Titicaca

on reed boats, then laboriously dragged another 10 kilometers to the city.

The buildings that have been excavated include the Akapana, Akapana East, and Pumapunku stepped platforms, the Kalasasaya, the Kheri Kala, and Putuni enclosures, and the Semi-Subterranean Temple. These may be visited by the public.

The Akapana is an approximately cross-shaped pyramidal structure that is 257 m wide, 197 m broad at its maximum, and 16.5 m tall. At its center appears to have been a sunken court. This was nearly destroyed by a deep looters excavation that extends from the center of this structure to its eastern side. Material from the looters excavation was dumped off the eastern side of the Akapana. A staircase with sculptures is present on its western side. Possible residential complexes might have occupied both the northeast and southeast corners of this structure.

Originally, the Akapana was thought to have been made from a modified hill. Twenty-first century studies have shown that it is a manmade earthen mound, faced with a mixture of large and small stone blocks. The dirt comprising Akapana appears to have been excavated from the "moat" that surrounds the site.<sup>[20]</sup> The largest stone block within the Akapana, made of andesite, is estimated to weigh 65.70 metric tons.<sup>[21]</sup> The structure was possibly for the shaman-puma relationship or transformation through shape shifting. Tenon puma and human heads stud the upper terraces.<sup>[20]</sup>

The Akapana East was built on the eastern side of early Tiwanaku. Later it was considered a boundary between the ceremonial center and the urban area. It was made of a thick, prepared floor of sand and clay, which supported a group of buildings. Yellow and red clay were used in different areas for what seems like aesthetic purposes. It was swept clean of all domestic refuse, signaling its great importance to the culture.

### Pumapunku

The Pumapunku is a man-made platform built on an east-west axis like the Akapana. It is a rectangular terraced earthen mound faced with megalithic blocks. It is 167.36 m wide along its north-south axis and 116.7 m broad along its east-west axis, and is 5 m tall. Identical 20-meter wide projections extend 27.6 meters north and south from the northeast and southeast corners of the Pumapunku. Walled and unwallled courts and an esplanade are associated with this structure.

A prominent feature of the Pumapunka is a large stone terrace; it is 6.75 by 38.72 meters in dimension and paved with large stone blocks. It is called the "Plataforma Lítica". The Plataforma Lítica contains the largest stone block found in the Tiwanaku Site. Ponce Sangines the block is estimated to weigh 131 metric tons. The second largest stone block found within the Pumapunka is estimated to be 85 metric tons.<sup>[21][23]</sup>

The Kalasasaya is a large courtyard over three hundred feet long, outlined by a high gateway. It is located to the north of the Akapana and west of the Semi-Subterranean Temple. Within the courtyard is where explorers found the Gateway of the Sun. Since the late 20th century, researchers have theorized that this was not the gateway's original location. Near the courtyard is the Semi-Subterranean Temple; a square sunken courtyard that is unique for its north-south rather than east-west axis.<sup>[24]</sup> The walls are covered with tenon heads of many different styles, suggesting that the structure was reused for different purposes over time.<sup>[25]</sup> It was built with walls of sandstone pillars and smaller blocks of Ashlar masonry.<sup>[25][26]</sup> The largest stone block in the Kalasasaya is estimated to weigh 26.95 metric tons.<sup>[21]</sup>

Within many of the site's structures are impressive gateways; the ones of monumental scale are placed on artificial mounds, platforms, or sunken courts. Many gateways show iconography of "Staffed Gods." This iconography also is used on some oversized vessels, indicating an importance to the culture. This iconography is most present on the Gateway of the Sun.

The Gateway of the Sun and others located at Pumapunku are not complete. They are missing part of a typical recessed frame known as a chambranle, which typically have sockets for clamps to support later additions. These architectural examples, as well as the recently discovered Akapana Gate, have a unique detail and demonstrate high skill in stone-cutting. This reveals a knowledge of descriptive geometry. The regularity of elements suggest they are part of a system of proportions.

Many theories for the skill of Tiwanaku's architectural construction have been proposed. One is that they used a *luk'a*, which is a standard measurement of about sixty centimeters. Another argument is for the Pythagorean Ratio. This idea calls for right triangles at a ratio of five to four to three used in the gateways to measure all parts. Lastly Protzen and Nair argue that Tiwanaku had a system set for individual elements dependent on context and composition. This is shown in the construction of similar gateways ranging from diminutive to monumental size, proving that scaling factors did not affect proportion. With each added element, the individual pieces were shifted to fit together



snuff tablet ("rapero")

### Relationship with Wari

Throughout their imperial reign, the Tiwanaku shared domination of the Middle Horizon with the Wari, based primarily in central

and south Peru, although found to have built important sites in the north as well (Cerro Papato ruins). Their culture rose and fell around the same time; it was centered 500 miles north in the southern highlands of Peru. The relationship between the two empires is unknown. Definite interaction between the two is proved by their shared iconography in art. Significant elements of both of these styles (the split eye, trophy heads, and staff-bearing profile figures, for example) seem to have been derived from that of the earlier Pukara culture in the northern Titicaca Basin. The Tiwanaku created a powerful ideology, using previous Andean icons that were widespread throughout their sphere of influence. They used extensive trade routes and shamanistic art. Tiwanaku art consisted of legible, outlined figures depicted in curvilinear style with a naturalistic manner, while Wari art used the same symbols in a more abstract, rectilinear style with a militaristic style.

Tiwanaku sculpture is comprised typically of blocky, column-like figures with huge, flat square eyes, and detailed with shallow relief carving. They are often holding ritual objects, such as the Ponce Stela or the Bennett Monolith. Some have been found holding severed heads, such as the figure on the Akapana, who possibly represents a puma-shaman. These images suggest the culture practiced ritual human beheading. As additional evidence, headless skeletons have been found under the Akapana.

They also used ceramics and textiles, composed of bright colors and stepped patterns. An important ceramic artifact is the *kero*, a drinking cup that was ritually smashed after ceremonies and placed with other goods in burials. As the empire expanded, the style of ceramics changed. The earliest ceramics were "coarsely polished, deeply incised brownware and a burnished polychrome incised ware". Later the Qeya style became popular during the Tiwanaku III phase, "Typified by vessels of a soft, light brown ceramic paste". These ceramics included libation bowls and bulbous-bottom vases.<sup>[30]</sup>

Examples of textiles are tapestries and tunics. The objects typically depicted herders, effigies, trophy heads, sacrificial victims, and felines. Such small, portable objects of ritual religious meaning were a key to spreading religion and influence from the main site to the satellite centers. They were created in wood, engraved bone, and cloth. They depicted puma and jaguar effigies, incense burners, carved wooden hallucinogenic snuff tablets, and human portrait vessels. Like the Moche, Tiwanaku portraits expressed individual characteristics.

### Religion

No local written language has yet been deciphered (*quipus* remains poorly understood). What is known of Tiwanaku religious beliefs is based on archaeological interpretation and some myths, which may have been passed down to the Incas and the Spanish. They seem to have worshipped many gods, perhaps centered around agriculture. One of the most important gods was



Viracocha, the god of action, shaper of many worlds, and destroyer of many worlds. He created people, with two servants, on a great piece of rock. Then he drew sections on the rock and sent his servants to name the tribes in those areas. In Tiwanaku, he created the people out of rock and brought life to them through the earth. The Tiwanaku believed that Viracocha created giants to move the massive stones that comprise much of their archaeology, but then grew unhappy with the giants and created a flood to destroy them.

Viracocha is carved into the noted Gateway of the Sun, to overlook his people and lands. The Gateway of the Sun is a monolithic structure of regular, non-monumental size. Its dimensions suggest that other regularly sized buildings existed at the site. It was found at Kalasasaya, but due to the similarity of other gateways found at Pumapunku, it is thought to have been originally part of a series of doorways there.

It is recognized for its singular, great frieze. This is thought to represent a main deity figure surrounded by either calendar signs or natural forces for agricultural worship. Along with Viracocha, another statue is in the Gateway of the Sun. This statue is believed to be associated with the weather:

"a celestial high god that personified various elements of natural forces intimately associated the productive potential of altiplano ecology: the sun, wind, rain, hail - in brief, a personification of atmospherics that most directly affect agricultural production in either a positive or negative manner", It has twelve faces covered by a solar mask, and at the base thirty running or kneeling figures. Some scientists believe that this statue is a representation of the calendar with twelve months and thirty days in each month.

Other evidence points to a system of ancestor worship at Tiwanaku. The preservation, use, and reconfiguration of mummy bundles and skeletal remains, as with the later Inca, may suggest that this is the case. Later cultures within the area made use of large "above ground burial chambers for the social elite ... known as "chullpas". Similar, though smaller, structures were found within the site of Tiwanaku.

Kolata suggests that, like the later Inka, the inhabitants of Tiwanaku may have practiced similar rituals and rites in relation to the dead. The Akapana East Building has evidence of ancestor burial. The human remains at Akapana East seem to be less for show and more for proper burial. The skeletons show many cut marks that were most likely made by defleshing or excarnation after death. The remains were then bundled up and buried rather than left out in the open.

## Archaeology



Ponce stela in the sunken courtyard of the Tiwanaku's Kalasasaya temple

As the site has suffered from looting and amateur excavations since shortly after Tiwanaku's fall, archeologists must try to interpret it knowing that materials have been jumbled and destroyed. This destruction continued during the Spanish conquest and colonial period, and during 19th century and the early 20th century. Other damage was committed by people quarrying stone for building and railroad construction, and target practice by military personnel.

No standing buildings have survived at the modern site. Only public, non-domestic foundations remain, with poorly reconstructed walls. The ashlar blocks used in many of these structures were mass-produced in similar styles so that they could possibly be used for multiple purposes. Throughout the period of the site, certain buildings changed purposes, causing a mix of artifacts found today.



Walls around the temple Kalasasaya



Gate of the Moon.

Detailed study of Tiwanaku began on a small scale in the mid-nineteenth century. In the 1860s, Ephraim George Squier visited the ruins and later published maps and sketches completed during his visit. German geologist Alphons Stübel spent nine days in Tiwanaku in 1876, creating a map of the site based on careful measurements. He also made sketches and created paper impressions of carvings and other architectural features. A book containing major photographic documentation was published in 1892 by engineer B. von Grumbkow. With commentary by archaeologist Max Uhle, this was the first in-depth scientific account of the ruins.



In the 1960s, the government initiated an effort to restore the site and reconstruct part of it. The walls pictured to the right, of the Kalasasaya, are almost all reconstructed. The original stones making up the Kalasasaya would have resembled a more "Stonehenge"-like style, spaced evenly apart and standing straight up. The reconstruction was not sufficiently based on research; for instance, a new wall was built around Kalasasaya. The reconstruction does not have as high quality of stonework as was present in Tiwanaku. As noted, the Gateway of the Sun, now in the Kalasasaya, was moved from its original location.

Pictures of archaeological excavations in 1900



Stairs of Kalasasaya/Temple of Kalasasaya (1903)



Gate of the Sun/Gate of the Sun, Rear View (1903)

Archaeologists such as Paul Goldstein have argued that the Tiwanaku empire ranged outside of the altiplano area and into the Moquegua Valley in Peru. Excavations at Omo settlements show signs of similar architecture characteristic of Tiwanaku, such as a temple and terraced mound. Evidence of similar types of cranial deformation in burials between the Omo site and the main site of Tiwanaku is also being used for this argument.

Today Tiwanaku has been designated as a UNESCO World Heritage Site. It is administered by the Bolivian government.



Robotic exploration of a newly discovered tunnel in the Akapana pyramid, June 13, 2006

Recently, the Department of Archaeology of Bolivia (DINAR, directed by Javier Escalante) has been conducting excavations on

the Akapana pyramid. The *Proyecto Arqueologico Pumapunku-Akapana* (PAPA, or Pumapunku-Akapana Archaeological Project) run by the University of Pennsylvania, has been excavating in the area surrounding the pyramid for the past few years, and also conducting Ground Penetrating Radar surveys of the area.

## Lukurmata

Lukurmata was a secondary site near Lake Titicaca in Bolivia. First established nearly two thousand years ago, it grew to be a major ceremonial center in the Tiwanaku state, a polity that dominated the south-central Andes from 400 to 1200. After the Tiwanaku state collapsed, Lukurmata rapidly declined, becoming once again a small village. The site shows evidence of extensive occupation that antedates the Tiwanakan civilization.

## Takesi Trail

The Takesi Trail is a very popular option for hikers in Bolivia. The trail covers 30km in three days taking you from the bustling city of La Paz, through the high and cold La pass, and finally to the misty cloud covered valleys of the Yungas. The trail is one of the oldest remaining in the country, dating back to pre-Incan times, and is a wonderful journey for anyone with at least some hiking experience.

Highlights:

- Hike through Bolivian history on the ancient Takesi Trail
- Walk your way from the mountains to the jungle, camping under the clear skies
- Visit traditional communities and a classic Bolivian mine



Day 1: Drive from La Paz towards the San Francisco Mine. Traveling through the slopping, switchback roads leading down to La Cumbre Pass, we pass through agricultural villages, mining outposts and beautiful landscapes. Once we arrive at La Cumbre we will begin our ascent via the pre-Incan trail of Takesi moving across the majestic Andes Mountain Range at a height of 4650 meters above sea level. The desolate, rocky landscape coupled with the brisk air and high altitude makes this part of the trek the most difficult. Upon reaching the highest point on the trail we experience wind, cloud cover and snow as visibility drops dramatically. Passing abandoned houses, llamas and donkeys we continue downwards towards the quaint village of Takesi where our porters and cook will set up camp for an overnight stay. The

village consists of a couple small houses (one of which we spend the night), friendly villagers and herds of llama and sheep. (Lunch, Dinner)

Day 2: We will begin the day continuing along the trail towards the lowland subtropical region of the South Yungas. Waking up to a beautiful sunrise you are able to see, potentially for the first time, just how beautiful the surrounding mountains are without the thick clouds hindering your view. Surrounded by giant ferns and an incredible variety of lush tropical vegetation including vibrant flowers, begonias and runt orchids, the Yungas are a wonderland of biodiversity. Passing through the valley surrounded by towering mountains, we creep along a sliver of trail with a steep drop on one side. Lunch will be prepared at the small traditional village of Kakapi; a welcoming place for the weary traveler with a spectacular view of the Andes. After lunch, we continue the trek headed for our next camp site. As the terrain becomes more and more tropical, we push through thick vegetation finally reaching the river where a modest bridge made of a few trees serves as our way across. At night we will camp in an open meadow close to the Chojlla Mine, taking in the beauty of the stars and cool mountain air.

Day 3: We will begin the day with a relatively short and easy hike towards Yanacachi. Strolling along the banks of the Takesi River we catch glimpses of the many vibrantly colored bird species including toucans and parrots. Looking back you can view the soaring mountains that you had spent the past few days trekking through. Filled with a sense of accomplishment, the trip ends with a ride through the Chojlla mine and stunning vistas of the Yungas as we climb upwards towards La Paz.

## Sucre, Bolivia

The Historic City of Sucre, located in the foothills of the Sica Sica and Churuquilla in central-south of Bolivia, is an excellent, intact and well-preserved illustration of the architectural blending achieved in Latin America through the assimilation of local traditions and styles imported from Europe. Founded by the Spanish in 1538 as *Ciudad de la Plata de la Nueva Toledo* (Silver Town of New Toledo) on the lands of the Yampara, indigenous culture of the Characas confederation, La Plata was for many years the judicial, religious and cultural centre of the region. The city was renamed in honour of the deceased leader of the fight for Independence, Antonio Jose de Sucre in 1839, when it was declared the first capital of Bolivia

The historic city was designed according to a simple urban plan with checkerboard- patterned streets, similar to other towns founded by the Spanish in America in the 16<sup>th</sup> century. The mineral wealth of the nearby city of Potosí influenced the economic development of La Plata that was also an important cultural centre (University of Saint-Francois-Xavier, the Royal

Academia Carolina, and San *Isabel de Hungria* Seminario) and the seat of the Characas Audiencia, forerunner of the present Supreme Court. In 1609, the city became the seat of an archbishopric and during the 17<sup>th</sup> century La Plata served as a religious centre for the Spanish eastern territories.

Many religious buildings located on the 113.76 ha of the historic centre of the city bear witness to the period that marked the beginnings of the Spanish city, including churches dating back to the 16<sup>th</sup> century, such as San Lázaro, San Francisco, Santo Domingo and the Metropolitan Cathedral, the construction of which began in 1559 and was completed 250 years later. The *Casa de la Libertad* (House of Freedom), constructed in 1621 as part of the Convent of the Jesuits, is considered to be the most important historic monument of Bolivia because it was here where the events leading to the independence of the country took place. The buildings of the 18<sup>th</sup> century are characteristic of the local architecture and similar to those built during the same period at Potosí. The more recent buildings (late 18<sup>th</sup> century and early 19<sup>th</sup> century) retained the patios that characterized earlier times but were adapted to the Neoclassical style imported from metropolitan Spain. The buildings of Sucre illustrate eloquently the blending of local architectural traditions and styles imported from Europe, including those at the beginning of the Renaissance, Mudejar, Gothic, Baroque and Neoclassical periods, between the 16<sup>th</sup> and 19<sup>th</sup> centuries.

The rich heritage of the historic centre of the Spanish city of Sucre (also known as the city of four names - La Plata, Characas, Ciudad Blanca and Sucre) is an excellent, intact and well-preserved illustration of the architectural blending achieved in Latin America through the assimilation of local traditions and styles imported from Europe.

The city of La Plata was founded by Pedro de Anzures, Marqués de Campo Rotondo, in 1538. Its foundation was a result of mining activities overseen by Gonzalo Pizarro, who was interested in exploring the highland eastern region of the Andean Cordillera. In 1559, the Spanish King Felipe II commanded the foundation of the Audiencia de Characas, with its headquarters in the city of La Plata, to administer the eastern territories. The Audiencia held judicial authority and executive powers and presided over the regions of what are now Paraguay, south-eastern Peru, northern Chile and Argentina, and most of Bolivia. The Spanish city was designed on a simple urban plan, like all the cities founded by the Spanish in the regions of America in the 16th century. The mineral wealth of the nearby city of Potosí influenced the economic development of La Plata, which was also a major cultural centre (Universidad de San Francisco, the Royal Academia Carolina, San Isabel de Hungria Seminario), and the seat of the Characas Audiencia, a forerunner of the present Supreme Court.

In 1609 the city became the seat of an archbishopric, and during the 17th century La Plata served as a legal, religious and cultural

centre of the Spanish eastern territories. The first call for independence in the Americas took place in the city of La Plata in 1809. In August 1825 independence was declared and a new republic was born under the name of Bolivia. In the same days the name of the city, La Plata, was changed to Sucre in honour of Mariscal Ant3nio Jos9 de Sucre, who fought for independence from Spanish rule.

The buildings in the city's historic centre are characteristic of 18th-century local architecture, and are similar to those built during the same period in Potos3. More recent buildings (late 18th and early 19th centuries) still have patios, but they are adapted to a neoclassical style brought from metropolitan Spain. The House of Freedom is considered to be the most important historical monument of the country, because it was here that the events that led to the independence of Bolivia took place. It was built in 1621 as part of the Convent of the Jesuits.

On the other hand, many religious buildings bear witness to the period that marked the beginning of the Spanish city, including the churches built by settlers dating back to the 16th century, such as San L3zaro, San Francisco, Santo Domingo, and the Metropolitan Cathedral, the construction of which began in 1559 and was not completely finished until 250 years later. Its architecture displays Renaissance, Baroque and also 'Mestizo Baroque' features. The church of Santa Barbara is the only church in Renaissance style in Bolivia: its interior structure, of neo-Gothic style, dates from 1887. All the churches of Sucre illustrate the blending of local architectural traditions with styles imported from Europe.

## Cochabamba

Cochabamba is a city in central Bolivia, located in a valley bearing the same name in the Andes mountain range. It is the capital of the Cochabamba Department and is the fourth largest city in Bolivia with an urban approximate population of 700,000 (2010) and a metropolitan population of more than 1,000,000 people. The name derives from a compound of the Quechua words *qucha*, meaning "lake", and *pampa*, "open plain".<sup>[2]</sup> Residents of the city and surrounding areas are commonly referred to as *Cochalas*. Cochabamba is known as the "City of Eternal Spring" and "The Garden City" due to its spring-like temperatures year round. It is also known as "La Llaqta", "town" in Quechua.

The city is host to the first World People's Conference on Climate Change and the Rights of Mother Earth.

## History



Palacio Portales built for mining magnate Simon Pati3o



Sarco Templo la Merced



Exterior view of the Metropolitan Cathedral in Cochabamba

The Cochabamba valley was inhabited for over a thousand years due to its fertile productive soils and climate. Archaeological evidence suggests that the initial inhabitants were of indigenous ethnic groups: Tiwanaku, Tupuraya, Mojocoya, Omereque, and Inca inhabited the valley at times before the Spanish arrived.

The first Spanish inhabitant of the valley was Garc3 Ruiz de Orellana in 1542. He purchased the majority of the land from local tribal chiefs Achata and Consavana through a title registered in 1552 at the Imperial City of Potos3. The price paid was 130 pesos. His residence, known as the House of Mayorazgo, stands in the Cala Cala neighborhood.

The city, called Villa de Oropesa, was founded on 2 August 1571 by order of Viceroy Francisco de Toledo, Count of Oropesa. It was to be an agricultural production centre to provide food for the mining towns of the relatively nearby Altiplano region, particularly Potos3 which became one of the largest and richest cities in the world during the 17th century — funding the vast wealth that ultimately made Spain a world power. With the silver mining industry in Potos3 at its height, Cochabamba thrived during its first centuries. The city entered a period of decline during the 18th century as mining began to wane.

In 1786, King Charles III of Spain renamed the city to the 'loyal and valiant' Villa of Cochabamba. This was done to commend the city's pivotal role in suppressing the indigenous rebellions of 1781 in Oruro by sending armed forces to Oruro to quell the uprisings. Since the late 19th century it has again been generally successful as an agricultural centre for Bolivia.

The 1793 census shows that the city had a population of 22,305 persons. There were 12,980 mestizos, 6,368 Spaniards, 1,182 indigenous natives, 1,600 mulattos and 175 African slaves. In 1900, the population was 21,886.

### **Climate**

Cochabamba's famous "Eternal Spring" continues to hold sway over the hearts of true Cochabambinos. Neither experiencing the humid heat of Santa Cruz nor the frigid winds of La Paz, Cochabamba enjoys a semi-arid climate (Köppen: BSk). At 17° south of the Equator, tropical days are balanced by the cool of mountain nights. The characteristic of the climate is an extended dry season that runs from May until October with a wet season that generally begins in November with the principal rains ending in March.

Cochabamba region is generally regarded as rather conservative in its phonetics and vocabulary, a few Quechua and Aymara terminology (guagua [child], papa [potato]) have been incorporated into its standardized form. As with most cities around the globe, English language is increasingly spoken and understood, particularly among business-minded indigenous and repatriated Cochabambinos. English-language instruction has become incorporated into Bolivian education from elementary to college levels.

The city's racial demographics consist of the following visible groups in order of prevalence: Western Hemispheric indigenous (mostly of Quechua ethnicity), Mestizo or mixed Indigenous, and a minority of white Caucasoid and mixed white (Criollos).

### **Government**

Cochabamba, formally the municipality of Cercado, is the capital of Cochabamba department. The city government is divided into executive and legislative branches. The mayor of Cochabamba is the head of the city government, elected by general election for a term of five years. The mayor heads an executive branch, which includes six sub-mayors and a variety of departments comprising 950 functionaries. The 11-member municipal council is the legislative branch. The current mayor is Edwin Castellanos of the Movement Towards Socialism.

### **Economy**

The area where Cochabamba is situated is commonly referred to as the granary of Bolivia. Its climate is milder than that of the Altiplano region to the west and thus permits extensive agriculture, including grains, potatoes, and coffee in the highlands

and sugar cane, cocoa beans, tobacco, and fruit in the Chapare tropical lowlands, an area that had been one of the country's main coca-leaf-producing regions. Cochabamba is also the industrial hub of Bolivia, producing cars, cleaning products, cosmetics, chemicals, and other items like cement. The economy of Cochabamba is characterized by produce goods and services.

## **Service Work with Oscar Olivera**

The year 2000 brought a significant victory against water privatisation in Bolivia. Massive protests in Cochabamba forced the Bolivian government to revoke the contract it had with the US Corporation Bechtel. Under pressure from the World Bank the government had sold the water companies in Cochabamba to Bechtel. One of the organizers of these, known as water war protests, was the trade union leader Oscar Olivera. Fighting at his side, at the time, was also Evo Morales who in 2006 became Bolivia's first indigenous president. Nevertheless, Olivera later turned down the government posts Morales offered to him. Today he involves himself, beyond government policy, as an environmental activist and activist for human rights for water justice and for the rights of nature. Olivera was also the role model for the central figure in the recently appeared film „Even the Rain.



We will be working with Oscar's community, the Water School of the Andes, and a Montessori school for Indian children.