

# Inca architecture in the archaeological site of moqi, Tacna-Peru

## Abstract

The Department of Tacna, conforming of the South Central Andean Area, evidences a rather early cultural continuity that goes back to 10.000 years of antiquity. Its geographical implications (marine littoral: hydrobiological resources, hills, wetlands and wet creeks, fertile coastal valleys, Andean pre-Andean valleys, cold geosystems of Cordillera and Puma: lagoons, pastures and bofedales) and the diversification of resources, conditioned the emergence of societies established in different ecological levels, harmoniously transforming nature for the sake of its presence and impact in the region.

**Keywords:** Inca architecture, hunter-gatherers, altiplano, occupation

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## Introduction

### The first hunter-gatherers (8000 to 4000 BC)

The settlement in Tacna begins with the presence of small human groups of hunters and gatherers, whose economy was basically survival. They defined their habitat in the altiplano, intermediate valleys, hills and the coastal coast. They hunted the guanaco, the taruca, the vicuna, rodents and various birds. They collected fruits and roots of wild plants. On the coast they obtained marine and hill resources. They lived in caves, shelters and possibly in outdoor camps. The archaeological sites: Cuevas de Toquepala (8,000 a.C), the Caru shelter in Tarata (6,240 a .C.) And, the still uninvestigated sites of Girata, Mullini, Queñuavichinca, Vilavilani, Lomas de Sama and others, are obvious witnesses of the domestic, economic and magic-religious activity of these hunter-gatherers

These are small transhumant bands that used the rock formations as temporary shelters (caves, shelters and eaves), from where they moved in search of everyday food. Hunting was the predominant activity, supported by the collection of wild fruits and roots. They were surrounded by a magical world, to which they resorted by favorable propitiatory rites for the hunting of the vicuna and the guanaco fundamentally, whose simulated scenes of success of the hunt were represented on the walls of the caves. It is to be supposed how impressive those magical-ritual sessions should have been, each time the group organized the "adventure" of hunting and bringing food to the camp. They were hunters of the Holocene with certain specialization in the hunting of smaller animals, for which they developed a "lithic industry" based on arrowheads (lanceolate, rhomboidal, peduncular, triangular and low-cut); In addition, knives, scrapers, punches, scrapers, crushers and wood and bone artifacts were made. Apparently, the life dynamics of these human groups affected a permanent displacement between the coast and the altiplano, suggested by the climatic and ecological variations, creating a cyclical behavior of presence and absence of food resources.

### The archaic period 4,000-1,000(ac)

Gradually, the populations located both in the altiplano and on the coast were specializing their economy and, together with it, creating new production instruments that responded to the type of activity they developed. The domestication of camelids and possibly guinea pigs and

dogs is consolidated. In some cases they leave the caves and shelters as natural refuges to develop a new settlement system, qualified as an incipient villager. On the other hand, the economic contacts are more intense thanks to the specialization of the activity and possibly to the beginning of a primary agriculture that gave them a greater tendency to sedentarism and the generation of some surpluses of agricultural and maritime production; also, time to exchange them. In Tacna, this period has begun to be defined thanks to the works of Danielle Lavallé, in the quebrada de Burros; however, we also assume its presence in more extensive habitats of the coast and in the lower valleys from Sama to Ite. We believe that in the sites of Punta Meca, Tomollo and El Calvario, there would be the cultural remains of these societies. The recently known experiences of archaic populations for the Ilo coast (sites: Kilómetro Cuatro and Villa del Mar) are important given the geocultural unit that exists with the Tacna coastline. In Arica, this period is based on coastal societies closely linked to coastal resources and beach waters; immersed in a stage of economic specialization and a deep funerary ritual, expressed through the burials of the Chinchorro phase (4,000-2,000 BC). Towards the end of the period, the groups of Quiani and the Chapel, initiate the process of agriculture through the cultivation of sweet potato, squash, etc.

### The formative period (800 BC-500 AD)

Apparently, maritime economy populations consolidate their activity and launch themselves in search of new productive spaces and attractive ecological resources such as: mouths of rivers, streams with temporary waters that flowed into the Pacific, nearby terminals of rivers and sectors low and medium valleys. This phenomenon allowed the real take-off of agricultural activity, livestock, traffic of goods and artisanal activity in what corresponds, fundamentally, to the knowledge of ceramics and weaving in cotton and wool. Contacts with populations located in the Titicaca basin (Qaluyo, Chiripa, Huankarani and Pucara), who would have achieved certain economic and technological prestige (urban, agricultural and pastoral development), helped a lot. In Tacna, we find evidence of this period in the archaeological site called El Atajo (Valle del Caplina), which tentatively is located around 800 or 600 years BC. It is a settlement with characteristics of an incipient village system, cultivators of squash, chili and cucurbits; with knowledge of ceramics, wool weaving and copper handling for the elaboration of domestic artifacts. Its pottery is very simple and analogous to that existing in

other sites of the same period as Carrizal and Pocoma on the coast of Ilo; Huaracane in Moquegua and; Faldas del Morro, El Lacho, Alto Ramírez and Cñamo in Arica-Chile. So far, we could consider this cultural process as a middle phase of the Formative in the western valleys of the Andean Center-South Area.

The existence of impressive groups of mounds or artificial mogotes in the valley of Caplina (from Magollo to Pachía), in Sama (sector of Inclán) and in Locumba (San Antonio site), built for funeral and ritual practices, and their possible link to the Tumuli of the Alto Ramírez de Arica phase (with dates ranging from 500 years BC to 400 AD); they would be supporting the possibility of the presence in Tacna of a Late Formative. And with it, the development of a significant agricultural activity with crops of corn, beans, squash, pumpkins, etc. In the same way, the commercial contacts with populations of the altiplano, neighboring coastal valleys and the coast, were more than satisfactory.

### **Altiplanic presence (500 AD-1200 AD)**

Contacts with the altiplano and the Titicaca basin intensified, as well as other productive activities of local and regional cut. In Tacna, the process is evident from the arrival of settlers from the then flourishing Tiwanaku State, who selectively occupy productive spaces in the middle sectors of the valleys of Locumba (archaeological sites: Alto Cairo, Ticapampa, Guaylata, Conostoco, San Antonio), Sama (Sama la Antigua) and Caplina (Magollo, Para and Calientes-Tocuco). The Tiwanaku, introduce contributions in agriculture, livestock, ideology, technology, ceramics, textiles and settlement patterns. They cultivated with intensity the maize, aji, zapallo and others, whose surpluses were transferred in great llama caravans to the populated city and capital of the Tiwanaku State. Strategically they build their houses in high places, next to their productive spaces, near the confluences of rivers and high quality productive lands. The cultural and ideological hegemony of Tiwanaku against its colonies and peripheral dominions indirectly motivated the local ethnic reinforcement and the later origin of identities with very unique economic and cultural characteristics, totally opposed to the Tiwanaku central power. It is possible that during the Tiwanaku period, thanks to the intense displacement between the coast and the high plateau, the first routes or stable regional intercommunication routes have been defined.

### **Ethnic identity and late regional development (1000 AD-1445 AD)**

The decay of the Tiwanaku State in its area of influence, allowed the rise of altiplánicos lordships as the Colla, Pacaje, Lupaca, Caranga, Ayaviri, etc and the appearance of local coastal developments throughout the western valleys of the South Central Andean Area. In Tacna, Arica and Moquegua (which make up a geo-cultural unit) a regional culture was developed with specific characteristics for each valley. They intensified the territorial occupation of the coastal and pre-Andean areas, in which they developed a strong agricultural, livestock and exploitation of the resources of their environment; likewise, they fostered the high sense of economic interaction with other societies of the Southern Andes. In the textile and pottery industry they created an auspicious variety of shapes and designs; they stand out for example: the linear and geometric decoration, the spirals, circles, diamonds, volutes, representations of regional flora and fauna, mystified beings, etc. Sculptural ceramic works are important. On the other hand, the works in wood, vegetable fiber, metals (copper, gold, and silver - the latter to a lesser degree), bone, stone and seashells, are significant.

The valleys were systematically and rationally occupied by the various local cultural styles such as: Chiribaya, San Miguel, Pocoma

and Gentilar; which were characterized by achieving an adequate technology for the exploitation of the resources of the valley, marine littoral and a permanent link with populations settled in the pre-Andean valleys of the region and the high plains. In Tacna, a local style called "Sitajara" has been identified, whose sphere of influence was preferably the headwaters of the valleys (zone of the pre-Andean valleys), whose economic and social interaction with coastal cultures was very successful. These groups, gradually in time and space, were occupying Tacna territory, modifying it to suit their interests. Later, with the arrival of the Incas in the area, there were some important structural changes.

### **The late period and the Inka occupation in Tacna (1447 AD-1532 AD)**

Defeated the Chancas and later consolidated the alliance with the powerful Collas del Altiplano, the Inca PACHACUTEC burst the borders of Cuzco to start the birth of what was, later, the astonishment of the world:

#### **The empire of tahuantinsuyo**

The annexation of the Tacnan territory to the Inka control, it is possible it was given during the government of Tupac Yupanqui (son of Pachacutec) by the years 1475 approximately. Everything indicates that the annexation was carried out peacefully. Installed the Incas in Tacna, introduce MIT'A as a new production system and road network. Ceramics and textiles tend to show new forms and decorations (they become more functional than artistic). Evidence of the Inka presence in Tacna, we can observe it in the archaeological sites of: Peañas, Pachía, Challata, Pallagua, Palca and Huaylillas in the Caplina valley basin. Sama la Antigua, Pampa Julia, Yalata, Kanamarca, Capanique, Huankarani and Qhile in the basin of the Sama River. Pocoma in Locumba. Los Hornos, Quedrada de Burros, Morro Sama, Punta Meca and Ite in the Litoral. Jucuri, Inca Moqo, Conchachiri in the Andean Tacna region. In all the agro-pottery development of Tacna, there were three constants that ultimately characterized the behavior of the Quechua and Yungas of these parts: rational use of water for agricultural activity; intense commercial activity with populations of the altiplano and other ecological spaces and the deep magical-religious sense of their behavior, expressed in the variety of symbols represented in their textiles, ceramics, petroglyphs, geoglyphs, others.

#### **Archeology at the archaeological site of Moqi**

This work is part of Archaeological Research Project Moqi-Peru, in his three seasons. We consider the project an option to know the presence of the Inca Empire in the valleys of Tacna and its relationship with the structures and institutions established by the Cusco capital in the conquered territories outside the immediate sphere of the capital. In general terms, we intend with the beginning of this project to determine the formal characteristics of the architecture of the archaeological site and its possible differences between Moqi Alto and Moqi Bajo; define the temporality of the archaeological site, its function and economic relations in the internal context, and its articulation with the Inka state; and to know the demographic characteristics of the population and their social relations, through the mortuary component in Moqi Alto and Moqi Bajo.

The methodology in archaeological investigation in Moqi, so far in the seasons Research 2012, 2013 and 2014, has allowed a work in five fronts: fieldwork, cabinet and laboratory collect controlled ceramic of surface, excavations in housing and open spaces, excavations in cemeteries and architectural analysis. The progress of the analysis of

the architectural component of Moqi Alto, determined the presence of three main building terraces that modeled the Moqi hill and seven sectors with housing, open spaces, plazas, accesses, a ceremonial platform and underground structures. Fixes were determined with regular and irregular walls, retaining walls of terraces and leveling reinforcement and fillings of the building terraces. The constructive units were defined by court-type spaces and on the basis of open spaces with rectangular-shaped enclosures, double walls and rigging with false foundations, which in summary evidence the existence of a monumental architecture of the Inca type, of probable administrative function, military and ceremonial.

The archaeological site of MOQI se Moqi is located in the context of the river basin of the Locumba River, at the convergence of the tributary rivers of Borgueña and Cambaya, between the 70° 25' 39" and 70° 28' 44" of West Longitude and 17° 18' 24" and 17° 22' 19" of South Latitude, at an altitude between 1.800 and 2.880 meters above sea level. Politically it is located in the district of Labaya, province of Jorge Basadre, department and region of Tacna. The site has been declared Cultural Heritage of the Nation by the then National Institute of Culture (today Ministry of Culture), through the National Director Resolution No. 634 dated 04/24/2009. For the purpose of the research project, the archaeological site or is sectorized in Moqi Alto and Bajo Moqi: Moqi Alto (MA): It is located on the summit of the hill of the same name, between the rivers and towns of Borgueña to the North and Cambaya to the South, where both rivers converge at a distance of 1.400 meters SW of the archaeological center. It is a set of rectangular-shaped enclosures, built around open spaces and terraces that line the top of both hillsides. The structures are exposed on three levels or "platforms" on the elongated top of the hill, associated with cemetery spaces, deposits and defensive structures.

Low Moqi (MB): Located in a lower level, 200 meters west of Moqi Alto (MAI), over the entire extension of the hill "Moquigua" of short elevation and conical shape. It is located in the basin of the Borgueña River, associated with agricultural terraces in production and abandonment. On the top of the hill, rectangular enclosures have been built around open spaces or patios (with underground structures inside), associated with other smaller buildings located on the southeast slopes of the hill. In the North and Northeast slopes, more underground structures (tombs and deposits) of different dimensions are added.

### **Moqi and the preliminary discussion in the context inka**

The presence of the Inca State in northern Chile, southern Peru and northwestern Argentina according to archaeologists Williams, Santoro, Gordillo, others, came under a solid system of administration, which made the local populations integrated into the political, economic and ideological structures of the Inca, in whose process the provinces affected their home ways of life. The explanation of this process of annexation of territories to the Inca state, was carried out under the hegemonic control systems (government of less visibility and state investment: movable property, corresponding to circumstances where the presence of the State does not materialize in works of infrastructure, so-regret through objects of prestige in domestic and ceremonial contexts and spatial association with Inca administrative centers) and territorial control (strong intervention of the state administrative apparatus in the provinces: agricultural resources, miners, maritime, sacred spaces, administrative centers, networks vials, tambos, irrigation systems, andenerías, colcas).

The traditional explanations about the relationships of the valleys of Tacna and Arica with the Inca state, indicated indirect control by of the altiplanic kingdoms already annexed to the state, and that did not respond to a management of Direct administrative interest from Cusco.<sup>1-9</sup> However, when reviewing the archaeological evidence in the Tacna region (it includes the works of the Project Qhapaq Ñan), these they show a set of Inca components that reveal an important state investment and interest in these territories, being the site of Moqi one of the most important in the Western Valleys.<sup>10-18</sup> The effects of this political process in the Tacna region have just begun to be evaluated more precisely.

One of the purposes of the study in Moqi, is to understand and try to explain the site within the background of the archeology of Tacna, especially from its late local societies (1.100-1445 years AD) to the Inca occupation. The largest deployment of productive infrastructure it begins precisely with the late local developments, represented by the coastal styles of Chiribaya, San Miguel, Pocoma and Gentilar. In the pre-Andean zone, the local Sitajara style was developed.<sup>12,13</sup> On these installations the Incas promoted larger investments, especially in the headwaters of the three watersheds of the Tacna valleys (Locumba, Sama and Caplina), between 2.500 and 3.500 meters above sea level, where there are complex platform systems, hydraulic infrastructure, road network and architectural facilities administrative, as the cases of Huancarane, Qhile and Kanamarca in Susapaya and Moqi in Cambaya-Borgueña. In the zone of the regional altiplano, the presence of tambos, kallan k as and roads that descend from the basin of the Titicaca and indistinctly penetrate by the headwaters of the three basins prevail.

In the valleys of the coast and on the coast, the State promoted the production of squash, beans, achira, corn, chili and cotton and fruit trees; and in the littoral the exploitation of "island guano" was the main extractive activity, followed by fishing and obtaining other resources such as mollusks, crustaceans and cochayuyo. The mechanisms of production and distribution of all these goods and products, it would seem to have generated a whole system of interregional vertical and longitudinal traffic, taking as examples: "Sama La Antigua" in the Sama Valley,<sup>16</sup> the site "Cerro Los Hornos"<sup>18</sup> and "Punta Picata" on the coast. Sama La Antigua is a large administrative center that apparently articulates the coast with the altiplano and the sites Los Hornos and Punta Picata are directly related to the control and circulation of marine products. For its part, the sites of Qhile, Kanamarca and Huancarane, are of greater importance, located at the head of the CH de Sama, in the sector of Susapaya. They are associated urban complexes to an impressive infrastructure of platforms, connected to the road network that goes down from the sector of Ilave (western basin of Lake Titicaca) and goes towards Sama and Caplina. In this sector, the kallan k de Qhile and the platform complex of Kanamarca stand out.<sup>19</sup>

Moqi, which is one of the most complex Inca sites in the Tacna valleys, it has two well-defined sectors that we have called Moqi Alto and Moqi Bajo, with well-marked differences and recurrences, whether in its architecture, ceramics and strategic location. We seek to expand the knowledge of the functions performed by both sectors, the relations between its population and especially its economic, social and cultural link with the Inca State. Moqi, seems to represent a classic model of "administrative control center" of the productive spaces of the valleys of Cambaya and Borgueña, installed by an elite demanding the policies of the Inca State. The architectural and spatial complexity of Moqi Alto contrasts with Moqi Bajo's more

modest architecture, which makes us think of a different and probably complementary function. The 2013 season, also seeks to know this circulation system through the analysis of architecture, deposits, ceramics and cemeteries.

In architectural analysis of Moqi according to the preliminary architectural analysis carried out in Moqi Alto, it seems that this sector presents an integral planning that was carried out prior to the construction of the site and that is expressed in a process of Adaptation of the slopes and the narrow upper plain, by cutting the terrain following the contour lines both longitudinally and transverse to the archaeological site. The enclosures and open spaces were distributed in the resulting terraces grouped up to seven (07) sectors isolated from each other by separating walls and terraces. The presence of Sitajara I ceramic materials in the construction fillings, especially noticeable on the west side of Sector II T1, suggests the presence of a previous occupation. The registration of Inca ceramics in the mortar infills of Sector III (Wall ab) implies the possibility of a remodeling of the site during the occupation Inka of the site.

Three (03) main terraces were built around the hill and were used as circulation zones from one sector to another, connecting by p asadizos, bays and ramps. New terraces were added in order to produce new spaces to house the necessary structures to each sector. The terraces are the basis of internal circulation system of the site. The retaining walls reveal the use of two types of rigging (Rig 1 and Rig 2). The rig 1 is irregular and occurs in the walls of the housing. The rig 2, of a better appearance, is characterized by being in the most visible areas of the site and could have an aesthetic function. Both types of rigging are distributed by cloths in some of the walls of containment and the study must be deepened in order to know if they implied differentiated structural aggregates according to the social group constructor. In general, apart from the finish, the walls show techniques of "similar stone abutment".

The buildings were made following the same general technique to the entire site. Continuous walls with three corners tied and one attached. It has not been detected that the attached corners are always in a certain corner but, apparently, they were chosen indiscriminately. The thick raised walls, especially in sectors III and IV, were double facing with filling and the thin walls of double facing without filling. The rig for the total of the enclosures is type 1, irregular without courses, semi-edged blocks and field stone, of small, medium and large size and joined by mortar. The stones used correspond to the formations geologic of the place although some polished stones appear in the walls and that seem to have belonged to fulling mills or large mills. In general, each sector is organized based on the grouping of enclosures closed around an open space. In the case of terraces, especially Sector II and IV are arranged in a linear sequence between both types of architectural structures. This type of architectural pattern is coincident with many other Inca sites of the Central Andes. The presence of a trapezoidal niche in one of the few sections of walls that are still standing on the site (Sector III U4), also it would coincide with the Inca architectural style. The presence of Sitajara and Inca ceramics in the construction fillings as well as in the walls indicate that the Moqi Alto builders removed the remains of a previous occupation, we do not know if prior to the Incas or that there was a remodeling during the same Inca presence on the site. A large amount of Inca pottery on the surface of Moqi Alto confirms that the site was occupied by them.

## Conclusion

We finally inferred that Moqi Alto was a unitary construction, following an integrated construction sequence according to a previous design and the application of a homogeneous constructive technology. All these facts coincident are architectural patterns inka in terms

of functional distribution of space. The presence of a trapezoidal niche and abundant Inca ceramics on the surface confirm this fact. The architectural analysis must be deepened by conducting strategic excavations in disturbed areas (recovering, the original profiles) as in those that are undisturbed; in order to answer the research gaps still pending on the site.

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## Conflicts of interest

Author declares that there is no conflicts of interest.

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