

EL TAJIN: PRESERVING THE LEGACY OF A UNIQUE PRE-COLUMBIAN
ARCHITECTURE IN MESOAMERICA

By

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To my always loving Dad, Enrique; and to the memory of my Mom, Vilma

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Abstract of Thesis Presented to the Graduate School
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El Tajin: Preserving the Legacy of a Unique Pre-Columbian Architecture in Mesoamerica

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Before the arrival of the Europeans into the New World, there were already a great number of cultures in the Americas that settled, worked, and developed into grand dynamic centers. El Tajin became one of the most significant centers in Mesoamerica during the Pre-Columbian era around 600-1100 CE. Its significance was due to its large number of ballcourts, sophisticated art forms, and unique architecture. This vast site is located along the northern Gulf Coast of Mexico. In this study, the history, architectural influences, and building techniques at El Tajin are broadly examined. The following research helps to better understand the evolution of the unique building techniques achieved at El Tajin within the context of other Mesoamerican cultures. My interest in this research ignited when I became aware of the implementation of a form of poured-concrete utilized by the builders of El Tajin on its final phase of construction. This innovation in building technique of El Tajin was then unknown in the region of Mesoamerica.

As part of this research, federal local laws for archaeological sites and monuments are also examined. The Institute of Anthropology and History in Mexico, [INAH], is the bureau that oversees the process from nomination, registration, research, restoration,

and conservation of historic and pre-historic sites. The federal law for monuments and archaeological zones has been enforced since 1972.

All of the elements explored in this study are vital to validate the significance of this archaeological site. Its history, geography, cosmology, and adjacency to other cultures are a part of what made El Tajin a unique product. Its art and architecture is exquisite and refined; no other site in this region is similar in quality to El Tajin. Architectural features like the cornisa (flying cornice), and the greatest number of ballcourts in Mesoamerica, made a name for the site. The inclusion of a form of concrete in the later phases of its construction represents a paradigm shift in the entire culture of the Gulf Coast of Mexico. Concrete slabs, which covered open interior spaces, were a concept never before attempted in Mesoamerica. The implementation of a form of cement made from local materials was necessary for the use of concrete, the manner in which artisans worked in painting, sculpture, and ceramics, also set El Tajin apart from its contemporary cities. Therefore, all of these accomplishments contributed to the admission of El Tajin city into the UNESCO's world heritage in 1992. As part of this research, a number of preservation recommendations have been included at the end of this study. The goal of this study is to create an awareness regarding the importance of preserving Pre-Columbian sites like El Tajin, and to better understand the unique cultures of Pre- Columbian America.

CHAPTER 1 INTRODUCTION

On the Gulf Coast of Mexico, now the modern state of Veracruz, a great number of cultures occupied and enriched this region with art, mythology, and architecture, but few prevailed and influenced the latter coastal groups, as did El Tajin. It enjoyed a strategic location for trade with both the Maya area to the south, and central Mexican to the west. Instead of becoming the cultural satellite of either area, El Tajin developed a unique culture, while sharing some characteristics with contemporary Mesoamerican centers, and creating others completely its own (Sarro 1995, p. 1).

This important archeological site is included under the umbrella known as the “Classic Veracruz Style”. The term incorporates geographical, chronological, and artistic referents, and provides a malleable framework that supports a diversity of research interests (Arnold 2008, p. 2).

The exact time frame of El Tajin is still disputed among scholars, although the most accepted dateline is the one that corresponds to the ninth and twelfth centuries of our era. This inference results from studies of its ceramics, and from C14 (radiocarbon) dating studies (Ladron de Guevara 1999, p. 18). According to Ladron de Guevara, this last study places El Tajin temporarily on the Late Classic and Early Post-Classic Periods. This time period is based on the traditional, and greatly debated, Mesoamerican dateline.

El Tajin is more than a group of ancient ruins; it is an outstanding example of engineering, urbanism, culture, and mysticism. It is also within the land of the modern Totonacs, the last group to have occupied the vast area after its collapse in the twelfth century of our era (Ochoa 1989, p. 26). Conceived as a cultural and religious center, the

archaeological site of El Tajin included approximately seventeen “ballcourts”. In the Epi-Classic era of Mesoamerica, El Tajin was believed to have more ballcourts than any other sites (S. Ladron de Guevara, personal communication, July 13, 2009). It has also been proven that a distinctive form of light mortar cement, very similar to our modern counterpart, was greatly utilized here during the final phases of building (Wilkerson 1987, p. 38).

The builders at El Tajin were mostly known for using techniques and materials that were uncommon throughout the Gulf Coast area. One of these innovations was the inclusion of a type of poured concrete similar to the one used by the ancient Roman civilization known as Pozzolanic cement.

Pozzolanic cement is formed by siliceous and aluminous materials, this blend became the natural cement used in the classical world (Harris 2005, p. 757). According to Raymundo Rivera Villareal, an engineer dedicated to the study of concrete in Mexico for more than 30 years, at El Tajin, a version of this mortar was the one responsible for the construction of flat roofs in the later phases of the city. This is clearly visible in the surviving roof fragments of a structure called “Building C” (Wilkerson 1987, p. 37).

At El Tajin, builders were able to attain new solutions to structural challenges in interior spaces due to this unique technology. In recent years, the site has received the accolades of scholars around the world, resulting in the inclusion of El Tajin’s archaeological zone into the World’s Heritage Monument through UNESCO.

When one studies the El Tajin site, it is imperative to understand its cultural affinities with groups in its vicinity. In chapter 2, the geographical limits of Mesoamerica are discussed, and the different groups that occupied this region are explored. El Tajin

is thus understood not only as an isolated archaeological occurrence, but also as a portion of a greater entity. Once the relationship with the rest of Mesoamerica is established, the significance of El Tajin in this vast area is demonstrated.

In Chapter 2, a general passage of the history of the first settlers in North America is reviewed. The development of society from hunters and gatherers, and the importance of “maize” or corn as a main staple, is also covered. The region of Mesoamerica, and the different characteristics that unified the region, are also contemplated with the purpose of comparisons in later chapters. El Tajin is located in Veracruz, Mexico, and it is at the center of a style that developed in this area. This style is known as the “ Classical Veracruz style”. Three types of cultural objects present are characteristics of this style: yokes, hachas, and palmas (J. M. Pohl, p. 147). All of them are ornaments utilized by players of the Mesoamerican ball game.

Chapter 3 advances into modern day Mexico, with examination of the laws established in the early 1970s relating to preservation and restoration of national monuments. A personal conversation quoted in this chapter with Archaeologist Vazquez, and Architect Garcia & Garcia of the Universidad Veracruzana (University of Veracruz in Xalapa, Mexico) is crucial to understanding the process of nomination. Both scholars worked on the “El Tajin Project” which formally began in 1984 under the direction of Archeologist Juergen Bruggemann. Dr. Bruggemann is one of the most relevant figures related to the study of El Tajin, and was involved in a series of important projects in Mexico during the course of his extensive career. In Mexico, he obtained a master’s degree in archaeology followed by a doctorate in anthropology. Today on the

Gulf Coast, and after his death in June of 2004, the impact of his incessant scientific work is still felt.

El Tajin's topography is described in Chapter 4. An account of the archaeological zone occupied by the urban complex includes 168 buildings and seventeen ballcourts. The significance of the place and the inhabitants' particular idea of the cosmos are also introduced. According to S. Ladron de Guevara, (archeologist, anthropologist, and Director of the Museum of Anthropology in Xalapa, Veracruz), the cosmology of the people of Mesoamerica is an important factor in the conception of their architecture (personal communication, July 13, 2009). An overview of the climatic conditions that affect the archaeological region of El Tajin is presented in Chapter 4. As part of the preservation discussion, the impact of the natural elements on the architectural structures is analyzed.

Chapter 5 briefly studies the cultural groups that preceded El Tajin. Cultures associated with this region are explored so a comparison can be established in future chapters. The Olmecs are the first group explored. According to modern archaeology, this group was the first culture to occupy this region. The earliest expressions in monumental art are found in Olmec stone sculpture, most notably the thick-lipped, flat-nosed portraits of warlords found at Pre-Classic (900-400 BCE) San Lorenzo (Pohl J, Mesoamerica, *Arte y Escritura En la Antigua Mesoamerica*, FAMSI 2009). They are also considered the most advanced, and the most artistically refined group.

Understanding the collapse of the classic city of Teotihuacan is crucial when studying the cultures of the Gulf of Mexico as it provoked the development of other cities in Mesoamerican territory. According to Ladron de Guevara in her article "Los Rumbos del

Universo en el Tajin” (Pathways of the Universe in El Tajin) the Teotihuacan legacy is evident in most of the centers of the Gulf of Mexico.

The significant early occupation of the Huastec group in this region is also explored in Chapter 5. There are still discrepancies concerning the initial builders of the site. The popular theory however points to the Totonacs as the builders of the city of El Tajin. The modern day Totonacs, who are thought to be descendants of the original builders of El Tajin, still occupy the outskirts of the great site. Modern descendants of the Totonacs also occupy an extensive part of a region in Veracruz called the Totonacapan. This zone is located in the central portion of the Gulf Coast of Mexico. The region was named “Totonacapan”, due to the Totonac groups who settled in that region around 600-900 CE (Totonacapan, “Primeros Asentamientos”, 2009).

Due to its geographical immediacy, the long-lived civilization of the Maya is also briefly included in Chapter 5. The time periods of El Tajin and the Maya civilization slightly overlap, and there are certain social characteristics that one can distinguish among them. This last inclusion is only an observation of this study, and more research needs to be undertaken before we can negate the possibility of an architectural link.

The core of this study in Chapter 6 is an interpretation of the ideology of the cultures of the Gulf Coast of Mexico, as well as the cultural principles of the region. In Mesoamerica, the way the inhabitants of this vast region perceived life shaped the manner in which they would construct their ceremonial and residential centers. The peoples of Mesoamerica, including the later Aztecs, conceived the world as a square or rectangular plane (indicating the four cardinal directions on each side), with water surrounding the square, and the sun at the center of the universe. This last idea is

evident among relevant codices in Mesoamerica (S. Ladron de Guevara, personal communication, July 13, 2009). El Tajin culture is no exception, and cosmology combined with ancestral beliefs patterned its urban setting. According to Ladron de Guevara, most Mesoamerican ceremonial sites are positioned in between two ravines, and such is the case with El Tajin. Its urban planning is a representation of the Mesoamerican cosmos. The important role iconography plays in the study of El Tajin should not pass unnoticed. However, given the nature of this study, it will be only briefly covered.

In addition, in Chapter 6, several distinctive features unique only to El Tajin are identified; among these are its “ballcourts.” These structures are generally common throughout Mesoamerica; however, El Tajin is the only site in this region with so many courts (Scarborough 1991, p. 48). Due to these numbers of ballcourts, it appeared that the site was perhaps a training center for the Mesoamerican ballgame.

Also in Chapter 6, a special form of cement utilized in some of its later phases, the use of corbelled arches, i.e. a type of Mayan arch, the innovation in the use of concrete slabs, the architecture, and social stratification are examined. Garcia Payon and Ignacio Marquina suggested that the Mayan arch utilized in a building at El Tajin Chico known as “Building A” is indeed a resemblance of a Mayan arch (as cited in Bruggemann et al., 1992 p. 157). The use of this special form of concrete at El Tajin, and the manner in which its builders solved technical challenges are the reasons behind the interest and development of this research.

In Chapter 7, the role and latest efforts of national institutions as the INAH and international organizations such as UNESCO are also reviewed. Personal observations

included in Chapter 7 are product of our on site research. As a result of these on site observations, a number of preservation recommendations have been included as part of this research on Chapter 8.

This study was conducted while visiting the cities of Papantla, Xalapa, and Veracruz, in the Republic of Mexico during the summer of 2009. A great part of the information obtained is the result of personal conversations with archaeologists, architects, and anthropologists whose close participation in the documentation of El Tajin throughout the years has established them as reliable sources.]



Figure 1-1. Map of Mesoamerica. Museo de Antropologia de Xalapa. Photographed by Ileana Olmos.

CHAPTER 2 MESOAMERICA

The First Settlers in Mesoamerica

Around 5,000 BCE, the first settlers occupying America learned agriculture, and this is how the need for permanent settlements began. The settlers changed from nomadic to sedentary, built dwellings for refuge, and domesticated animals. Due to our recent academic involvement, it now appears that the hunters and gatherers did create architecture. Their main agricultural staple became: maize. They also harvested a form of pumpkin, chili peppers, and beans. According to archaeologist Richard Mc Neish, who studied the sedentarism in Mexico, and how they developed and controlled agriculture, the first settlers in the Tehuacan valley of Puebla, Mexico, became the group with the most effective results in growing maize. In the beginning, the corn was modest in size, but eventually its quality improved, until it became the main staple of these communities (State of Veracruz Government 1990, p. 27).

Soon after the first people managed to solve their subsistence and shelter issues, they began producing decorative objects, utilizing materials like obsidian, clay, and bones. Eventually, jade, quartz, turquoise, and serpentine were also introduced.

Life among these agricultural groups evolved slowly, and a segregation of work was established. In these communities, the population was divided among those who hunted, fished, and harvested, and others who became artisans.

Geographical Extension

The development of agriculture greatly influenced cultural integration before the Pre-Hispanic era, to such a degree that many scholars take the agricultural development approach to propose a distinction between sedentary peoples and hunters

and gatherers. These points of view also lead to the consideration of dividing these groups into two large cultural and geographical areas. The first area is denominated Mesoamerica. This includes Central America to the South and reaches to the Sinaloa, Santiago, Lerma, Moctezuma and Panuco rivers in the north (Figure 1-1). The lands north of these rivers are known as “Aridoamerica” (arid America). This region, where vegetation was poor and rivers were few, people who very seldom practiced agriculture inhabited it.

To understand who occupied the region of Middle America, it is imperative to understand the physical limits of such an area. The term “Mesoamerica” is related to a geographical area occupied by a great variety of ancient cultures that shared religious views, art, architecture, and technology that made them unique in America for almost 3,000 years: from 1500 BCE to 1519 CE, the time of European contact (Kirchoff P. 1943, p. 30). Honduras, Belize, and El Salvador formed what is known as Mesoamerica.

El Tajin is not only an ancient urban site on the Gulf coast of Mexico; it also constitutes the most significant city representing the Classic Veracruz culture. It was one of the largest cities to develop during the Mesoamerica chronology. This provides a significant reason for the review of this geographical region.

General Cultural Features

Many of the aspects of these ancient cultures continued into the present times and many of their cultural advances and exchanges have found their way around the entire world. Among the most distinctive of these cultural traits is the theme of a common calendar based on the permutation of a 260-day sacred round cycle (composed of twenty named days and thirteen numbers), and a 365-day solar year

count (composed of eighteen twenty-day “months” and a five-day period of bad luck at the end of the year)(Kowalski 1999, p. 3). This calendar system was present at El Tajin.

Other significant general features shared among the peoples of Mesoamerica are hieroglyphic writing systems and bark-paper or deerskin screenfold manuscripts (better known as codices). Important to our study is the extensive astronomical knowledge based on horizon observation. This scientific practice was related to a sacred ritual played with a rubber ball known as the Mesoamerican ballgame

Sacrifice is a common theme in the Mesoamerican ballgame. The ballgame is not only necessarily strictly religious in nature, but also serves to allow public reaffirmation of power and to demonstrate the prerogatives of status (Scarborough and Wilcox, 1991 p. 51). Another social commonality in Mesoamerica is related to the sacrifice of victims as a result of organized warfare. The significance of blood to Mesoamericans is seen in the practices of self-sacrifice and penance involving fasting, sexual abstinence, and the drawing of blood from one’s ears, tongue, or male genitalia (Kowalski 1999, p. 4).

The phenomenon of the cities in Mesoamerica differed from other cities of antiquity that settled by the rivers, coasts, or near commercial routes. In Mesoamerica, the cities were established in an array of environments, disregarding climate, topography or hydrography (Bruggemann, J 1994, p. 26). Many cities in Mesoamerica were initially established, as ceremonial centers, with a minimal permanent population, and later due to their growth, became greater urban centers. As a result of its development, a bureaucratic government was established, occupying residences built

for governing, and a population of sustaining artisans and merchants was also developed.

A common economic practice developed in Mesoamerican cities was commercial trade, which consisted of the exchange of urban products for rural ones. The authorities in the city promoted trading for the purposes of commerce, but only a minor part of the population participated (Bruggemann 1993, p. 26).

Mesoamerican architecture was also unique and distinguished by forms such as truncated stepped pyramids, polished stucco floors, and ballcourts (Figure 2-1). In Mesoamerica, pyramids were not designed with interior functioning spaces in mind. Many early pyramids were first conceived by building a significant delimited compacted earthen mound, which was then enclosed by precisely quarried stones, covering the mound to the very top (Figure 2-2). At the top of the mound a temple shrine or “teocalli,” made mostly of perishable material and considered to be a representation of a smaller cosmos, was built with a square or rectangular altar to serve as a sacred place where the priests performed tributes to their deities (Garcia y Garcia, personal communication, July 21, 2009). According to Ladron de Guevara, the exterior architecture had greater significance, since the temples at the top of the pyramids, were off-limits to the general populace, and the rather narrow dimensions of the steps built on the structure were purposely designed in this manner as part of a ritual associated with honoring their gods (personal communication, July 13, 2009). It was considered disrespectful to face the gods straight on, and it was also considered disrespectful to show ones’ backs to the audience, so the high priest climbing the temple would climb

the stairs in sideways view (H. De Leon Perez, personal communication, July 26, 2009) (Figure 2-3).

In Mesoamerican architecture, there is also a feature that appeared across a great geographic span, the “talud y tablero”, which in its prevalence is a feature of the Mesoamerican classic order. It is a repetitive architectural feature in Mesoamerican architecture that varied throughout this vast zone depending on the specific group that employed it. It consisted of a framed vertical panel, or the tablero, on top of an inward-sloping surface or panel, the talud (Figure 2-4). This feature originated at Teotihuacan and spread to the Maya area and beyond.

Deities represented as animals and natural elements such as fire, earth, water, and movement (ollin), also known as the wind, are prevalent in Mesoamerica. These deities varied depending on the specific cultural group of a region. A great array of mythical representations were adopted and represented in zoomorphic, and anthropomorphic sculptures, as well as in mundane objects (Figure 2-5). The mythological representations are at times three different cosmic entities, and at the same time just one (S. Ladron de Guevara, personal communication, July 21, 2009).

Finally, and perhaps most importantly for development in the Americas, was the cultivation of specialized foods including maize, beans, and squash, together with cacao (chocolate) and fermented beverages made from maguey. Many of these foods became the staples of a universal diet we continue to thrive on today (Pohl J. , “Origins of Civilization”, FAMSI 2009).

Cultural Periods

Mesoamerica once boasted a population of over 50 million people living throughout an area approximately contiguous with the modern nations of Mexico, Guatemala, Honduras, Belize, and El Salvador. Today each of these countries is distinguished by the manner in which it has blended its Pre-Columbian Indian and Colonial Spanish heritage (Pohl J., "Introduction of Mesoamerica", FAMSI 2009).

Archaeologists divide Mesoamerican cultural development into three major time periods: the Pre-Classic or Formative period extending from 1500 BCE to 300 CE, the Classic period extending from 300 to 950 CE, and the Post-Classic period extending from 950 to 1521 CE. The Classic period was characterized by the appearance of urban state societies throughout Mesoamerica. The leading polity was Teotihuacan. Its population was over 100,000 inhabitants, and it was considered one of the largest cities in the world between 200 and 700 BCE. El Tajin's culture is believed to fall within the Classic Period, but there are still discrepancies surrounding this timeline, and many scholars place el Tajin in the Post-Classic, while others used both cultural, and scientific arguments to place this culture in the Epi-Classic period 600-1100 CE. In our research we have chosen the last period for studying El Tajin's site.

El Tajin was first occupied during the Classic, when it was a village among many others. Sometime in the seventh or early eighth century, El Tajin began the methodical conquest and transformation of important regional sites, and much of the evidence for the Classic culture is found in the fill of Tajin style Epi-Classic buildings (Coe and Koontz 2008, p. 108).

By almost any criteria, the Classic Period is thought to be the most remarkable in the whole development of Mesoamerica. This period is also the one during which the

peoples of Mexico and the Maya area developed civilizations that could allow comparison with those of other parts of the world (Coe 1994, p. 89). The Classic is also equated to the Golden Age of Mesoamerica, since it represented the culmination of developments in the Pre-Classic period.

According to Coe, not all the peoples of Mesoamerica entered or exited the Classic phase at the same time. The Classic span is based, in some instances, on the period in which the lowland Maya were inscribing Long Count dates on their stone monuments (around 250 to 900 CE). The Long Count calendar was a Maya system, which identified a date by counting the number of days that had elapsed from August 11, 3114 BCE.¹

Central Mexico also began the Classic Period in the second century CE and possibly even earlier, when urban construction began at the great city of Teotihuacan. The far western part of Mexico does not give indications of reaching the greatness of the Classic Period. Teotihuacan fell into ruin long before the last Classic Maya cities were abandoned.

Literature from the Classic period did not survive, but various forms of hieroglyphics are attributed to the Maya, and to a less significant extent to other cultures like the earlier Zapotec. Dates were generally recorded in terms of the 52-year Calendar Round. However, in the Gulf Coast during the first half of the Classic, the Long Count was used, perhaps to record history (Coe 1999, p. 89).

¹ In the proleptic Gregorian calendar or September 6 in the Julian calendar (-3113 astronomical year numbering). Rather than using a base-10 scheme, like Western numbering, the Long Count days were tallied in a base-20 scheme. Thus 0.0.0.1.5 is equal to 25 days after the start day, and 0.0.0.2.0 is equal to 40 days after the same.

El Tajin is traditionally placed in the Classic- to Early Post-Classic period, due to the timing of its cultural development between the ninth and twelfth centuries of our era (800 to 1100 CE). This denomination comes basically as the result of ceramic studies completed in the area, and some C14 (radio-carbon dating) studies.

According to archaeologist Ladron de Guevara, the development of the culture of El Tajin took a different shape based on its own dynamics as a center. She firmly proposes a different timeline for El Tajin, placing El Tajin in the period known as the Epi-Classic period. After the fall of greater centers of the Classic, such as Teotihuacan, and some other Maya centers [although at different times in history], new centers flourished as emerging states in development. This was part of a ruralization phenomenon, which took place and gave entrance to the subsequent articulation at powerful focal points of cities such as Xochicalco, Tula, El Tajin, Chichen Itza and Uxmal (Ladron de Guevara 2005, p. 29).

The archaeologist Juergen Bruggemann supports this theory with specific archeological and architectural phases evidenced in the Tajin Project of 1984, which will be covered in subsequent chapters of this study. (Dr. Bruggemann directed works of restoration and rehabilitation at El Tajin from 1984 until his death in 2004).

Pre-Columbian Cultures in Central Veracruz

The beginnings of the cultures of Central Veracruz could be most accurately placed between the years 100 and 200 CE. These cultures are known as either Central Veracruz or El Tajin. This group of cultures reached its peak around the years 450 and 850 our era. The ethno-linguistic identity of these peoples is still under study, but according to linguistic studies, cultural material, and historic sources, everything tends

to point to the fact that it is unlikely these early inhabitants were Totonacs.

There are three main cultures that occupied the Veracruz territory before the coming of the Spaniards to Mexico. These cultures are: the Olmecs, to the south, the Totonacs, in the central area, and the Huastecs to the north.

The Olmecs

The most ancient Mexican civilization is the one known as Olmec. The term “Olmec” translates as “rubber people,” a term given by modern archaeologists based on the Aztecs’ term for Gulf Coast traders (King 1985, p. 23). The Olmec flourished during Mesoamerica’s Formative period, dating roughly from 1200 BCE to about 400 BCE. According to a current theory espoused by Gareth Lowe, an archaeologist with Brigham Young University, the Olmec may be related to the Zoque, a people who live today in the northern part of the Mexican state of Chiapas.

They were the first Mesoamerican civilization to initiate ritualistic practices that would form part of later cultures. Some of these practices were related to bloodletting: a ritual where self-cutting is involved. This ritual was a public performance mainly done by members of the elite to establish their status, signifying self-sacrifices to the gods, and honoring their lineage. The Olmecs also played ball and traded rubber (State of Veracruz 1990, p. 20).

For many years, archaeologists had known about miniature jade sculptures and other objects in a distinctive and influential style that emphasized human infants with snarling, jaguar-like features. A great sample of this culture is part of the permanent exhibit in the Museum of Anthropology of Xalapa, state of Veracruz, Mexico (Figure 2-6). Most of these sculptures could be traced back to the scorching Gulf coast plain, the region of Southern Veracruz and neighboring Tabasco, just west of the Maya area (Coe

1994, p. 61).

There is still great debate about the origins and fall of the ancient Olmecs. One possible explanation is found in the linguistic debate that has surrounded this culture. It is believed that an unbroken band of Mayan speech extended along the Gulf Coast all the way from the Maya area proper to that of the Huastecs, and that the region in which Olmec civilization was established could have been in those isolated times Mayan-speaking language (Coe, 1994 p. 62).

This civilization thrived in the arts, with several art forms that they conceptualized and perfected. This culture still intrigues scholars and their exquisite works are still revered around the world. The Olmec were above all carvers of stone, from gigantic colossal heads, stelae, and altars of the Veracruz-Tabasco region, to finely carve jade celts, figurines, and pendants found throughout Mesoamerica (Coe 1994, p. 65) (Figure 2-7). The Olmec heartland is an area on the south coast of the Gulf of Mexico coastal plain of southern Veracruz and Tabasco, thus called because of the concentration of a large number of Olmec monuments as well as the greatest Olmec sites of San Lorenzo and La Venta.

The Huastecs

The total coastal area is divided into three sub-areas: Huastec, along the Atlantic band, from the Panuco river to Tuxpan, the Totonac, from the Cazonas River to La Antigua River, and meridian Veracruz, from Cotaxtla to Coatzacoalcos.

The Huastecs were the last Pre-Conquest Mesoamerican group to the north, and adjoined to Chichimec and nomad warrior indigenous groups. Archaeology and historic sources have shown that at the time of the conquest, the Huastecs extended their occupation towards the north to the modern state of Tamaulipas (Ochoa 1989, p. 42).

The Huastecs were a great influence over the Post-Classic Toltec Empire, and through these ways coastal features reached the valley of Mexico.

The Classic Veracruz Style

A great number of fine stone objects found on the Gulf Coast plain, carved in a very distinct style have become known as examples of “Classic Veracruz style”. Many of them are from the northern and central parts of the state of Veracruz, zones in which are located several great elite centers that shared the same art tradition. This style is very unique in Mexico.

The classic Veracruz style commonly appears in a complex of enigmatic stone objects, the so-called yokes, “palmas”, and “hachas”, or axes (Figure 2-8). Recent research has shown that all three are associated with the ritual ballgame played by the inhabitants, as bas-reliefs and figurines depict them being worn during the Mesoamerican ballgame (Coe 1994, p. 115).

The “yokes” are U-shaped objects carved in stone as replicas, featuring stylized motifs with scrolls and human faces (Figure 2-9). The stone carvings were a representation of the belts used by ball players throughout this region. At the front of this ceremonial belt was fitted the “palma” (palm), an elongated sculpture adapted for this purpose. Palmas are usually effigies of birds like turkeys, or sometimes are depictions of realistic scenes. The “hachas” are also part of the uniform used by the ballplayers, but their function is more enigmatic.

According to Tatiana Proskouriakoff (1954), the scroll patterns included under this style are diverse, having antecedents in the Pre-Classic and extending into the Post-Classic. They are found beyond the borders of Veracruz, and are represented on mediums ranging from monumental architecture to small stone objects and from

ceramics of several typologies to ornamental carved bones. Even with this diversity, the Classic Veracruz style is still referred to by some as the Tajin style, due to the fact that only a later variation of the scroll pattern is found in the relief carvings of El Tajin (as cited in FAMSI by Machado, "Veracruz Mural Traditions: Las Higueras, Mexico," 2003). Thus Classic Veracruz is still considered the style produced at El Tajin.

El Tajin is an archaeological site with more than 150 buildings, and over 17 ballcourts. The site is still under study, and many buildings have not been totally revealed yet. Forty-one buildings on the site are open to the public, and there is also a museum on the site where fragments of buildings, ceramics, and frescoes are on display. El Tajin is located in the modern state of Veracruz, in the ancient town of Papantla de Olearte.

Summary

Chapter 2 begins by introducing the evolution, and occupation of the first settlers in Mesoamerica. They occupied this region by around 10,000 BCE, then in 5,000 BCE, developed agriculture, and started to evolve rapidly as a society. They changed their lives from nomadic to sedentary, built dwellings for refuge, and managed to domesticate animals. Their main agricultural staple became maize.

The archaeological site known as El Tajin, studied in this research, is introduced in this chapter. Mesoamerica once boasted a population of over 50 million people living throughout an area roughly contiguous with the modern nations of Mexico, Guatemala, Honduras, Belize, and El Salvador. Mesoamerica literally means "middle America," and El Tajin is accurately located at the northernmost boundary of Mesoamerica. This fact

makes its architecture and art even more impressive, since these a unique style was developed that later influenced subsequent groups in this region.

Before El Tajin developed and reached its peak as an important center in Mexico, there were places like Teotihuacan, which was known as one of the largest cultures of all times. At its zenith, Teotihuacan reached 100,000 or more inhabitants, with a class structure that was well defined. The Classic Period (250-900 CE) in Mesoamerica marked the development of numerous cultures as evident in the sites of Cholula, Monte Alban, and the foremost Mayan centers such as Tikal and Copan.

The collapse of many of these cultures catapulted the development of cultures derived from the larger ones. El Tajin dateline is placed in the Epi-Classic Period. However there are disputes of chronology among some scholars. Former and concurrent cultures as the Olmecs, and Huastecs are linked to El Tajin growth, and the further development of its architecture. El Tajin was not merely another site in Mesoamerica, but a well-developed culture of great significance along with its large number of ballcourts. El Tajin also developed a unique artistic style known as the Classic Veracruz style. In architecture, the builders of El Tajin were ahead of their generation. The main architectural features in the Veracruz style are the yokes, palmas, and the hachas. These three elements adorned the body of the legendary Mesoamerican ballplayers.



Figure 2-1. Depiction of El Tajin's central area showing truncated pyramids with stucco finished surfaces and North ballcourt at the center of the plaza. Modified photography adapted from an on site sign at El Tajin archaeological site. Photographed by Ileana Olmos.



Figure 2-2. Example of pyramid at El Tajin site following the Mesoamerican building technique. A man-made mound is shaped, and then covered by precisely quarried stones. Photographed by Ileana Olmos.



Figure 2-3. Typical detail of high risers and narrow threads in Mesoamerica also present in El Tajin's architecture. Photographed by Ileana Olmos.



Figure 2-4. Example of Talud y Tablero feature in El Tajin architecture. Photographed by Ileana Olmos.

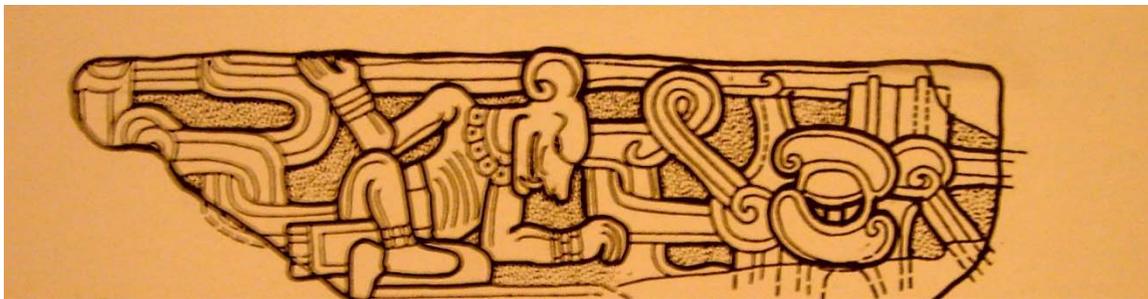
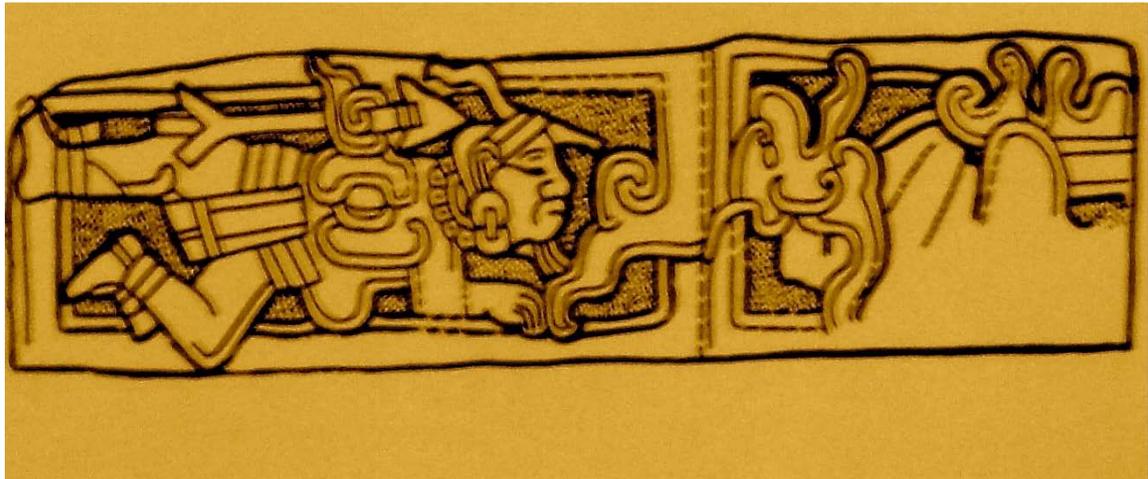


Figure 2-5. Decorative friezes from The Pyramid of the Niches depicting anthropomorphic characters. Museo de Antropología de Xalapa. Photographed by Ileana Olmos.



Figure 2-6. Olmecs figures depicting snarling features. Museo de Antropología de Xalapa. Photographed by Ileana Olmos.



Figure 2-7. Colossal Olmec head, Museo de Antropologia de Xalapa. Photographed by Ileana Olmos.



Figure 2-8. Sculptural stone representing a yoke of the Veracruz style. El Tajin Museum. Photographed by Ileana Olmos.

CHAPTER 3 PROTECTION PLAN FOR MONUMENTS AND ARCHAEOLOGICAL SITES IN MEXICO

Before studying El Tajin as an archaeological site, it is important that one becomes familiar with the concept of archaeology. “The word archaeology comes from the Greek (arkhaiologia, discourse about ancient things), but today it has come to mean the study of the human past through the material traces of it that have survived” (Bahn 1996, p. 2).

Archaeological sites are protected around the globe through federal and local laws as well as private organizations. In the United States, the National Historic Preservation Act of 1966 was the first act of protection to be passed. It was amended in 1970 and 1980. This law called for the establishment of a National Register of Historic Places that would include significant districts, sites, buildings, structures, and objects in American history, architecture, archaeology, and culture (National Park Service, “National Historic preservation Act”, 2009). While federal law is consistently applied across the nation, state and local laws differ from place to place.

As in the United States, in the Republic of Mexico such laws are the cores for the protection of a large number of sites. In Chapter 3, some of the most meaningful statutes are reviewed for the purpose of understanding the Mexican approach to identifying and protecting ancient sites.

The INAH: National Institute of Anthropology and History, Mexico.

The INAH, created in 1939 as part of the federal government, is the National Institute of Anthropology and History in Mexico. This organization regulates and guarantees the research, conservation, protection and propagation of the historical, prehistorical, archaeological, anthropological, and paleontological patrimony of Mexico.

Its creation has had a great impact on the preservation of the Mexican cultural heritage (INAH, “Quienes somos”, 2009).

The INAH carries out its works through an entity known as the “Secretaria Tecnica,” or Technical Secretariat. The Technical Secretariat supervises the performance of its main duties and its tasks are distributed among seven National Coordination offices and thirty-one Regional Centers throughout the states of the Republic of Mexico.

This governmental department is currently responsible for over 110,000 historical monuments built during the sixteenth and nineteenth centuries, and 29,000 archaeological zones registered throughout the country. In the republic of Mexico, INAH has one hundred and fifty archaeological sites open to the public.

The INAH is committed to promoting scientific research and cultural instruction. A large number of scholars in more than a dozen fields, such as archaeology, architecture and heritage conservation, are employed as part of INAH’s commitments to the cultural heritage of Mexico. This institution attempts to bring awareness to the general public through the introduction of new archaeological zones, and their nominations, as well as excavations and the restoration of historical monuments in Mexico.

In its commitment to educate the public, the INAH supervises over one hundred museums across the country. These museums are categorized according to the extension and quality of their collections, geographical locations, and number of visitors (The INAH, “Quienes somos”, 2009). The INAH also promotes field trips, research projects, and the reproduction of archaeological pieces.

Legal Protection of Archaeological and Historical Assets

Since the beginning of the nineteenth century, Mexico has encouraged protection

of its cultural patrimony through federal laws and other legal venues. The first law in 1896 was related to the “Law for Archaeological Excavations”. In 1897, the Law for Archaeological Monuments established for the first time legal protection for the cultural patrimony (Williams Garcia 1967, p. 14).

In 1914, two new protective laws were applied: The Law for the Conservation of History and Monuments, and the Law for Natural Beauties. Finally in 1972, the legislation that is currently in effect was approved. This law is the Federal Law for Monuments, Archaeological Zones, Architectural and Historical Places (CONACULTA El ABC del Patrimonio Cultural y Turismo”, 2009).

The Federal Law of 1972

The Federal Law for the monuments and archaeological zones of Mexico also includes the artistic and historic sites, which is enforced via the INAH. Mexico has a vast quantity of cultural sites and In Latin America alone, Mexico ranks number one, and among the rest of the world, it ranks number six. This assessment is based on the number of declared cultural patrimonies through UNESCO (CONALCUTA, “Coordinacion Nacional para la Cultura y las Artes”, 2009).

Some of the most relevant articles under this law are studied, for the purpose of better understanding the requirements for protection considered by the government when nominating El Tajin as a historical site.

The Federal Law of 1972: Monuments and Archaeological Zones

The current federal Law for Monuments and Archaeological, Artistic and Historic Zones determines what is of public interest, and therefore it is a responsibility of the State to investigate, protect, conserve, restore, and recuperate.

Chapter 1, Article 4 of the Law of 1972 states: The authorities corresponding to the states, territories and municipalities will have on the application of this law, the intervention that this law and its code indicate (INAH 1972, p. 7).

Article 5 states: “archaeological monuments, artistic, historic and monumental zones” are the ones determined explicitly in this law and the ones declared such, of office or by partial petition. The president of the Republic, or in his stead, the Secretary of Public Education, will dispatch or will revoke the corresponding declaratory, which will be published in the “Diario Oficial” (Official journal) of the Confederation (INAH 1972, p. 7).

Article 6 states: The landowners of real estate of declared historic or artistic monuments shall preserve them and in their case; restore them per the terms of the following article, and with prior authorization of the corresponding Institute. The landowners of real estate in proximity to a monument who intend to work in excavation, grounding, demolition or construction that could affect the characteristics of the historic or artistic monuments, should be issued a permit through the corresponding Institute. This permit should be issued once all the requirements are met.

This last article is of great relevance to El Tajin due to the proximity of some families descended from Totonacs, who still reside on the outskirts of the archaeological zone.

Article 7 states: When authorities corresponding to the states, territories and municipalities decide to restore, and preserve the archaeological and historic monuments they shall always do so, with prior permit and approval, and all construction work shall conform to all the safety controls and dispositions established by law.

The INAH can receive contributions of authorized departments, as well as contributions from the private sector, for the purposes appointed by this law.

According to Article 9, the corresponding Institute will provide professional advice in the conservation and restoration of immovable assets or real estate, which is declared a monument.

In Article 10, the laws states that the competent institute will proceed to complete effective conservation work, and restoration of an immovable asset that has been declared a historic or artistic monument, when the proprietor is advised to do so, and fails to fulfill the task.

According to this law, the archaeological monuments are all the movable and immovable assets, product of the prior cultures that preceded the establishment of the Hispanic culture in the national territory, as well as the human remains, and the flora and fauna related to these cultures (Federal Law of 1972, p. 15).

Chapter 2 of the Federal Law states in Article 30: Any type of material work utilized for the research or future investigation of archaeological monuments; should be executed only through the INAH. Scientific institutions or reputable institutions with financial solvency could also do so with prior authorization (Federal Law of 1972, p. 15).

Chapter 4 defines the concept of archaeological monument zones. In Article 39 this is defined as the area that is formed by various immovable archaeological monuments or whose existence is presumed (INAH 1972, p. 19).

Nominating an Archaeological Site in Mexico

After a brief overview of the role of the INAH in Mexico, this section reveals the process, which an archaeological site in Mexico goes through in order to become an “archaeological zone,” and consequently becomes part of INAH’s national patrimony.

Archeologist Sergio Vazquez provided the following information in a consultation conducted by the author of this thesis in the summer of 2009. Prof. Vazquez is a full-time researcher for the Universidad Veracruzana in Xalapa, state of Veracruz, Mexico. He is also a former member of the “El Tajin Project,” which started in 1984 under the direction of Juergen Bruggemann.

When one is introduced to an archaeological complex of the magnitude of El Tajin, it is of great importance to understand how the government of a particular country, in this case Mexico, defines its significance in terms of laws and politics. Mexico is exceptionally rich in cultural heritage, and its nomination process is rigorous.

In Mexican state of Veracruz, which occupies a geographical extension of 72,000 square kilometers, 7,800 archaeological sites have been reported or nominated to the Institute of Anthropology and History. This process could be confirmed with the National Register for Monuments and Archaeological Zones of the INAH. The INAH is the only federal bureau with this legal designation in Mexico. National patrimonies in Mexico are only considered to be so if they follow the criteria of the Federal Law of 1972, which is the law currently in force (Professor and Archeologist S. R. Vasquez, personal correspondence, August 27, 2009).

Of these many sites, which vary from small concentrations of archaeological material to great monumental centers, very few have been “opened” to the public. In other words, just a dozen are considered “archaeological monument zones” or simply “archaeological zones” in the state of Veracruz. Is it up to the INAH to determine if a specific site fits the federal law criterion, so it can be nominated and consequently registered (S.R. Vasquez, personal correspondence, August 27, 2009).

In Veracruz the sites open to the public are: El Tajin, Cuyuxquihui, Las Higueras, Vega de la Peña, El Cuajilote, Quiahuiztlan, Zempoala, Quahtochco, El Zapotal, Tres Zapotes, and San Lorenzo. To this small list, “Castillo de Teayo” could be added, since it includes pre-Columbian buildings from the Post-Classic time period along with colonial structures. Some of these sites are protected under the recent advancements for conservation, but are not aligned with the INAH’s norms for monument zones.

Some of these sites have custodial personnel, and in some instances restoration efforts have been undertaken. For some others, only rights to the land have been granted through their research agreement with the government. However, El Tajin is the only site in the state of Veracruz that is recognized as an archaeological zone through the Executive and Federal Declaratory, a recognition that is realized only through the President of the Republic of Mexico. This process works is outlined in the Federal Law of 1972.

Summary

Chapter 3 explores the protection plan for El Tajin’s archaeological site via the Instituto de Antropología e Historia (INAH). This government bureau oversees, protects, and safeguards all of the archaeological sites in Mexico. The legal protection of the Mexican patrimony is discussed through a federal law enforced since 1972. Before this federal law, the government was in charge of overseeing and undertaking projects, but it was not until 1972 that the INAH took sole charge of the Mexican patrimony.

Mexico is one of the few countries in the world with a large number of international heritage sites, and ranks number one in Latin America. Its government and its people in general are truly proud of this heritage, and they are very involved in the preservation of their patrimony. The INAH has promoted numerous archaeological,

cultural, and more architectural projects on the last fifty years. El Tajin is one of these projects, and this institution is still working towards the future development of this site.

In Chapter 3, the process for nomination of an archaeological site is discussed, for the purpose of observing the Mexican preservation approach.

CHAPTER 4 THE ARCHAEOLOGICAL ZONE OF EL TAJIN

El Tajin, like the majority of other ancient cities in Mesoamerica, was probably established first as a ceremonial center, with a minor but permanent population. After the growth of the cities in Mesoamerica, they became great urban centers with a greatly stratified population that included skilled artisans, merchants, priests, and administrators (Bruggemann 1994, p. 26).

The city of El Tajin acquired the characteristics that we now know almost a century prior to Spaniards occupying Mesoamerica. It is apparent that no conquistador, friar, or early chronicler knew about its existence, however the site continued to sleep under its heavy green mantle of vegetation until the end of the eighteenth century (Wilkerson 1987, p. 13).

El Tajin: Its History

El Tajin was discovered in the eighteenth century, almost by accident, by Diego Ruiz, an officer of the tobacco guard for New Spain. "The rich soils of the Papantla district along the Tecolutla River and its tributaries were fertile land for the coveted crop" (Wilkerson 1987, p. 13). Spain, knowing about the illegal exports of tobacco in this region, formed a squadron to debilitate the unlawful dealings.

Ruiz discovered the most famous building of El Tajin: the Pyramid of the Niches (Figure 4-1). Awareness of this first accidental visit, led to a great influx of European scholars to the site. The official discovery of the archaeological site was published by Diego Ruiz in the "Gazeta de Mexico"(Gazette of Mexico). According to Piña (1999):

Towards the end of March of the present year Sir Diego Ruiz, officer of the Tobacco jurisdiction (Papantla), inspected a forest with the purpose of eliminating tobacco crops, according to his obligations: in a remote site known in the Totonac language as El Tajin, which in our language means

thunder or ray. To the west of this town, about two leagues, alongside a dense forest he found a pyramidal-shaped building.

In this article Ruiz provides a lengthy description of the massive structure known today as the “Pyramid of the Niches.” (p. 7)

Other names associated with work in El Tajin are the celebrated traveler Baron Alexander Von Humboldt, a German architect, and Karl Nebel, who came to examine the region and returned to Europe to publish his drawings in 1836 (Wilkerson 1987, p. 14). In 1835, Karl Nebel became the first explorer to confirm that El Tajin was more than just a single building. He also published a drawing of the Pyramid of The Niches in his book: “Voyage pittoresque” (Bruggeman et al. 1992, p. 4).

The first formal drawings, created in 1891 and 1892, were published in 1907 by Captain P.P Romero and lieutenant F. del Castillo, who were part of an expedition for the Scientific Commission of the Columbian Committee (Bruggeman et al.1992, p. 6). Multiple expeditions and on-site work took place at the beginning of the twentieth century. However, for a long period of time the archaeological zone was buried under dense jungle. In 1924, the importance of El Tajin within the cultural development in Mesoamerica was re-evaluated. In March of 1929, the engineer-topographer Agustin Garcia Vega who was commissioned by the Directorate of Pre-Hispanic Monuments, traveled to El Tajin with the purpose of calculating a budget for the necessary archaeological work required in the zone. However, the lack of financial resources delayed the project for five more years (Bruggemann et al. 1992, p. 6).

Finally In 1935, Agustin Garcia Vega undertook the first formal mapping, clearing and exploration. As Garcia removed the tangled vegetation around the Pyramid of the Niches, he found the unexpected:

I was able to comprehend that it was not, as believed, an isolated building, he explained, rather that it formed part of an extensive and perhaps very interesting zone. He cleared 77 acres and proposed that it be formally called The Archaeological City of El Tajin. (Wilkerson 1987, p. 15)

A great number of expeditions and research took place at the El Tajin site during the following years. This time not only at the Pyramid of The Niches, which became the iconic image for the site, but other excavations began to uncover many structures throughout the site. In 1937, Garcia Vega explored the upper part of a building known as the “Building of the Columns” (Bruggemann et al. 1992, p. 11) (Figure 4-2). The work intensified, and many other areas in El Tajin started to slowly emerge from the dense vegetation that had covered the site for centuries. In the same year, Garcia Vega also worked in the area known as “El Tajin Chico,” or Little Tajin, where two new buildings were discovered (p.11) (Figure 4-3). These buildings will be discussed more in depth in Chapter 6.

The city of El Tajin started to unfold from partial explorations already exposed, and by 1938 the archaeologist Jose Garcia Payon, after an inspection visit, proposed a new project for the site. This project proposed to explore, consolidate, and preserve the facades of the so-far-uncovered buildings. This project officially started in 1939 (Piña and Castillo1999, p.11). Jose Garcia Payon’s legacy extended until the 1960’s with the works of conservation and restoration initiated by Garcia Vega (Cuevas Fernandez et al. 1995, p. 71). The program was enhanced by him especially in the area of El Tajin Chico, which was the elite residential area of the El Tajin site. The new program was not totally completed by Payon. In 1984, The government for the state of Veracruz facilitated the financial support to start the conservation work on the Pyramid of the Niches. This project will be briefly reviewed in Chapter 6.

During its height, around 600-900 CE (Krotser 1973, p. 199) El Tajin occupied at least 5 square kilometers. According to Krotser, El Tajin has been equated to its Maya counterparts as a great ceremonial center. El Tajin was thought of primarily to be a religious center; perhaps a pilgrimage destination.

The reality of El Tajin is that there was also a great legacy of artifacts, and tools that indicated a permanent residing population (Figure 4-4). The engineer Krotser, and his wife archaeologist Paula Krotser, sponsored by The Wenner-Green foundation, lifted a new plane of the zone. This new plane established a chronology based on the ceramic work of El Tajin in those years (Piña and Castillo 1999, p. 12). Likewise, in 1978-1979, The Anthropology Institute of Veracruz commissioned a restoration group to intervene in cleaning, and conservation of the bas-reliefs of some of the ballcourts (p.12).

El Tajin: Location, Orientation and Topography

El Tajin is located in the northern part of the state of Veracruz, in the municipality of Papantla (Figure 4-5). It is 14 km from Papantla and 16 km South of Poza Rica on the federal road feeding towards Maria de la Torre (Cuevas Fernandez et al. 1995, p. 73). El Tajin's period of splendor ran from about 600 to 900 CE and probably involved a population of 25,000, spread over a vast area. Its archaeological zone is now estimated to be at least 2640 acres in extent (Wilkerson 1986, p. 16). "The ancient city of El Tajin sits in the rolling hills of the north-central Gulf lowlands, only 40 miles from the Gulf of Mexico to the east and a slightly greater distance from the foothills of the Sierra Madre to the west" (Koontz 2009, p. 2)(Figure 4-6).

According to Koontz (2009), the center of El Tajin contains all of the major architectural and sculptural programs. It is located among the rolling hills that are typical

of this part of the Veracruz lowlands. There is also a steady decline in elevation from north to south, from 200 to 140 m above sea level.

Two ravines, to the east and west, limit the El Tajin site in the central part; many terraces are identified on the other side, which served for houses and small structures. The central area expands towards the North. From the South, the land extends consistently to the North and divides the city center into various segments. The diverse topography and levels of the site served as retention walls. On the south side, the structures were related to cult ceremonies, “fiestas”, and massive assemblies, including the ball game. The next topographic level is occupied by residential housing and the space is identified as a restricted area. It was probably occupied by state and religious orders. The third level was even more restricted than the prior level. It represented the religious and civil power manifested in the important “Temple of the Columns”, and also the residences of the governing class (Bruggemann J., Horizonte Clasico report 1992) (Figure 4-7).

Mesoamerican Cosmology and Mythology

In a discussion with Dr. Sara Ladron de Guevara, archaeologist and Director of the Museum of Anthropology in Xalapa, Veracruz, we had the opportunity to cover the topic of cosmology in El Tajin. El Tajin “Cosmovision” (which Dr. Ladron refers to) is not only unique to this particular area of Mexico, but is one shared throughout Mesoamerica. In order to understand cosmology in El Tajin, we need to know the language of the iconography in the art and architecture of Mesoamerica as Ladron de Guevara explains:

All the iconography of Mesoamerica has a peculiar perspective. We see this iconography in one dimension, but this representation is really a tri-dimensional one. The universe is a tri-dimensional concept, so therefore the

concept of painting and bas-relief sculpture in Mesoamerica follow this idea. We need to translate the tri-dimensional reality into one comprehensible perspective, in other words, in a two-dimensional one. We sometimes do not know how to read Pre-Hispanic imagery. All of the graphic Mesoamerican documents would correspond to that representation of two planes into a tri-dimensional concept

This explanation is related to Dr. Ladron de Guevara's study of the imagery and the iconography of El Tajin, in particular the one associated with the concept of the universe. In this image on an altar, the interpretation of a three-dimensional scene into a two-dimensional plane, describes the concept of the universe for the people of El Tajin (Figure 4-8).

Ladron de Guevara also explained how this pattern is repetitive throughout Mesoamerica, and not merely unique to El Tajin. Scholars of great significance such as Alfredo Lopez Austin, [a historian specialist in religion of ancient Mesoamerica] corroborates Dr. Ladron de Guevara's concept. When he describes the graphic and conceptual representation of the universe for the Aztecs, the result is of great similarity to the one in El Tajin (S. Ladron de Guevara, personal communication, July 13, 2009). For the Aztecs, the concept of the universe is represented by a square or a rectangle. The universe has four corners, and the sun is placed in the middle. The codices in Mesoamerica also represent this template. El Tajin universe concept repeats this idea related to the Mesoamerican cosmos (S. Ladron de Guevara, July 13, 2009). Ladron de Guevara proposes in two of her numerous publications: "Imagen y Pensamiento en El Tajin" (Imagery and beliefs in El Tajin), and "Hombres y Dioses del Tajin" (Men and Gods of El Tajin) that: (translation mine)

The imagery of the universe, which places the sun at the center, surrounded by the sun of motion, has water in two of the corners, and is contained in a square with four corners the ideal representation of the universe. This ideal is intended to be representing as well in the city of El

Tajin. Then, the urban plane of El Tajin becomes a representation of the cosmos, and the depiction of the altar represents a micro-cosmos. In this altar, several concepts are represented as well. These elements are traditional in the ancestry of Mesoamerica. They are water, air, fire and earth, but there is a fifth element, which is fundamental to the entire Mesoamerican philosophy. This fifth element is known as ollin.

Ollin represents the “motion or movement” concept. It is graphically represented as an interlace or a wrap (S. Ladron de Guevara, personal conversation, July 13, 2009) (Figure 4-9). This depiction of ollin appears on the altar, which is re-interpreted by Ladron de Guevara. This wrap-like representation of ollin was ritually reproduced at the ball games. The reasoning behind this is that the ball game is ollin, as ollin is “hule” (spanish for rubber). The ball is made out of hule, and the name of the game in Nahuatl¹ is “ulama.” Therefore, the ritual of the ball game is a ceremony that reproduces the movement of the stars, and in the plane of El Tajin, the ball games represent exactly that movement, ollin (S. Ladron de Guevara, personal conversation, July 13, 2009).

Cosmology explains and orders the universe, and it gives man a place within it. The cultures that flourished in the area of Mesoamerica shared the concept of the cosmos. When one observes works of neighboring places, or simply recognizes myths of diverse traditions in this area, the coherence of the system that installed the concepts is better understood (Ladron de Guevara 2005, p. 149).

El Tajin does not correspond with direct documentary sources in this matter, however the relationship with Mesoamerica is enough to relate its Cosmovision to other cultures in the region. According to Ladron de Guevara (2005 p. 149), such similarities

¹ Nahuatl: is a group of related languages and dialects of the Nahuan (traditionally called "Aztec") branch of the Uto-Aztecan language family. Collectively an estimated 1.5 million Nahua people, most of who live in Central Mexico, speak them. All Nahuan languages are indigenous to Mesoamerica.

are significant for the re-interpretation of its cosmology, in spite of its geographical seclusion from these cultures.

According to Ladron de Guevara, all of these beliefs and practices, which conformed to the religious stem in Mesoamerica, reaffirmed the idea that deities ruled the cosmos and its order. The purpose of the religious rituals was to maintain the order, and the cycle of the universe. According to this belief, these deities were capable of creating as well as destroying life (Ladron de Guevara 2005, p. 150). The Mesoamerican unit is significant for the re-interpretation of the cosmology of El Tajin. The Nahua and Maya costumes are utilized in El Tajin to better understand it like a cultural group. These sources bring great coherence into the graphic speech known as El Tajin (Ladron de Guevara 2005, p. 149).

Man moves or operates in two dimensions: time, and space. In Mesoamerica, the space consisted of levels divided into three categories: inferior, superior, and median. This concept coincides with ideas present around the world at the time. In Mesoamerica, the first two levels are inhabited by immortal beings, deities, and by human beings who are dead or unborn. Man lives only in the middle levels, where deities and non-human beings could also reside.

The levels where man lives are also divided into five directions: four are in a horizontal plane, and the fifth is vertical, and crosses by the intersection point of the four horizontal ones (Ladron de Guevara 2005, p. 150). On these planes, levels, and directions, a significant coordinate brings order to the cosmos: time. Time is cyclical, and rules destinies. It is also measurable by the cycle of the stars, and at risk if men do not perform the rituals that allow it to be reproduced.

As part of the iconographic corpus of El Tajin, Ladron de Guevara (2005) claimed to have found evidence of this cosmic system. She also found evidence of the rituals meant to keep the cosmologic order in place. There are two iconographic pieces that clearly demonstrate evidence for the ordering the universe: an altar, and a “tablero” (panel).

The altar is a unique piece where a ceremonial scene is depicted. Besides the ceremonial atmosphere of the altar, the two-dimensional graphic representation shows a series of symbolic elements that reproduce specific ideas. These ideas are related to the notion of the creators of the cosmos, and the order of the elements that conform the world. Ladron de Guevara (2005) confirms this interpretation of the altar, and the affinity of ideas held by the inhabitants of El Tajin with ideas of the cosmos held by other contemporary cultures of Mesoamerica.

This altar contains the imagery mentioned at the beginning of the cosmology discussion in this study. Ladron de Guevara (2005) also gave credit to Jose Garcia Payon for the discovery of this work of art called altar. This altar is in the shape of a parallelepiped.² This sandstone piece is fragmented into two parts. Four of its facets are worked in bas-relief: the superior, the upper, and the laterals. At the center, a circular plane intersects it. Currently, this is the only known piece in El Tajin with these characteristics. The rest of the relief sculpture is found on boards, friezes and columns (Ladron de Guevara 2005, p. 151).

In Mesoamerica as stated, the rectangle is iconographically compared to the terrestrial plane. The superior facet in this altar is rectangular, and it corresponds to

² A parallelepiped is a polyhedron of six sides

planet earth's surface. The surface of the earth is also symbolized in the interior of the relief by a turtle sculpted on the inferior center part. An altar is erected over the depiction of the turtle. This altar, or throne, is similar to the ones utilized by the hierarchical figures in El Tajin. These thrones could be observed in sculptural representations throughout El Tajin (Ladron de Guevara 2005, p. 152). In this case, over the altar, the sun is represented as the axis of the cosmos, center of the world. This is represented by an opening or fissure, which is surrounded by a group of sixteen "sun-like petals" (Ladron de Guevara 2005, p. 152).

In Mesoamerica, as stated previously, cosmology was a unified concept. The Mesoamerican notion of universe determined how the cities needed to be arranged, and in El Tajin it also determined how and where buildings would be erected. This concept is studied more in depth in Chapter 6 with the conception of the Pyramid of the Niches.

The iconographic narrative related to natural events, plants, or animals constitute one of the greatest legacies of El Tajin culture. Scholars are constantly discovering new links that help interpret the life of this ancient people. Many symbols in El Tajin iconography are closely related to myths related to even older groups in the area. Ladron de Guevara, in her study of the cosmology of El Tajin reviews the significance of such symbols.

A second monolithic piece, which Ladron de Guevara studies as part of the interpretation of the cosmology in El Tajin, is known as "El tablero del arbol" (The Tree Panel, [translation mine]). M. E Kampen named this piece first in his book "The Sculptures of Veracruz" (as cited in Ladron de Guevara 2005, p. 156). The original piece is part of the permanent display in The Museum of Anthropology in Xalapa,

Veracruz Mexico (See Figure 4-9). This monolithic work was believed to be part of the Pyramid of the Niches. It is a bas-relief worked in sandstone with dimensions of 1.30 x 1.24 meters. This discovery is attributed to Palacios and Meyer; it became national news in 1931, and continued to be studied by a number of scholars (Ladron de Guevara 2005, p. 157).

According to some sources, it is very possible that this important piece was not part of the Pyramid of the Niches; nevertheless the description of it will serve to validate some cosmogonic ideas of the inhabitants of El Tajin. Some of these ideas were shared with the rest of Mesoamerica (Ladron de Guevara 2005, p. 158). Bands of volutes frame this piece of art from right and left, and a symbol of a deity. The inferior part of the deity also appears with volutes as eyes appear feathered. In the center, a sturdy tree is depicted growing outward in a pyramidal shape. In its interior, a human face and a zoomorphic being are also shown.

Not only in Mesoamerica, but also in diverse cultures throughout the world, the tree appears as the center of the world, as an axis mundi.

The tree serves as a connection between the underworld, where the tree buries its roots, and its upper levels, which are penetrated by its branches. Passing through are the levels inhabited by men, which are penetrated by its trunk. Here, the tree on this panel, axis mundi, penetrates the pyramid to the deepest part. It also penetrates the space where the characters are depicted, and touches with its cup the highest level of the frame. (Ladron de Guevara 2005, p. 159 [translation mine])

In El Tajin, many varieties of plant representations are depicted on stone panels, and on columns. It is interesting to notice that the tree is represented as growing out of

a skeleton. There is also a depiction of a maguey plant³, which burst out of a liquid extracted from a penis of a man (Ladron de Guevara 2005, p. 159).

According to Ladron de Guevara (2005), both images signified the emergence of life as a result of an offering, which could very well proceed from a sacrificed individual. The stepped pyramidal structure from which the tree emerges represents the earth. In its interior, a figure known as “Cipactli” is depicted. In the Nahuatl tradition it is a tectonic monster. This monster appears with the jaws open, as if waiting for offerings from creatures of the upper levels.

According to Barba, a Mayan scholar, if Maya mythology is taken into consideration here, specifically the “Popol Vuh”,⁴ this depiction could be identified as Zipacna; the myth is related to a tree and a great mount that covers it. In this case, this would represent the pyramid (as cited in Ladron de Guevara 2005, p. 160).

The Myth of Zipacna

According to the Popol Vuh, Zipacna was bathing in a river when 400 young men passed by the stars carrying a giant trunk to put over the roof of their house. Zipacna helped them by carrying the trunk alone. Afraid of the strength of Zipacna, the young men excavated a hole, while asking him to continue the excavation for them. When Zipacna went down in the ground they threw the tree on top to bury him. Zipacna protected himself by moving to the side, and he survived the attack. Later that day, Zipacna took revenge on the young men. They were drunk, and Zipacna killed them all

³ Maguey is an agave originally from Mexico but cultivated worldwide as an ornamental plant

⁴ A corpus of mythological narratives and regional genealogies of the Post-Classic Quiché kingdom in Guatemala highlands.

by burying them with the roof they had built with the original tree. This incident caused Xbalanque and Hunahpu, twin brothers and heroes of the Popol Vuh, decide to kill Zipacna. The twins fooled him by telling him that there was a giant crab in the depths of a gorge. Zipacna loved to eat crabs, so he tried to get into the gorge that the twins had built. Then the great hill moved to crush him. In time, the hill was transformed into a stone, the one that according to tradition, made the mountains (as cited in Ladron de Guevara, 2005 p. 161).

The Mesoamerican cosmology recognized that various levels formed the universe. The lower levels were nine, and the upper numbered thirteen. Ladron de Guevara (2005), citing Lopez Austin, adds that human beings inhabited four of the thirteen superior levels (p.161).

Cipactli

El Tajin religious views were associated mostly with the natural, especially those of the local environment. First was the notion that “mother earth” was a giant monster, part serpent, part alligator, and part fish. This monster, Cipactli, apparently floated on the water. This explains the reason it was represented in monolithic altars with a large superior jaw filled with three sections of teeth and a “beefy” tongue (Piña and Castillo 1999, p. 107). The earth was the dwelling of the dead and the sun; it was the place where the sun would live and die. For this reason, Cipactli was depicted on monolithic altars with a youthful face (“sol del amanecer,” or “rising sun”) or an old face (“sol del atardecer”, or “sunset sun”).

Venus

In El Tajin there were not many sculptural representations of Venus, but there were large carved blocks that depicted a younger face coming out of the jaws of a

monster of the earth. The face coming out of the jaws was always placed with his body extended to the right when looking frontally. This interpretation is related to the appearance of Venus from the east in other words the “morning star”.

Wind God

During the second period of development of El Tajin, “volutes and interlaced scrolls” were introduced in the sculpture. The scrolls symbolized wind. The Wind at El Tajin is related to Venus, and at the same time Venus is associated with Quetzalcoatl (Piña and Castillo 1999, p. 108).

Quetzalcoatl

This feathered serpent is another deity associated with Venus at El Tajin. This deity is represented innumerable times in the site through the motif of the stepped fret (Figure 4-10). This recurring motif at El Tajin was repeated on a grand scale as the ground plan, in the monumental wall in El Tajin is known as “La Gran Xicalcolihqui” (Ladron de Guevara 2005, p. 152) (Figure 4-11). Ladron de Guevara also stated (“Imagen y Pensamiento en El Tajin” or Imagery and Thoughts in El Tajin, 2005) that if the calculations of Ezequiel Jaime Santos (who participated on the archaeological consolidation of this wall in El Tajin Project) are correct, “there were a total of 260 niches in this wall.” This is a clear allusion to the Mesoamerican ritual or sacred calendar.

The cult of Venus was born out of continuous observation of the planet. This observation allowed the calculation of its synodic cycle of 584 days. In other words, the star of Venus appears in the east for 236 days and disappears for 90 days. It appears again in the west for 250 days, and disappears for eight days (Piña and Castillo 1999, p. 108). Due to its appearance in the east as well as in the West, it was considered a dual

or twin star. For these reasons it was named the morning star and also the evening star. Its name varied according to the group, who observed the occurrence.

In Teotihuacan it was known as Tecuciztecatl and Nanahuatzin; in Xochicalco it was known as Tlahuizcalpantechtli and Xolotl respectively. In a large group of frieze fragments found at El Tajin, the complexity of the religious ideas related to this planet are elaborated as the deity of Venus-Quetzalcoatl (Piña and Castillo 1999, p. 109). The evidence of Quetzalcoatl at the site of El Tajin marks a unique perspective that is related to the positioning of buildings throughout the complex. This concept will be discussed more in depth in Chapter 6.

Climate and Environmental Conditions

The climatic conditions of the city of El Tajin played a significant role in the development of the urban site. The climate allowed for two major annual cycles of agriculture as well as the emergences of festivities, training for ball games, and the exchange of products with diverse cultural groups. All of these activities helped increased the population of this important site in Mesoamerica (Piña and Castillo 1999, p. 85).

Rainfall

According to Piña, the regional climate of El Tajin is tropical Senegalese, with rainfall all year round, and its annual precipitation is 1000 millimeters. The temperature varies from 9 to 40 degrees Celsius, and the annual average is to 25 C. The vegetation of El Tajin is tropical jungle; the climate is hot and humid. In its topography, natural terraces form an interesting landscape (Figure 4-12). Rainfall is abundant during the summer, at the beginning of autumn, and in winter due to the influence of the north winds (Piña and Castillo 1999, p. 16). The Pre-Columbian city of El Tajin, often referred

to as the home of the thunder god has been subject to frequent thunderstorms and cyclones, a factor, which made it a sacred city in ancient times (Figure 4-13). Cyclones and hurricanes produced destructive winds and rainfall, which benefited the agriculture in this region, especially by contributing to the winter rainfall.

Drought

At El Tajin, a ritual that is still practiced is related to the drought of the 13th century, but may have more ancient roots; this ritual is the “Los Voladores” (Figure 4-14). It signifies a plea to the gods for rain. Four “fliers” climb one by one to the top of a pole. Each winds a rope around the shaft, and then ties it to their waist (Figure 4-15). At a signal, the four men fall backwards and begin to soar gracefully around the pole, gradually descending to the ground. Each volador makes thirteen revolutions, for a total of fifty-two, the number of weeks in the year. It is a mesmerizing sight, at once uplifting and terrifying, especially when one contemplates the fifth volador, the “Caporal”, who dances indifferently on top of the pole, 100 feet in the air, playing the flute and drum for this celestial dance (Wilkerson 1987, p. 75).

Today, at El Tajin, the ancient ritual of the voladores has become more than a sacred ceremony. It is an attraction for local and international visitors. "The flying men of Papantla" perform every hour in a designated central area at El Tajin near the museum of the site (Figure 4-16). In the city of Papantla, this ritual is also performed on the premises of the cathedral of the small town, as observed by the author of this thesis (Figure 4-17). In the Pre-Hispanic town of Papantla, there is also a monument that was erected in honor of the voladores of the region in recent years (visited in summer 2009) (Figure 4-18).

Geology

The zone of El Tajin consists of calcareous sandstones, sands and clay of a maritime nature. Indicative of this condition is the abundant amount of shellfish fossils found in the area. Oligocene formation dates back 25 million years. The soil is hard, and of the residual type. This region is one of the most ancient of the country, and from it hydrocarbons (oil) are extracted (Ladron de Guevara 2005, p. 26). The lower flats are swampy due to the presence of a stratum of impermeable clay less than a meter below ground level, and also to the almost total lack of slope in the plazas and ball courts between the mounds. Furthermore on the slopes of the surrounding hills, overlooking the ceremonial center, there is a series of ancient marine terraces (Krotser, 1973). On the other hand, climatic conditions allow livestock breeding throughout the vicinity.

The most significant crops during the years of 1947 and 1948 were: corn, sugarcane, and vanilla. During the decade of the '70s, production of vanilla suffered due to climatic factors, substitutes of industrial origin, and to the surge of outside markets (Bruggemann et al. 1992, p. 42).

Acid Rain

In January 2007, the National Geographic Magazine News published an article about the devastation of acid rain on ancient Mexican carvings. This article was referring to the site of El Tajin (Lovgren 2007, National Geographic News). An air pollution specialist from the University of Mexico (Center for Atmospheric Sciences), Humberto Bravo, affirmed the following to the prestigious magazine:

El Tajin, located on Mexico's Gulf coast, is famous for its temple pyramids and intricately carved reliefs, but acidic air pollutants pumped out by oil-drilling platforms and power stations along the coast are slowly eroding these carvings the deterioration is alarming ... and could cause irreparable

damage to monuments that are an important part of our cultural heritage.
(National Geographic News, Jan 2007)

This seems to be a problem throughout the Veracruz region, but is more prevalent at the site of El Tajin. According to Ladron de Guevara (2005), the rainfall and the contamination provoked by acid rain are factors that allow the growth of microorganisms to cover the pyramidal structures. The dense vegetation also constitutes a great opponent to the conservation of the ancient buildings (Ladron de Guevara 2005, p. 27).

What is Acid Rain?

Acid rain is a result of the atmosphere's natural cleansing mechanism. Acid-forming chemicals are emitted into the atmosphere by vehicles and industry, and also by natural processes such as volcanic eruptions and spray from ocean waves. The chemicals remain in the atmosphere for several days, where they are carried by the winds, heated by the sun, and changed into acids by chemical reactions. Eventually rain, snow and fog remove the acids from the sky, cleaning the air but delivering harmful pollutants to the earth's surface (Kahl J, 2004).

Acid rain is not a phenomenon unique to the Gulf of Mexico, but it is definitely a problem that has affected the El Tajin archeological site for quite some time. A group of scientists from the University of Mexico, Center for Atmospheric Sciences, formed by Humberto Bravo, Head of the Environmental Pollution Section, Dr. Anna Luisa Alarcon, Dr. Rodolfo Sosa Echeverria, Dr. Soto Ayala, and technician Pablo Sanchez, have been studying the effects of acid rain, hoping to make the public and government conscious of this serious problem.

Summary

In Chapter 4, the history of the archaeological site of El Tajin is reviewed, and concepts such as cosmology and mythology are discussed for the purpose of better understanding its unique Mesoamerican culture.

The historical and religious background of Mesoamerica as a whole is of great significance when studying El Tajin. These two elements are vital to understanding not only its culture, but also and most importantly its urban setting.

In Mesoamerica, as in many other ancient cultures, the stars and planets played an important role in every day life. El Tajin is no exception, and cosmology is reflected in everything it did as a cultural group along the Gulf coast of Mexico. Understanding the relevance of these elements contributes to a better appreciation of the architecture, and challenges one's judgment when analyzing the Mesoamerican surroundings.

The climate of El Tajin, and other environmental conditions such as acid rain, is discussed for the purpose of understanding the impact of the natural elements on the archeological site



Figure 4-1. Pyramid of the Niches, El Tajin. Photographed by Ileana Olmos.

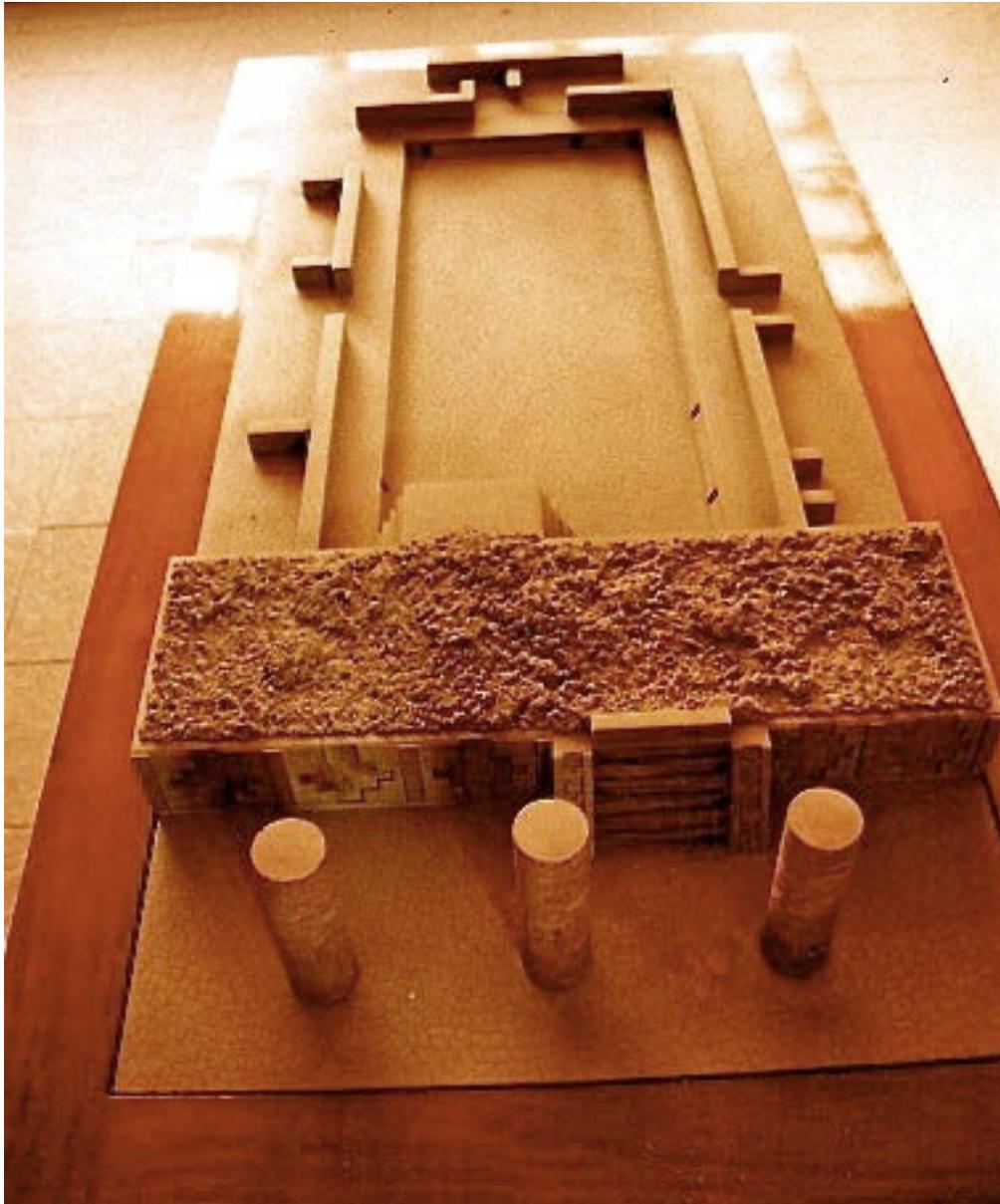


Figure 4-2. Model of the entrance to the Structure of the Columns as seen from Tajin Chico. Museo de Antropología de Xalapa. Photographed by Ileana Olmos.



Figure 4-3. Building C south view, El Tajin Chico. Photographed by Ileana Olmos.



Figure 4-4. Rudimentary tools, El Tajin Museum. Photographed by Ileana Olmos.

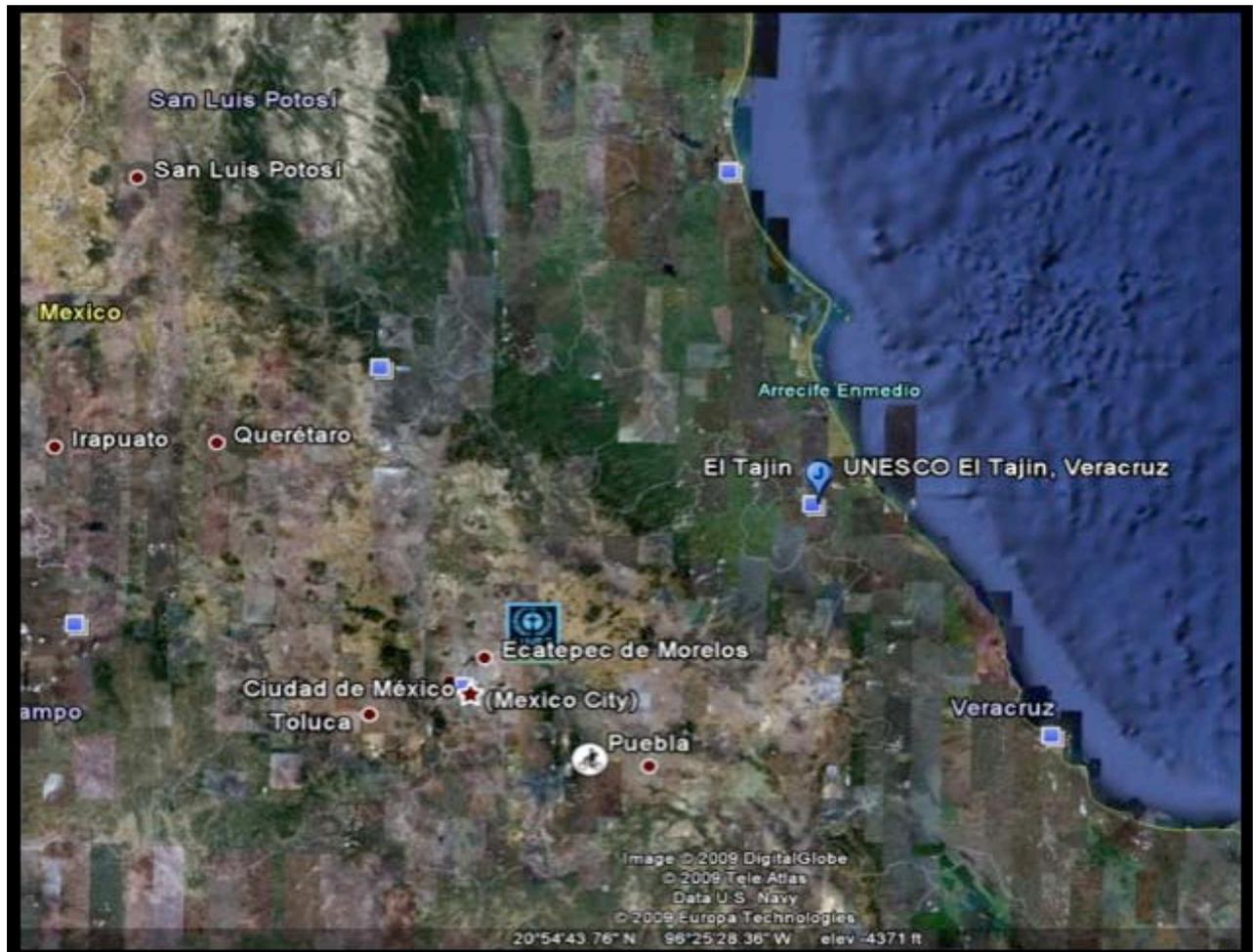


Figure 4-5. Aerial map of El Tajin Archeological site. Google Earth, accessed June 6th, 2009.

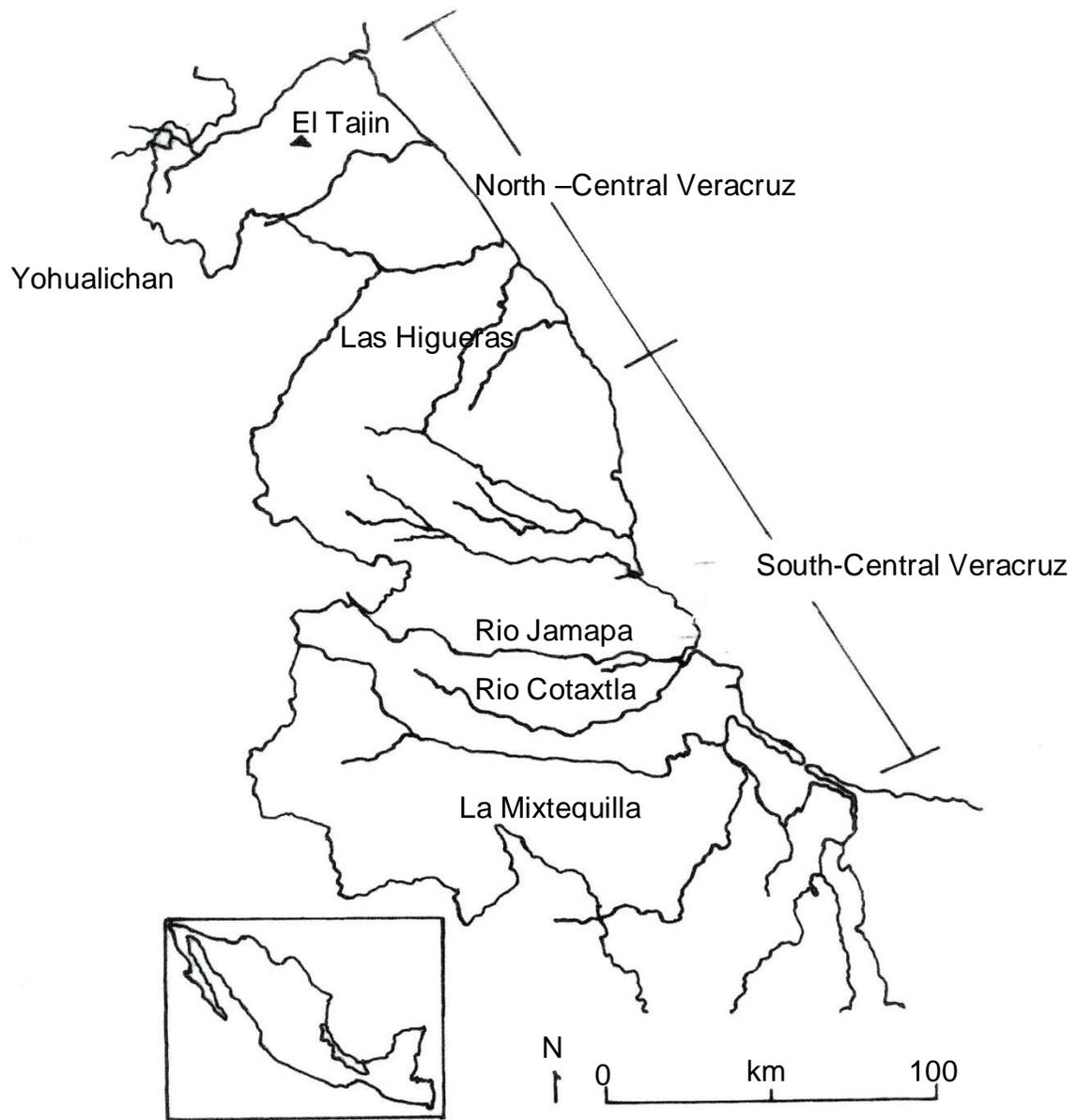


Figure 4-6. Map of the Gulf Coast showing El Tajin's location adapted from Koontz 2009, p.3. Insert on lower left shows Mesoamerica with state of Veracruz outlined. Drawing by Ileana Olmos.

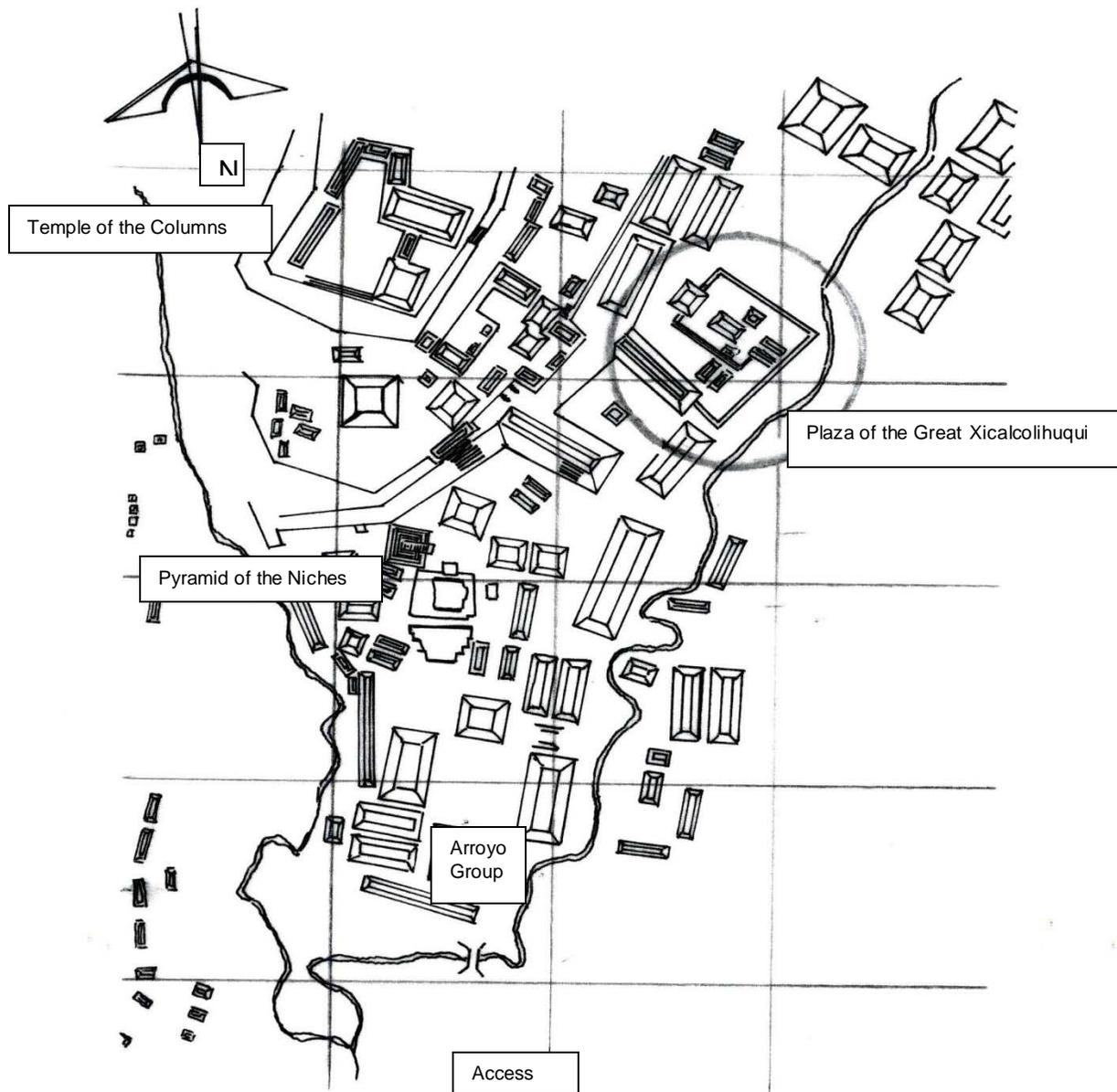


Figure 4-7. El Tajin's archaeological site location map adapted from Fernandez, H. et al. 1995, p. 19. Drawing by Ileana Olmos.



Figure 4-8. Fragmented altar panel finding of J. Garcia Payon, cited in Ladron de Guevara 2005, p.151. Museo de Antropologia de Xalapa. Photographed by Ileana Olmos.



Figure 4-9. Ollin symbol on South ballcourt wall. Photographed by Ileana Olmos.



Figure 4-10. El Tajin's stepped-fret motif depicted throughout the site's architecture.
Photographed by Ileana Olmos.



Figure 4-11. The Great Xicalcolihqui wall, El Tajin. A great scale of the stepped-fret motif also related to Quetzalcoatl the feathered serpent. Photographed by Ileana Olmos.



Figure 4-12. El Tajin's natural terrace, El Tajin Chico area. Photographed by Ileana Olmos.



A



B

Figure 4-13. Stelae of El Tajin deity. A) Building 5 looking west. B) El Tajin stelae located at the center of building 5. Photographed by Ileana Olmos.



Figure 4-14. The “voladores” or flying men at El Tajin site. Photographed by Ileana Olmos.



Figure 4-15. Voladores on top of sacred pole. Photographed by Ileana Olmos.



Figure 4-16. Voladores getting ready to perform the ritual dance. Photographed by Ileana Olmos.



Figure 4-17. Voladores of Papantla performing at the town Cathedral. Photographed by Ileana Olmos.



Figure 4-18. El “volador” statue in Papantla overlooking the city. Photographed by Ileana Olmos.

CHAPTER 5 ARCHITECTURAL INFLUENCES

The El Tajin culture is traditionally known as one of the central cultures of the State of Veracruz. It developed in the north-central part of Veracruz, and its architectural characteristics, although unique to this region, are the result of diverse cultural exchange. In this chapter, the main architectural features of these significant groups are briefly reviewed in order to analyze their influence on the architecture of El Tajin. These Gulf Coastal groups are: Olmecs, Huastecs, Teotihuacan, and Totonacs. The Maya influence is also reviewed to establish the relationship with the site of El Tajin.

El Tajin: The Debate of the First Builders

The first written account of El Tajin as an urban center takes us back to 1785 when the tobacco inspector Ruiz, who discovered the structure the local Totonacs called “Tajin” meaning lightning or thunder. Since this first finding, numerous studies have been undertaken at this rich archaeological site. Yet many key questions related to understanding the history of the first builders remains unknown (Koontz, Reese & Headrick 2001, p. 232).

The builders of the city, once thought to be the ancestors of the Totonacs who now inhabit the area, are believed by most scholars to have been the Huastecs who inhabit a large area of eastern Mesoamerica that includes northern Veracruz. The chronology is still debated (Koontz, Reese & Headrick 2001, p. 232).

According to Koontz, in the literature of the chronology of the city of El Tajin there are two contrasting timelines. Each presents a radically different view of the history of the city. Scholars Jose Garcia Payon, Jeffrey Wilkerson, and Paula and Ramon Krotser have concluded that the city began as a village in the first century CE, and flourished

until the twelfth century. On the other hand, Juergen Bruggemann and members of his team, who conducted excavations and ceramic studies from 1983 to 1992, proposed that the rise and fall of the culture occurred within a period of only three hundred years. This last proposal points the years to be between 850-1150 CE (Koontz et al. 2001, p. 232).

Koontz adds that even when presenting different views of the development of the city, and therefore possible interactions with Mesoamerican cultures, both timelines do agree that the major El Tajin building phase occurred during the Terminal Classic and early Post-Classic Periods.

The Olmecs: Occupation and Legacy

The most ancient civilization in Mexico is the one known as “Olmeca” (Olmec). When interpreting the early phases of archaeology of the Gulf Coast cultures, the Olmec civilization is chronologically the first to be linked to the culture of El Tajin (Kelly and Angel 1952, p.15). According to Covarrubias, the connection to the latter and the so called “Totonac style” is distant, but tangible. Caso also goes so far as to say that the great culture of La Venta-Olmeca is the mother of other cultures such as: the Maya, the Teotihuacan, The Zapotec, El Tajin and others (as cited in Kelly and Angel, p.15).

The origins of the monumental architecture in Mesoamerica can be traced back to a period called, Pre-Classic along, with the great Olmec centers of San Lorenzo and La Venta. The characteristics of these two centers not only influenced the latter’s architectural features, but also the urban pattern settings in Mesoamerica (Gendrop 1984, p. 5). Due to the absence of stones in this swampy area, the architecture consisted of simple earthen platforms and mounds of compacted dirt or adobe.

These delimitations were generally treated with “talud”,¹ an intuitive solution adapted to the natural sliding angle of the soil (Figure 5-1) . Some of these mounds reached considerable dimensions, and pyramids are prevalent in this area. These pyramids were formed of various stepped bodies, a shape that would be part of an extended and fruitful history in Mesoamerica (Gendrop, p.5).

The Huastecs: Occupation Time

As stated earlier in this study, the time of El Tajin has been established through numerous archaeological-ceramic studies, and carbon dating investigations. Some of the most important works in these dating processes are the: Du Solier in the 1930s-1940s, Paula Krotser in the 1970s , Garcia Payon in the 1960s, and S. Jeffrey Wilkerson in the 1970s, 1990s and early 2000s. The result of many of these investigations link the Huastecs to the Maya, and consequently to the people of El Tajin.

Using ceramic evidence instead of colonial records, Wilkerson constructed an important argument for El Tajin as a Huastec site. He noted, Solier did before him, that several very early (1000-300 BCE) ceramic styles and figurine types are shared between the Tajin region and the area immediately to the North. This northern Gulf region has long been associated with the Huastec Maya, and it was hypothesized that these northern ties indicated a deep division of Huastec culture in the region of El Tajin. Recent archaeological finds in the Nautla river valley, just to the south of El Tajin have significantly changed this view of early Tajin affiliations. It is now clear that by circa 300 BCE, a culture separate from that to the north had developed in the Tajin region and Nautla Valley. By time of the El Tajin’s Epi-Classic apogee, the Huastec area to the

¹ A Mesoamerican architectural style. It consists of a platform structure, or the tablero, on top of an inward-sloping surface or panel, the talud.

north was a distinct ceramic sphere. Thus neither the Huastec nor the Totonac have definitive claims to the culture of El Tajin. (as cited in Koontz 2009, p. 9).

In El Tajin, very few researchers have studied the ceramics in a systematic way. The study of ceramics to establish chronology has been somewhat effective; however, discrepancies about timing and cultural linkages are still a debatable topic in current archaeology.

Wilfrido Du Solier was the first to study ceramics through stratigraphic wells. The objective of this study was to clarify the origin of a particular site, based on the ceramic obtained in excavations conducted at diverse points in the archaeological zone.

Du Solier essentially identified and described seventeen different types produced at the site. Through these findings he detected the influence of other cultural groups like the so called: *ceramica negra* (black ceramic). This type of ceramic could also be located in Teotihuacan, in the center of Mexico. Another example was examination of figurines similar to the ones in El Tajin found in the Huastec area, to the north of the state.

According to his ceramic studies, Du Solier proposed three stages of the stylistic influence. The first was the stage where central Mexico was most influential. In the second stage, the influence of Teotihuacan could be perceived. However the greater influence is towards the Huastec region. By the time the third stage was identified, the prior influences had disappeared, and local ceramics began to evolve. The ceramics in this third stage were unquestionably of El Tajin style (Ladron de Guevara, *Antropologia e Historia de Veracruz*, p. 186).

The engineer Roman Krotser and the archaeologist Paula Krotser conducted fieldwork in El Tajin from the beginning of 1969 to March of 1970. In this period, a topographic layout of the area was executed. The area encompassed 1km² of the central part of the site. After a series of studies, Paula Krotser concluded stating that the peak of El Tajin culture was in the Late Classic Period (600-900 CE). Krotser also believed that occupation of the site was continuous from the Middle Classic to the Early Post-Classic Period. The Totonacs of El Tajin, according to P. Krotser, displayed ceramic features identical to those from the center of Veracruz, the Maya area, the Central High Plain and the Huastec area. El Tajin produced ceramics that became completely Huastec in quality (as cited in Ladron de Guevara, *Antropologia e Historia en Veracruz*, p. 186).

The Teotihuacan Culture: Architectural Characteristics

Teotihuacan is one of the greatest classic centers in ancient Mesoamerica, architecturally, artistically and in terms of the sheer size of the city itself and some of the buildings in it. The influence of this great city is found widely in Mexico and Central America. Much of the relative chronology for the Classic in Mesoamerica rests on cross-ties between Teotihuacan and various parts of Mesoamerica, especially in pottery and in architecture (Millon R. 1960, p. 1).

Teotihuacan was located in a northeastern branch of the Basin of Mexico some forty kilometers from the heart of Mexico City (Gamio 1922, R. Millon 1973). Unlike some other lost cities of the New World, Teotihuacan was never completely forgotten from the time of its abandonment. However, with the occupation of the Mexican-Aztecs by the 1400's its original name was lost (Kowalski J., 1999, p. 78). The Mexican-Aztecs, who marveled at the size of the Pyramids of the Sun and the Moon and at the

organization and length of the Miccaotli, or Street of the Dead, renamed it Teotihuacan, which means “the place of the gods”. (Kowalski 1999, p. 78) .

In its zenith the population reached over 125,000 inhabitants and dominated all of the area’s territory. The place was considered a holy ground where the gods met to create the world (Litvak 1985, p. 39). The influence of Teotihuacan and probable control was apparent even in remote points from the capital. Some of these areas were the Gulf Coast, (where the El Tajin culture is based),² Oaxaca, and even the Maya region (Coe, 1994, p. 105). The architecture of El Tajin, as previously stated, is defined by elements that are solely part of El Tajin culture. However some of the same elements which make El Tajin’s architecture unique are variations that reveal the influence of Teotihuacan. The Teotihuacan legacy is evident in all the centers that emerged proceeding its collapse. This legacy is revealed in the urban planning, architecture, painting, and sculpture (Ladron de Guevara, Ciencia y el Hombre, 2006).

The Classic Teotihuacan architecture is based on a few simple principles. One of these principles shared with the culture of El Tajin is that known as “talud y tablero”. This typical architectural motif is defined as a rectangular panel with inset, placed over a sloping wall (Coe 1994, p. 95). This classic model was greatly utilized by Teotihuacan and spread widely to numerous cultures in the region, becoming a universal motif in Mesoamerica (Gendrop 1984, p. 20).

Another architectural-sculptural feature utilized in the structures of El Tajin, and probably a variation from the Teotihuacan culture is the “scroll” pattern. The scroll pattern, better known in El Tajin culture as the “greca escalonada”, is a representation of

² Emphasis mine

a diety which Teotihuacan shared with El Tajin. The only difference is that in El Tajin the greca became an iconic style unique solely to this architecture. This deity is also known in Mesoamerica as Venus. The cult of Venus dominated the culture of El Tajin, and as a result Quetzalcoatl, the embodiment of Venus, was revered in multiple forms (Piña and Castillo, 1999, p. 114). Quetzalcoatl, represented in El Tajin as the greca escalonada or Venus, is the feathered serpent in Teotihuacan (Figure 5-2) .

In the myth of the feathered serpents, the serpents represent the concept the twins (two interlaced serpents). Quetzalcoatl becomes the sun, or represents the solar god which arises and dies in the same cardinal points as Venus does. It is significant to note that in Teotihuacan, Quetzalcoatl is transformed into the fifth sun (Piña and Castillo, 1999).

But around the time of occupation and construction of El Tajin, several other urban centers in Mesoamerica were developing simultaneously. Teotihuacan had fallen, and its population had been diminishing since about the year 650 CE. The collapse of Teotihuacan allowed for the development of other cities throughout the Mesoamerican territory (Ladron de Guevara, Ciencia y el Hombre, 2006). Its political and economic decline, allowed these later cities to become urban centers. El Tajin, in the Gulf Coast of Mexico became one of the most significant centers (Ladron de Guevara, 2006).

The Totonacs

The architecture of El Tajin gained recognition as a unique style that belongs only to this culture. According to Marquina and Gendrop (1979) who studied and described this architectural zone, El Tajin is recognized as an example of a unique tradition in this entire region (as cited in Ladron de Guevara 1999, p. 21).

El Tajin was not only an urban center of great importance; it was also celebrated for its architectural characteristics, and its sculptural artwork pieces.

The indigenous population belonged to the Totonaca ethnic group. Medellin Zenil, a Mexican archaeologist and researcher for The INAH, established the limits of Totonacapan for his studies on the Late Horizon Classic Period in this region. Totonacapan was limited to the north by the Cazonas River; and to the south by the Papaloapan River (excluding Cosamaloapan). To the West it included Acatlan de Perez Figueroa, Oaxaca, and east was part of the state of Puebla, from the immediacies of Tehuacan passing by Chalchicomula, expanding over the mountain range to Zacatlan, and possibly nearby to Metlaloyuca, bordering in this manner with the Southern Huastec (as cited in Ladron de Guevara, 1999 p. 22).

When referring to the significance of the El Tajin style Octavio Paz, states that:

The Totonacs reveal a vitality less tense and more adventurous than any other Mesoamerican culture. El Tajin architecture is not precisely like Teotihuacan. Teotihuacan presents a petrified movement in its architecture, and represents a pause in time. El Tajin, to the contrary, reflects a dancing geometry, undulation, and rhythm. (as cited in Gendrop, Cuadernos de Arquitectura Mesoamericana 1984, and p. 23)

The Maya Influence

El Tajin was in some ways linked to the destiny of the lowland Maya, and the collapse of the Mayan civilization around 900 may have been reflected in the rise of the Veracruz centre. But in addition, there was a great deal of pottery and figurines that were fashioned with a strong Mayan influence. In fact, much of southern Veracruz at that time was a cultural extension of the lowland Mayan culture.

In the area of El Tajin known as "El Tajin Chico" or Little Tajin, the character of the structures is clearly residential. Buildings of religious character are also present, but

in a building known as “Building A”, its internal hallways are indicative of a permanent habitat. This building presents a unique feature used only by the Mayan people; the Maya Arch or Corbel Arch (Bruggemann, Proyecto Tajin, 1989) (Figure 5-3). This feature will be discussed more in depth in Chapter 6.

According to Proskouriakoff (1971), [American Mayanist, scholar and archeologist], the classic style of Veracruz is similar to that of the Maya lowlands. They are both primarily graphic and their development is related to the evolution of “volute and grotesque figures”. These two elements contrast with the representation of the human figure, which is depicted with great naturalism. Both styles show preoccupation with beauty, forms and the use of ornaments (as cited in Ladron de Guevara, 1999 p.30).

Summary

In Chapter 5, the architectural influences of El Tajin are reviewed for the purpose of better appreciating the later evolution of these influences into its architecture. The first group studied was the ancient Olmecs. They developed a rich artistic and cultural legacy, which influenced El Tajin in later generations. The Olmecs were known for production of monumental sculptures, for instance, the colossal Olmec heads, and were thought to be the inventors of the ballgame.

El Tajin became the most important center after the great metropolis of Teotihuacan collapsed. Some of the architectural legacies from Teotihuacan are the tablero y talud, and the scroll patterns. These architectural features took a form of their own at the hands of El Tajin’s builders. In Mesoamerica, some of these features are closely related to iconographic representation of its main deities. El Tajin, being part of Mesoamerica, shared these elements with some of these cultures. However, the people

of El Tajin developed a unique style. The economy of the settlement grew as a result of coastal trading and the ballgame. People from all over went to El Tajin to trade goods, and also to be participants of the ritual of the ballgame. As a result, the elite governing group in El Tajin became stronger as well. The system that prevailed in the area was based on taxation, and the government benefited tremendously. The Totonacs are the last group, who occupied the site at El Tajin.



Figure 5-1. Example of Talud y Tablero feature at El Tajin. Photographed by Ileana Olmos.



Figure 5-2. Aerial view of “the great Greca or Xicalcolihqui wall”. The wall is a 360-meter structure shaped as a squared spiral. The spiral represents Quetzalcoatl, the feathered serpent, a deity revered in different forms throughout Mesoamerica. El Tajin model at The Museo de Antropologia Xalapa, Veracruz. Photographed by Ileana Olmos.



Figure 5-3. Example of the Maya Arch, Building "A". El Tajin archaeological site.
Photographed by Ileana Olmos.

CHAPTER 6 EL TAJIN BUILDING TECHNOLOGY

Cosmology in the region of Mesoamerica dictates the urban plan of the cities. In Chapter 4, the Mesoamerican concept for the creation of the universe was examined in order to better understand the reasoning behind the arrangement of structures in El Tajin. El Tajin architecture is known for its unique architectural elements. Some of these elements are original to this region, and others are adaptations from a prior neighboring cultures. Cosmology in Mesoamerica represents a unified concept, and El Tajin is not exempted from these traditions.

Design Dictated by Cosmology

According to Demarest and Conrad, all over Mesoamerica religion provided a powerful motivating force for the creation of architecture, as well as providing a justifying rationale for the organization of society (as cited in Kowalski 1999, p.10). A great number of buildings in El Tajin were conceived solely for an external audience. Sara Ladron de Guevara states that:

It is difficult to be submitted to a civilization that, for instance, did not build empty building spaces to be accessed, as we perceive them in our current cultural terms. Instead these civilizations created solid structures to be climbed, which involved a way of seeing, understanding and modifying the world, which is foreign to us. (Ladron de Guevara, *Ciencia y Arte*, 2006).

According to the discussion in Chapter 4, the El Tajin site was built modeling the Mesoamerican cosmology of the universe, where water surrounded the rectangle on the east and west sides, and the sun was at the center of the square. During a long period of time, the layout of the site of El Tajin was viewed like a disorganized single plane. This assessment comes from the perception of the ideal sites in Mesoamerica such as Teotihuacan. In Mesoamerica, it was common practice to build sites that were

organized along a linear axis, or two perpendiculars that functioned as avenues where a plane was placed, and that also served as a monitor of the cities (Ladron de Guevara, *Ciencia y Arte*, 2006).

At first sight, even when walking among the pyramidal structures of El Tajin, the impression is one of a compound that was randomly planned. However, when the layout is compared to the altar work studied in Chapter 4, a concordance of elements and their placement is perfectly interpreted. At the center of the site, the Pyramid of the Niches is located. This pyramid consists of 365 niches set in seven superimposed bodies or basements. This is an obvious allusion to the sun, as it is known that the solar calendar of 365 days was one of two, which ruled time counting, and also allowed control of the agricultural cycle (Figure 6-1). In this manner, just as in the altar relief on Chapter 4, the sun is placed in the middle, and so is the Pyramid of the Niches (Ladron de Guevara, 2006).

In the area surrounding the Pyramid of the Niches, to the north and to the south, various ball courts, which served as a place for the ball game ritual, can be found. In the same section, the reliefs featured interlaced serpent bodies, symbolizing a movement around the sun. This movement allows the sun to pass through the firmament and then the underworld, resulting in the succession of day and night, the light, and the darkness of each day (Ladron de Guevara, 2006). The earth is subjacent to the pyramid structures, and water flows in two ravines. One is to the east, the other one is to the west of the ceremonial site, and just like in the altar, is represented on its two inferior corners. In this same manner, two oceans delimited the Mesoamerican territory.

The two feathered serpents on the altar symbolize the wind. In the northern part

of the site, the construction of a wall in the shape of a giant greca or staggered scroll also symbolized Quetzalcoatl. Quetzalcoatl is the feathered serpent of Mesoamerican mythology, and is also linked to Ehecatl, a wind deity.

In the same manner, this wall contains 260 niches, which correspond to the second calendar utilized in Mesoamerica, the ritual that governed the destiny of men. In this way, a structure is acknowledged, not only geographically and spatially, but also immersed through the passage of time (Ladron de Guevara, *Ciencia y Arte*, 2006)

Urban Hierarchy in El Tajin

Located between two ravines, on one of the hillsides of the Papantla mountain range, El Tajin emerged as a ceremonial center in the Epi-Classic Period ca. 600 CE. It later became a city with the construction of El Tajin Chico, a residential complex to the north of the site. Around the ninth to the eleventh centuries, an integration phenomenon is observed in several regions of Mesoamerica after the collapse of Teotihuacan, from the political-cultural vacuum that it had left. This represented an adaptation and projection towards the political, economical, social, and cultural conditions of a group. In case of El Tajin, this social development could be deduced from its urban characteristics (Bruggeman 1993, *La ciudad del Tajin*, p. 27).

El Tajin contains a complex monumental core area, with large amounts of impressive cut-stone architecture together with complex sculpture and painting that are indicative of a Mesoamerican city (Koontz 2009, p. 2). However its urban conception, differs slightly from other similar centers in this region.

According to Mesoamericanist theory, the great urban centers developed in a north-south, east-west direction. The development of El Tajin follows this concept, as its architecture developed gradually from the southern plane to the northern plane.

However the urban core of the site became crowded, and seemingly disorganized. This disorganization makes perfect sense to those who have studied El Tajin in a Mesoamerican context, rather than an occidental one.

In line with Juergen Bruggemann (Infante, Tajin film, 1992) when talking about “El Proyecto Tajin 1984”, [El Tajin Project 1984 was the first formal restoration program sponsored by the INAH], the El Tajin urban context needs to be read distinctively:

Another surprising element found in El Tajin [when investigative work started in 1984], was the realization that order could be found in the urbanistic disorder. At first sight, when studying the urban planning for the city, it does not make sense, but after review, it does. The different phases are indicated, however it takes time to recognize what the builders of El Tajin were trying to achieve. It is vital to walk around, and many times to get lost on the site. It is also important to view El Tajin not with occidental eyes. Rather view it with Mesoamerican eyes. . . realizing that it is not important always to find the straight line, which is the shortest distance between two points. This has not been always the goal. The Mesoamerican urban objective is also to wander around, and to even get lost, this is the Tajin case. (Infante, Tajin film, 1992)

Following the ideas of Dr. Bruggemann, it is important to understand that this urban disorder was related to the way a visitor at El Tajin physically perceives the organization of the site. El Tajin, in contrast to Teotihuacan, which was planned on a perfect straight line, displays a more impulsive pattern. This pattern is believed to be related to the relationship between the dance of the stars, specifically Venus (S. Ladron de Guevara, personal communication, July 21, 2009).

When studying Mesoamerican urban centers such as Teotihuacan, the urban disposition of the roads, and buildings follows the straight line pattern that El Tajin lacks. The main avenue of Teotihuacan once stretched three miles, a singularly long path which led to a straight path towards the very heart of the city center (Headrick, 2007, p. 1) . As a visitor enters Teotihuacan from the southern avenue, the dominant feeling is

one of being drawn towards the mountain, which looms in the distance like a treasured goal (Headrick 2007, p.1). According to Headrick, the Teotihuacan builders further enhanced the natural landscape by artfully positioning their architecture to relate to it.

Urban Phases of El Tajin

Bruggeman explained in his article “Tajin” the urban significance of the site in the Gulf Coast of Mexico, and proposes different urban phases (Bruggemann J. K., 1993 p. 29). He also states that there is no other site similar in urban complexity to the one displayed at El Tajin. Cempoala which corresponds to the Late-Post-Classic, is perhaps the closest in complexity on the Gulf Coast of Mexico. El Tajin was undoubtedly, the most important center in the northeastern part of Mesoamerica after the collapse of Teotihuacan, and before Cempoala. Its cultural influence is noticeable in the entire Gulf area, all the way to the Mayan zone, and also in the Central high planes.

El Tajin should be considered essentially as a ceremonial center, with a symmetrical axis layout, and a deviation of twenty degrees to the northeast. There are four buildings displayed in a classical disposition with a great plaza in the middle. This unit forms the group known as the “Plaza del Arroyo” (Figure 6-2). In the central part of the city, other buildings like the two related ballcourts, share the same orientation.

The next phase proposed by Bruggeman was called the Urban Phase. El Tajin expands to the north, and changes its orientation forty five degrees northeast. The buildings of El Tajin Chico, constitute the greatest formation of this particular phase. This sector was conceived as a residential area for a permanent population, consisted of the government and the clergy. This was the area where the builders of El Tajin implemented the use of concrete slabs. This unique concept is further explained towards the end of Chapter 6.

Two architectural walls or barriers divided this area from the rest of the central area of the ancient city, and sub-divided the residential area into the governor's residence from the homes of high ranking government officials (Figure 6-3). The next phase of building is characterized by anarchy revealed in the urban planning, and the social dissolution. According to Bruggeman due to imposition of political forces some buildings are placed in random areas of the urban setting.

After years of further research, Bruggeman created a solid thesis about the building phases at the El Tajin site, and he recognized the following phases:

1. Pre- Urban phase: The Plaza del Arroyo is built (to the south of the site) for ceremonial activities.
2. Consolidation phase: The rural population becomes a tributary of the city. Buildings are constructed to the north of the first plaza.
3. Urban Expansion phase: This corresponds to the most accomplished era architectonically speaking.
4. Destruction phase: The population is fractured, and eventually the city is abandoned. (as cited in Ladron de Guevara 2005, p. 29).

In a personal conversation with Ladron de Guevara, and Koontz at the Museum of Anthropology in Xalapa in the summer of 2009, the ideas of hierarchy and stratification in El Tajin were discussed. From this conversation, one could deduce that El Tajin's urban placement is closely related to the ideology of class stratification that is based on Mesoamerican architectural concepts.

According to both scholars, the idea of political, and social hierarchy is a Mesoamerican concept, similar to the Maya idea of the acropolis. It is also valid to add that while the Maya and the Totonac were different ethnicities; They were both Mesoamerican. In Mayan society, the acropolis was the place where the elite resided and it was located in the upper levels. The ceremonial areas, located beneath the

acropolis, were where the common people resided. This idea of hierarchy at El Tajin is visual where the elite resided in the upper level of the the territory, the governor north of the elite, and the ceremonial area is south of both of these levels (S. Ladron de Guevara, personal communication, July 21, 2009). This disposition is indicated in the architecture, and in the use of the landscape.

The Ballcourts

It is believed that the Mesoamerican ballgame was invented by the Olmecs on the Gulf Coast in the peak of their civilization. The game was later exported throughout the entire Gulf region. The causes of its extinction were unknown, nevertheless, the sacred game reappeared later in the revered zone of El Tajin. On the site of El Tajin, seventeen ballcourts have been identified, a number that is unusual in Mesoamerica. An average number of ballcourts in this region would be of two to three. At this time the game also reverted to its archaic characteristics. These were based fundamentally on fertility rituals (Infante, Tajin Film, 1992). The greatest part of the iconography of El Tajin is focused on the ball game; its ritual, significance, and the dance of the stars which are related to Quetzalcoatl.

All ballcourts at El Tajin are framed by parallel masonry buildings. Parallel structures with a well-defined central alley are the basic architectural signature of the ballcourt, not only at El Tajin but it is also prevalent throughout much of Mesoamerica (Koontz 2009, p. 37). The southern monumental center of El Tajin contains numerous ballcourts for playing the ballgame. An example is the South ballcourt which is formed by two monumental structures (Figure 6-4 and Figure 6-5). Eleven courts have been identified in the heart of the site, and six more in the immediate surrounding area (as cited in Koontz 2009, p. 37). According to Koontz, several complex iconographic

stone sculptures contain clues to the court's function and meaning (Figure 6-6). An example are those revealed on the Northwest panel, according to archaeologist Juan Sanchez (Infante, Tajin film, 1992). Sanchez participated in the Proyecto Tajin, 1984-1991. The following interpretation of the panel is a product of a film sponsored by the INAH in 1992. About the narrative of this panel Sanchez added:

This panel is related to the aftermath of the ball game. The characters are under the presence of the God of the death. The depiction of this divinity shows his sternum, ribs, spinal column. The interesting part is that this depiction of the death represents a death character that is alive, as he shows his fleshy hands. It is a sacred death, as it is beautifully feathered. It represents a divine death, although sacred, and it is part of the most sacred ritual. The most important scene is the last one, which constitutes the last scene of the ball game. In this scene, the ball is represented by the interlaced serpents(which symbolized movement). These serpents are interlaced, hence decapitated. This means that the ball game has concluded. In the center of the panel, two players are identified by their yugos and palmas, which is characteristic of the ball game. Both players are communicating, as the symbol of the voice is depicted between them. The one on the left is probably the one who won, since he is asking his opponent to give him the honor of becoming a deity. This assumption could be made since the opponent player bears the knife which will sacrifice the other player. (Infante, Tajin, 1992)

Among the general ideas of the ballcourts at El Tajin, it is significant to note their orientation. Some are oriented east-west, while others are oriented north-south. The layout of these ballcourts is conceived as an "I" shape, and the structures which delineate them are duplicates (Figure 6-7). These structures are parallels [square plane], and their profile section is conceived as a straight wall over a smooth talud. This talud was probably built in this manner so the ball could return to the center of the court. The most southern ballcourt is the only exception to this, as it does not includes a talud, and its dimensions are larger than the rest of the ballcourts on the site (Ladron de Guevara 2005, p. 81-82).

Obviously ballcourts were of great importance to El Tajin, as the great majority of

bas-reliefs narrate different episodes of the ritual ballgame, the social hierarchies, and the importance of Quetzalcoatl. In this area, interlaced scroll work distinctive to the style of El Tajin is also depicted (Bruggemann, *El Horizonte Clasico en El Centro del Estado de Veracruz*, 1992).

Materials and Building Techniques

Buildings with square or rectangular bases form the construction system utilized at El Tajin. These buildings are formed of one or more super-imposed basements or massive structures. The basic concept of temples and altars does not differ from the Mesoamerican pattern. They are generally truncated pyramidal structures with an identifiable frontal elevation that is marked by the use of a sloping staircase, and limited fretwork (Ladron de Guevara 1999, p. 31) (See Figure 4-1) . The constructive system at El Tajin is based on compact axes made of diverse maleable materials, strenghtened and coated with stone walls in talud shape. It is then leveled with clay, and in many instances is covered by a thin layer of stucco called argamasa¹ (Figure 6-8).

Subsequently, the niches were added on the base and to the staircase. On the top, a temple or recint was erected. These top most structures were made of perishable materials (Ladron de Guevara 1999, p. 31). In the case of El Tajin Chico the elite residential and civil area, the structures were made out of stone and argamasa, and the roofing was a mixture of perishable materials, with a conglomerate of argamasa and pumice stone.

¹ Argamasa is a mixture that was used to coat the building walls at El Tajin to create a smooth finish. It was consisted of lime, sand and water. According to Ladron de Guevara, 1999, in some sites of Mesoamerica this mixture consisted in large part of crushed shells.

At El Tajin, some of the most characteristic aspects of the architecture are the ever-present niches. These are generally set in vertical walls (tableros) arising from the sloping talud and capped by a pointed cornice (Figure 6-9). These features, distinctively combined in Tajin architecture, provide a horizontal emphasis to the structures (Kowalski 1999, p. 119). The niches in the architecture of El Tajin were sometimes highlighted by the use of color. Originally at El Tajin, a great number of buildings were painted red, and occasionally “Mayan” blue and yellow (Figure 6-10). Some of the main structures were polychrome at different periods in their histories. In other instances, the niches were painted black or darker colors, which created a striking visual contrast against the lighter exterior colors (Kowalski 1999, p.120). Later, the niches were replaced by stepped frets. These were recessed as well, to provide the same darkened illusion of a horizontal niche line (Kowalski, 1999).

The niches are one of the most distinctive architectural characteristics at El Tajin are widespread across the site evident on different types of structures:

At El Tajin, niches may occur on any structure, but they are most common on temples, administrative buildings, and open platforms used for public rituals. They may also be placed on retaining walls, such as that which surrounds the acropolis of Tajin Chico, and even on buttresses erected to contain slumping structures. Over time, they appear to be reduced in size. This tendency coincides with the selections of a reduced tablero, extended talud, and a general shift to other symbolism (Kowalski 1999, p. 121).

The stepped fret-Work

Another architectural characteristic present at El Tajin is the stepped fret. A step fret is a two part form consisting of a rectangle inset on one side to form a series of steps, usually three, and the fret, a rectilinear spiral or hook, usually with five bars

(Figure 6-11) . Most commonly, the steps are the outside and the fret curls inward to the center (Sarro 1995, p. 202).

The stepped fret at El Tajin eventually became nearly as common as the niche, and in some instances it was used as a substitute. The stepped fret ornament had considerable importance in the later history of the site; It was utilized in a multitude of locations. Unlike the niches, it is found frequently on palace walls, usually in vertical friezes (Kowalski 1999, p. 123). Its varied repetitive designs have been made of stucco sculpted upon armatures, or of finely cut stones.

The “greca escalonada” is the Spanish term utilized at El Tajin to describe the motif discussed in this chapter as fret-work. This significant motif represents different ideas throughout the site. It is likely to have connotations parallel to the niche, with associations of divinity, sacredness, water, and rank (Kowalski 1999, p. 124). It is believed that the sacredness of the fret- work implies a connection to El Tajin deities, the water is related to the watery realms of the underworld, and the rank is related to the elite (Sarro 1995, p. 104). Most recently, according to Sarro, Bruggeman, Sara Ladron de Guevara, and Patricia Castillo Peña have viewed the stepped-fret as a sign of Quetzalcoatl. Because of the prevalence of the stepped-fret throughout El Tajin [which they called greca escalonada], these researchers believe that the major official cult of the city was dedicated to this deity.

According to Cortez Hernandez (1989), the iconography of the fret is related to the problem of water storage and control at El Tajin (as cited in Sarro 1995, p. 104). In this analysis, the great Xicalcolihqui² was originally a reservoir, and one of the buildings at

² Xicalcolihqui is the largest form of stepped-fret at El Tajin. It is a monumental wall located on the northern area of El Tajin.

El Tajin Chico (See Figure 5-2). Building D, had a water tunnel channel running from this area. This analysis is based on a recent discovery conducted by Bruggemann and Ortega in 1989, where a drain in that tunnel was identified (as cited in Sarro 1995, p. 104).

According to Sharp (1978), the fret-work is more common on palaces and administrative structures used by the elite (as cited in Kowaski 1999, p. 125). Therefore, the fret-work is associated with rank at El Tajin.

The Cornisa

In the architecture of El Tajin there are three elements distinctive of its style. These elements are the tablero y talud, the niche, and the cornisa. According to Ladron de Guevara, the cornisa constitutes the most distinctive architectural element at El Tajin, as no other group in this region developed this architectural element to the extent that the builders of El Tajin did.

The cornisa is also referred to as a flying cornice by archaeological scholars (S. Ladron de Guevara, personal communication, July 21, 2009) (Figure 6-12).

The cornisa is an element that enriches the composition of the architecture at El Tajin. Without it, the architecture would be extremely simple. The structural function of the cornisa cannot be negated. It is important to note the importance of the design of the cornisas, since it confirms the structural contribution to the architecture. The stones are generally arranged in three-or four-part layers, with the stones of greater dimensions placed on the upper part of the cornisa. The upper stones give support and structural bonding to the lower ones. In other words, these upper structural stones are weighted for the purpose of gravity that balances the entire structure (Bruggeman et al. 1992, p. 147).

Materials

The central area, where The Pyramid of the Niches is located, was considered the center where social and commercial activities took place, including the ball game that attracted foreign visitors, and helped boost the economy (Garcia y Garcia, personal communication, summer 2009) (Figure 6-13).

In the interior of some of the buildings of El Tajin, some materials include a mixture of fragments of wood tar, mud and sand. Over this mixture a layer of yellow dirt is present. This type of construction has caused sinkholes in some of the buildings; and has contributed to the cause of destruction of some areas.

El Tajin is divided into various groups, and El Tajin Chico constitutes one of the most interesting architectural innovations. This group of buildings is located or conceived on a natural elevation (Marquina 1990, p. 437). In structures such as Building "A" of El Tajin Chico, erected on a small natural esplanade, an array of interesting elements has been found (Figure 6-14). The main building elevation is oriented south, and is superimposed. The heart of this construction is composed of river stones, which are joined with mortar. This mortar mixture includes a great number of tepalcates [pottery fragments]. A large amount of key materials have also been found in the debris (fragments of aplanado (leveled) [paving]), with residuals of mural painting, which very likely belonged to the upper buildings. For the most part, these upper buildings are still unexplored (Marquina 1990, p. 439).

In the upper part of the building, fragments of a mixture were found that once were part of the roof. The main materials of the roofing system were a blend of a very strong lime and pumice stone. The mixture was poured into a mold called cimbra, [this mixture can be compared to a type of light mortar concrete utilized in today's construction

techniques]. An armature of timber could have formed the cimbra or filling stones, flattened on the upper part, to result in a more even surface. When the cimbra was removed, the openings that were covered, could self-support themselves, since the dimensions they covered were not large (Marquina 1990, p. 441).

The Introduction of Concrete in El Tajin Chico

The Pre-Columbian metropolis of El Tajin is located in a small valley, in one of the foothills of the mountain range of Papantla. Due to the configuration of its land, the edifices were placed over natural hills and terraces, and positioned over hard residual soils (Cuevas Fernandez et al., 1995 p. 73).

Topographically speaking, El Tajin is divided into two sections; the first section corresponds to the buildings located on the dry riverbed, which levels the valley, on a natural slope from north to south. The second section corresponds to the structures positioned on a natural soil elevation artificially leveled in terraces, with a natural slope similar to the first section. The first section of the site is simply known as El Tajin, this is where the ceremonial center is located. The second section on the hill keeps the original name, Tajin Chico, given by the indigenous local peoples of the site. In this area, residential and civil structures are also located (Cuevas Fernandez et al., 1995).

On the residential buildings of El Tajin Chico, the roof system resembled the pour-concrete slab methods of today, but without the reinforcing steel rods (Ladron de Guevara 1999, p. 31). Before the use of concrete is explored, it is relevant to state the differences between the diverse types of concrete, to better understand what the El Tajin Chico builders were truly utilizing.

Concrete and Cement

Concrete is produced when a mixture of cement and water react with other inert

materials. The most commonly utilized inert materials are sand, and crushed gravel.

After the cement and the water are mixed, the chemical process of hydration begins. Then, after just a few hours, the mixture hardens, and the paste that is formed serves to agglutinate the inert materials into a solid mass. In ideal conditions, this hardening process will continue until the concrete obtains the hardness characteristic of rock (Parker 1987, p. 23). Ideal concrete has significant resistance to compression, as the aggregate efficiently carries the compression load. However, it is weak in tension, as the cement, which holds the aggregate in place, can crack, resulting in the failure of the structure. In some applications, concrete can be designed and used to resist compression efforts, and this does not require any other element to keep it together.

Nevertheless, for the most part it is necessary to provide a type of support for the mixture that allows the development of resistance to tension. The most common elements used today are metal reinforcing bars, which are placed in the mixture of concrete before the hardening process takes place. These metal bars reinforce the concrete against tension (Parker 1987, p. 24). This type of concrete is what we know as reinforced concrete. This modern concept of concrete made with industrially produced cement appeared at the beginning of the nineteenth century, when the material known as Portland cement was developed.

The cement generally utilized in the construction of buildings today is Portland cement. There are five types of cement usually available in the United States, from which the American Society for Testing and Materials has established two specifications for building constructions (Parker 1987, p. 24).

In the buildings of El Tajin Chico, the cement implemented was not reinforced. It

was a mixture of a diverse variety of rock material that was found in the area. According to its application necessities, other materials were mixed together, and used for diverse purposes (Cuevas Fernandez 1995, p. 79). The concrete of El Tajin Chico is more similar to the first type of concrete developed at the beginning of the nineteenth century, where it was utilized only in massive walls, foundations and bridges (Parker 1987, p. 15).

This system became an innovative and unique solution utilized solely by the builders of El Tajin. This building technique was utilized as part of the roofing system, as a solution to cover smaller interior spaces. The construction system utilized in this area was known as cimbrado, which consists of a form of light concrete poured into a space limited by dirt. The dirt or soil played the role of a mold or temporary support system while the concrete dried.

To explain further, the perimeter of the building was limited by the outer walls, then x amount of dirt and stones were piled up until the desired height was set for the interior volume, and then the mixture of argamasa (a rich mixture made out of pomes stones, lime, sand, and other aggregates) was poured upon the man-made dirt mound. The concrete slabs that have been found in El Tajin presented a slight curve in the center, which was not only caused by the mound shape underneath, but was also purposefully designed in this way so it would work structurally as a cupola (Garcia y Garcia, personal communication, summer 2009).

Siliceous and aluminous materials form Pozzolanic cement. This blend became the natural cement used in ancient times (Harris 2005, p. 757). According to Raymundo Rivera Villareal, an engineer dedicated to the study of concrete in Mexico for more than

30 years, a version of the mortar at El Tajin was responsible for the construction of flat roofs in later phases of the city. This is clearly visible in the surviving roof fragments of a structure called "Building C" (Wilkerson 1987, p. 37).

The type of poured concrete implemented at El Tajin is very similar to that used by ancient civilizations such as the Romans. The builders of El Tajin also incorporated a version of cement, with materials that reacted similarly to those of Pozzolanic Roman cement (Medina, 2006). At El Tajin, the builders were able to attain new progressive solutions to structural challenges to roof interior spaces with this new process.

The Columns Complex: The Architectural Significance

The area of the Temple of the Columns located in the highest in topography, and it was an independent complex (Figure 6-15). It was named the columns by the investigators who explored it due to this unusual feature of the main building. Colossal circular sections of columns were found on this particular site; these large columns were part of the temple of the last ruler of El Tajin. From this area of the archaeological zone, the entire site could be seen. In El Tajin, there was a ruler identified as Conejo 13 (Rabbit 13). The adventures of Conejo 13 have been recorded on the bass-reliefs of the Temple of the Columns. The era of Conejo 13 represented a time of maximum splendor in the arts and architecture in El Tajin. According to recent studies, although El Tajin as an urban setting encompassed a relatively short span of time, it was one of fruitful constructive activity (Bruggemann, Ladron p. 54).

After a great pre-urban phase, which was the time of building the great plaza of the Arroyo, the culture started to consolidate, in classical Mesoamerican manner, a more permanent society which could be considered urban, and that is established the urban enclosure better known as El Tajin Chico. (Bruggemann, Ladron de Guevara, p. 54)

Summary

The architectural complex at El Tajin developed in four to five different phases, and in the last two phases, a new concept in architecture was introduced to the region. El Tajin followed the idea of classic Mesoamerican cosmology to conceive its city. This urban concept was based on the concept of the universe in Mesoamerica, which prevailed to the Aztec period. El Tajin, as Teotihuacan and the Mayan centers, displayed a preoccupation with the stratification of society. It is fascinating to observe that social classes not only divided El Tajin, but also that the natural topography of the place allowed for this to occur.

The great majority of cities in Mesoamerica grew in a north-south, and east-west pattern. Teotihuacan is the prime example of this organization that evolves from a Mesoamerican ideology. While El Tajin also started developing in this manner, it had the unique distinction of losing this pattern around its third phase of growth. El Tajin seemed to be built with apparent disorganization, but examination reveals a possible plan. According to scholars such as Ladron de Guevara, El Tajin's devotion to the feather serpent deity of Quetzalcoatl could settle El Tajin's urban setting mystery. Quetzalcoatl, the feathered serpent represented also the star Venus. Venus was the most visible star from El Tajin, and it is probable the edifications followed the star's orbit on the site. According to Ladron de Guevara, pilgrimage was not uncommon in this region, and probably the urban setting echoed the star's procession.

The first building discovered at El Tajin is known as the Pyramid of the Niches. This building is believed to represent the sun as the solar calendar. Its 365 niches attest to the calendar, and as in Mesoamerican cosmology, the sun was the center of the universe. This pyramid was set in the center of the city, surrounded east and west

by two rivers. The technology utilized in El Tajin developed quickly, and by the time of the construction of buildings for the elite class, at El Tajin Chico, the introduction of a form of poured-concrete was implemented. The introduction of this new technology represents the major purpose of this study, as it was this discovery that aroused our interest. It is difficult to imagine how such an ancient civilization, thought to be rudimentary in comparison to other old western cultures, was actually searching for ideas that equate to our modern techniques.

El Tajin had already developed a distinctive style in the Veracruz area with a style of the same name, but this time something else was changing entirely the shape of this culture. Up until this point, the massive architecture of El Tajin was only conceived for ritualistic purposes. It is important to clarify that the concept of Mesoamerican architecture is very different from the western architectural mentality. In western culture, the idea of interior spaces is what defines architecture. In Mesoamerica, the architecture was related to the landscape, because nature meant life. In other words, interior spaces were not part of its architecture. The El Tajin population lived on the outskirts of the city in houses that were made out of more practical materials, but with the growth of El Tajin as a cultural center, the elite group came to occupy the acropolis.

The elite group of El Tajin settled in the second highest topography of the site. The highest level was reserved solely for the government and became the residence of El Tajin's last governor. The elite group occupied the area known as El Tajin Chico, and the governor's quarters were placed in the section where a palace known as the Building of the Columns was erected. El Tajin Chico was the area where the unique form of concrete, was first implemented. This new technology allowed the builders to

utilize internal spaces in massive constructions. The builders of El Tajin fabricated a counterpart of today's concrete slabs to roof their buildings. This concept was a paradigm shift in the region. Many drawings that are part of the archaeological reconstruction of the site show buildings that seem extremely up to date. The uniqueness of the architecture was greatly enriched with the implementation of this new concept, but it did not lose its original character. The main feature in the iconography of the site was the greca escalonada or stepped fretwork, and this element continued to be part of the new structures.

In the area of the Temple of the columns, the architecture also became massive, and interior. The builders of El Tajin, utilizing available material, created a style never before seen, which influenced many other groups in the area. In order to better understand the concrete system utilized in El Tajin, it is imperative to differentiate the properties of the materials utilized at El Tajin Chico. It has been stated in this chapter that the poured-concrete utilized on the site was not reinforced. However, it is also important to establish that it was probably similar to concrete systems utilized in ancient cultures like those of the Romans and Greeks.



Figure 6-1. The Pyramid of the Niches. This pyramid consists of 365 niches set in seven superimposed bodies or basements, El Tajin site. Photographed by Ileana Olmos.



A



B

Figure 6-2. Four high buildings flank the Arroyo group Plaza. These buildings are numbered 19, 20, 16 and 18 respectively. A) Southeast corner of pyramid on south side of the Arroyo Group. B) South side of building 16. Photographed by Ileana Olmos.



A



B

Figure 6-3. El Tajin Chico area. A) Building I, El Tajin Chico area. A recent built roof protects frescoes from natural elements. B) Building C, Tajin Chico, El Tajin. Photographed by Ileana Olmos.



A



B

Figure 6-4. The South ballcourt is formed by the monumental platforms of structures 5 and 6. Parallel masonry buildings frame all ballcourts at El Tajin. A) Central alley of South ballcourt. B) Structure 6 platform showing panel reliefs on walls. Photographed by Ileana Olmos.



Figure 6-5. Building or structure 5. Building 4 and 5 also served as the benches of the court for the ballgame at El Tajin. Photographed by Ileana Olmos.



Figure 6-6. Northwest panel of South ballcourt, El Tajin site. Photographed by Ileana Olmos.



Figure 6-7. Ballcourt located northeast of the Plaza del Arroyo, El Tajin site. The alley is framed by structures 17 and 27. Photographed by Ileana Olmos.



Figure 6-8. Buildings at El Tajin partially coated with argamasa, the mixture consisted of lime sand and water. Photographed by Ileana Olmos.

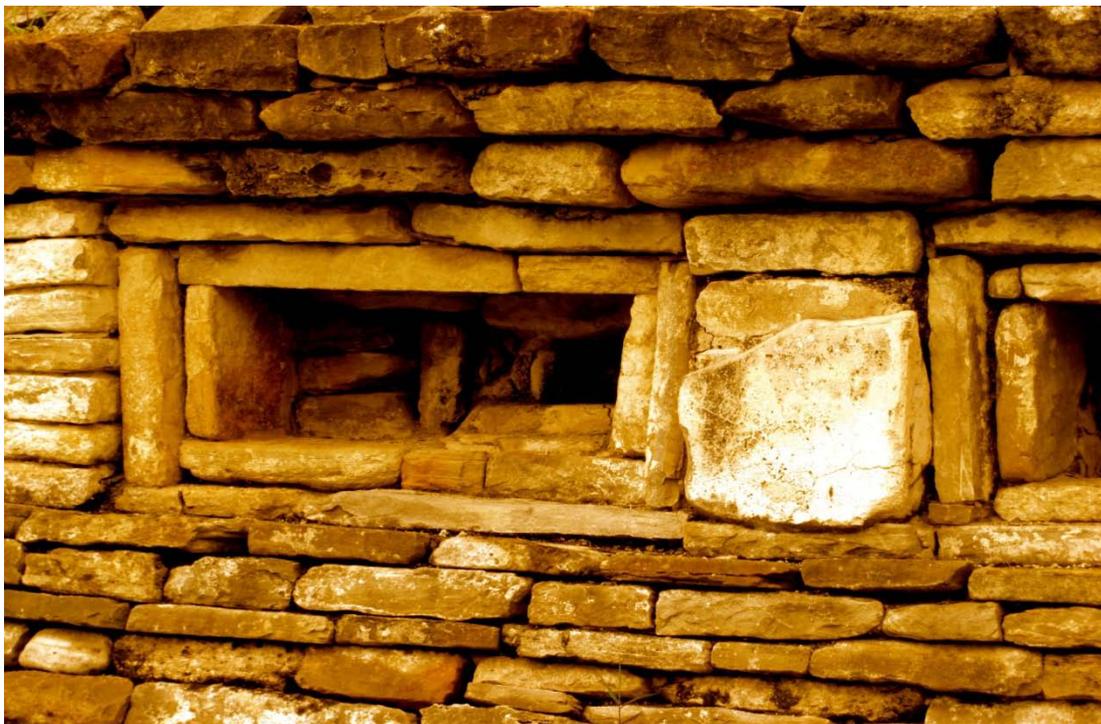


Figure 6-9. Examples of niches at El Tajin. Niches are the most common architectural feature at El Tajin site. Photographed by Ileana Olmos.



Figure 6-10. Building at El Tajin showing original Mayan blue pigment on a portion of wall area. A greater part of the buildings at El Tajin were painted red, and occasionally Mayan blue and yellow. Photographed by Ileana Olmos.



A



B

Figure 6-11. The stepped fret-work is an ornamental feature found throughout the site of El Tajin. A) Detail of stepped fret, El Tajin Chico. B) Example of stepped fret-work at El Tajin Chico's residential area. Photographed by Ileana Olmos.



Figure 6-12. The flying cornice or “cornisa” is one of the most distinctive architectural features at El Tajin. The cornisa is the uppermost slope outward from bottom to top. Photographed by Ileana Olmos.



Figure 6-13. View from El Tajin Chico looking south towards El Tajin's central area. Photographed by Ileana Olmos.



Figure 6-14. Building "A" model, El Tajin Museum. Photographed by Ileana Olmos.

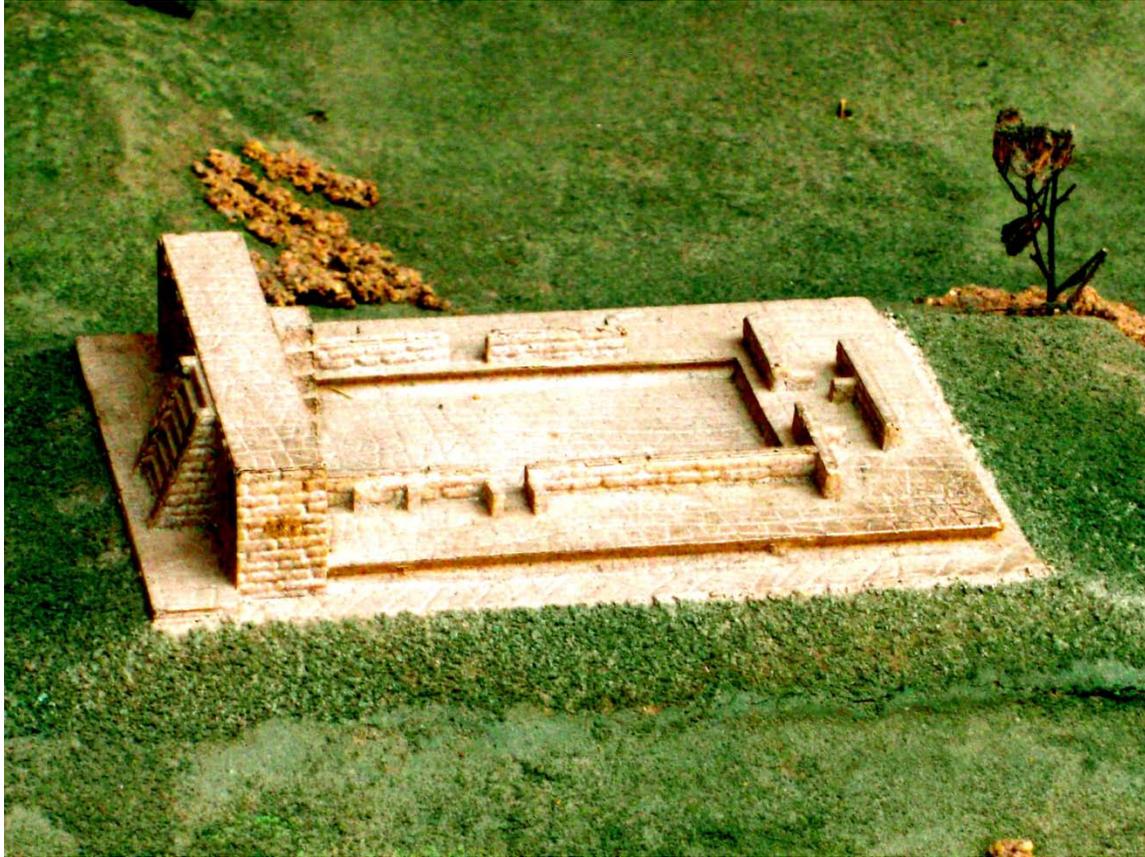


Figure 6-15. Temple of the Columns model, Museo de Antropología de Xalapa.
Photographed by Ileana Olmos.

CHAPTER 7 PRESERVING EL TAJIN FOR FUTURE GENERATIONS

The Tajin Project 1984

The "El Proyecto Tajin" began in 1984 through an agreement between the INAH and the government of the State of Veracruz. The objectives of the project were: the conservation, restoration and investigation of an archaeological site. According to Bruggemann (1992), the first phase was the lengthiest one, as the entire team had to become acquainted with the territory (Infante, Tajin, 1992).

Archaeologist Juan Sanchez, who worked in the project for over 5 years, explained that the initial idea of the project was to restore the Pyramid of the Niches as it was deteriorating. This deterioration was taking place on the front and posterior sides of this significant building. Sanchez added that the wear and tear was the product of almost forty years of negligence, which was causing the most revered masterpiece of El Tajin, to fall apart.

Dense vegetation covered the entire area, and places like the Plaza del Arroyo and the rear part of the Pyramid of the Niches were not known at the beginning of the restoration. Therefore, the project, which started with the idea of restoring the Pyramid of the Niches, became more demanding. The need to conserve the stones, the bas-reliefs, became a concern of the project as well. An array of iconographic information started to appear with the introduction of reliefs proceeding from the Pyramid of the Niches. These were part of the lintels, which adorned the upper part of the pyramid. According to Sanchez (1992), this explained why his work on the Tajin Project extended from 15 days in 1984 to over 5 more years.

Rene Ortega, sub director for the Tajin Project stated:

We discovered that not only we needed to restore the Pyramid of the Niches in El Tajin, but we also saw that building five was coming apart, and so was the South ball court. (Infante, Tajin,1992)

The Pyramid of the Niches

Since the twelfth century, the time of its collapse, until the time of its discovery in the eighteenth century when the first ruins were revealed, El Tajin had been buried dense tropical jungle. The fortuitous discovery of the settlement by a Spanish officer generated great interest in Mexico and the rest of the world. From this point on, many travelers and explorers visited the ruins. Even with great exposure, for more than a century the only restored structure at El Tajin was the celebrated Pyramid of the Niches. The architecture of this imposing building was acclaimed around the world. However it has only been in this century that the full dimension of the city has been uncovered.

In 1935, approximately thirty-two hectares around the Pyramid of the Niches were uncovered. In this manner, the existence of the city was revealed. At its peak, it is believed that the urban zone of El Tajin reached approximately 1100 hectares. The urban site is also considered one of the most important cities of ancient Mexico (Infante, 1992).

Jose Garcia Payon, an erudite man and mentor to many generations of archaeologists, became the most important individual involved in the development of El Tajin's restoration (Bruggemann J. K., La Ciudad de Tajin: De la Expansion a la Anarquia, 1993). Payon undertook the first important works of the El Tajin project in 1938. He dedicated his entire life to the investigation of the site until his death in 1977. Since 1984, The Tajin Project has employed 35 technicians, among them archaeologists, architects and anthropologists, and more than 420 site workers. These

workers were for the most part occupants of the region, who were trained on site.

Since 1984, more than twenty-five buildings have been restored, along with numerous reliefs and mural paintings. Masses of debris have been extracted, and an on-site museum is now open to the public.

This great project, however, has not revealed any human remains; the few uncovered were burials, that belonged to a time linked to a later occupancy of the site.

Few elements were available to provide clues about who the inhabitants of El Tajin were. In *Tajin*, the film (1992), the narrator described El Tajin as follows:

A strange urbanism, an obsessive architecture, profuse low reliefs, even more hermetic paintings, almost no massive sculpture, not a single hieroglyph, just as if the men of El Tajin wished to protect their deities (Infante, 1992).

Synthesis of the Most Relevant Research Work

Before the seventeenth century, prior to all the investigations of archaeological character, El Tajin became a place where many explorers and scientists flocked in search of the enigma of a unique culture in Mesoamerica. It was not until 1924, that the first formal operation undertook the El Tajin project. The following is a review of local and global researchers who became interested in the uncovered of El Tajin.

- **1785** : The first news about El Tajin appeared in the *Gaceta de Mexico* (number 42, on July 12th of 1785).
- **1812**: Alexander V. Humboldt wrote his essay “*Essai Politique sur le Royaume de Nouvelle Espagne*”, in which he revealed the exploration of Guillermo Dupaix and his drawings of the Pyramid of the Niches.
- **1836**: Karl Nebel published a drawing of the same pyramid in his *Voyage pittoresque*. Nebel became the first traveler to recognize the site as a city, not just a pyramid.
- **1853-1856**: The news of the *Gaceta* helped priest Pedro Jose Marquez to elaborate a description of the place in his *Due “Antichi Monumenti di Architettura Messicana”*, published in Rome in 1804.

- **1891-1892** :Francisco del Paso and Troncoso lead an expedition for the Scientific Columbian Commission.
- **1907**: The Scientific Columbia Commission published the layout of the site
- **1908** :Eduard Seler published “Eine Steinfigur Aus der Sierra von Zacatlan”. In this document, illustrative material of the site was revealed (Ladron de Guevara 2005, p. 197-202).

In 1924, the government of Mexico became involved with the first works of consolidation and conservation of the Pyramid of the Niches. By the time the Proyecto Tajin 1984 began the restoration of the same building, 16 other projects had preceded it.

Induction of a Site into the World Heritage List

Legally speaking, there are lawful elements that protect the cultural patrimony of a nation. The countries, which are members of UNESCO around the world, rely on an International Treaty known as the “Convention for the Protection of Global, Cultural and Natural Patrimony”. The mission of the UNESCO Global Patrimony is to promote the commitment of the convention among countries, to encourage the protection of their natural-cultural patrimony, and also to foment global cooperation for the conservation of their patrimony.

The Convention consists of thirty-eight articles, divided into eight terms. These are determinants that help protect the global patrimony. Mexico signed the Convention in 1984, and in 1994 gained a place as a member for the Global Patrimony Committee (Article 8 of the Convention). There are other conventions that protect intangible heritage elements and cultural elements existing underwater:

- The Convention on the Protection of World Culture and Nature (Paris, 16 November 1972).

- The Convention for the Safeguarding of Intangible Cultural Heritage (Paris, 17 October 2003).
- The Convention on the Protection of Underwater Cultural Heritage (Paris, 2 November 2001)

Mexico also played host to some international legal instruments, as was the case of the UNESCO Convention, signed in Paris in 1972 which governed the World Heritage sites of the country. (Mexican Legal Instruments for the Protection of the Cultural Heritage). In Mexico various codes, laws and regulations were adopted as legal instruments to safeguard their heritage. In 1992, EL Tajin was inducted into the World Heritage through UNESCO (Marco Normativo y Legal Para la Salvaguarda del Patrimonio legal de Mexico).

Summary

In chapter 7, the topic of preservation of the site of El Tajin was discussed along with a synthesis of the most relevant research work conducted at El Tajin since its first discovery in the eighteenth century. This chapter presents how scholars and scientists from around the world flocked to the dense and humid jungles of Papantla to attest to the mystery of the site. At the time of discovery by an officer of the kingdom of New Spain in the late 1700s, only the indigenous people of the region knew of the site's existence. After the collapse and subsequent abandonment of the site in the thirteenth century, the site became sacred site to the remaining population who lived on its outskirts. Later, the site became a necropolis.

The Spaniard conquistadores never knew of the existence of such a site, and the first findings of the archaeological site were purely accidental. The Temple of the Niches was the only structure known to the curious travelers, and scientists who visited the site

after the initial discovery, and it was not until the nineteenth century that the rest of the site began to be explored.

The first serious archaeological work was conducted by the INAH in 1984, and was called Proyecto Tajin 1984. Archaeologist Juergen Bruggemann was the director. He stayed involved until his death in the early 2000's. The archaeological site was inducted into the World Heritage list through UNESCO in 1992, and it is currently protected by the INAH. Acid rain, and various natural elements have put the site at risk.

CHAPTER 8 CONCLUSION

Even though the site of El Tajin has been broadly explored since 1785, extensively excavated and studied through almost three centuries, the site remains a culture and a place that has yielded more questions than answers. The origins of the first builders have not been established with certainty, and the phases of construction have not been precisely demarcated. The builders of El Tajin disappeared without leaving behind a single document outlining their techniques or motivation for creating the city. The site, although deeply explored, still maintains a certain mystery. The unique architecture is only interpreted through the communality that links El Tajin with the rest of the Mesoamerica in its own time. The reason behind the large number of ballcourts on site is also unclear. Numerous questions resulted from this study, and some of these same questions will serve as material for future research.

The purpose of this study was to better understand the context of Pre-Columbian Mesoamerican architecture, through its cosmology and mythology, in order to evaluate the significance of El Tajin in the world. In spite of the pending questions, many aspects of this research help us to understand the complex minds of these ancient builders. Even when we initially interpreted the urban setting as a maze of massive buildings, that same setting gains force and understanding through the research. This understanding came from a realization that nature governed and directed the every choice, and that builders' awareness of the cosmos made their life more meaningful, and more logical. In today's architecture certain patterns are ever present, just as those that existed in El Tajin in Mesoamerica. Government and commerce always occupied the central area of the city, and the major part of the population was located outside the important urban

centers. It is also important to understand that cities such as El Tajin in Mesoamerica should not be evaluated through western eyes.

This study mainly developed from questions about the building techniques of the later construction phases of the city. When the city became wealthier, and the elite group grew in numbers, they planned according to the Mesoamerica ideal, an acropolis. In this study we see the progression, and consequently stratification, of the population. The natural topography helped to establish this separation, and the mind of the builders started to create new structural forms, while keeping the original character of their architecture.

This later phase is known as the area called "Tajin Chico." The character of the buildings was residential with some civil structures as well. The main contribution of this later phase was not that a separation of classes became more obvious, but that it was the first time the interior spaces of the massive stone buildings were inhabited. In Mesoamerican architecture, the exterior architecture is more significant than the interior (which is not the case in the western world). Up until this point, the massive architecture of El Tajin was merely sacred, and the buildings were only utilized for ceremonies, and were not designed for internal living. El Tajin Chico complex changed all that, and the elite started occupying these multi-layered buildings at the highest point of El Tajin's topography.

The way these buildings were conceived came after the implementation of a type of light-poured form of concrete, which constituted a paradigm shift not only for El Tajin, but also in the region of North Mesoamerica. The roofing system was probably created by using timber molds and pouring the mixture of lime, sand and gravel into it. This was

in essence a form of light mortar concrete, and since it was not reinforced (like today's concrete), the process for building walls, and roofs was more strenuous and even more difficult. In order to create concrete slabs, the builders had to build layer upon layer of the same mixture to create more strength, since no other material was introduced inside the mixture to fight the impact of compression forces. At El Tajin the implementation of this technique by the later builders not only re-shaped the image of their structures, but also created a style that influenced neighboring cultures such as Cuyuxquihui in the region of Veracruz. In this area of El Tajin Chico, new elements such as opening entrances, similar to the Mayan arch, and multi-storied rooms, were introduced to the new architecture. This was the first time these types of concepts were practiced in this area of Mesoamerica.

In recent years, archaeologists and scientists have developed alternatives to better study the level of resistance of these ancient forms of concrete. Some of these practices have not been as effective as others. Some of the roof material was severed and removed from El Tajin Chico complex, and moved to the central area of El Tajin site, only to have the restorers realize that the INAH would not authorize these elements to be placed back at their origin. According to personal communication with Ladron de Guevara, the reason behind this is that in archaeology studies a "witness structure" has to demarcate an original placement, so the archaeological element can be replaced on the original site. In other words, before removing any stones, or walls, or structural elements from an edification, the height, and size needs to be established. Otherwise returning the repair piece would be considered arbitrary. This would violate the codes and laws of the INAH, due to false witness.

The INAH, the government of Veracruz, the institute of Anthropology and the Universidad Veracruzana have united efforts to continue discovering the site, and they are currently studying buildings such as the Temple of the Columns (the palace of the last ruler of El Tajin), which is off-limits to the general public. The Temple of the Columns represents the last phase of the complex of El Tajin. It is important to state in this research that there is new material being produced in Veracruz, which belongs to the INAH that was off-limits to the public due to the nature of the investigation.

El Tajin is an enormous site, and due to its nature, it is also expected that new investigations will cause old conceptions to be replaced. This research is open to growth, and it is our desire to lead the way to future studies.

Preservation Strategies

El Tajin archaeological site is currently cared for the government of Mexico, through the INAH. It is the great pride of the state of Veracruz. However, additional efforts could be better employed to celebrate its legacy. Educating the general public seems a basic recommendation. Such education is vital for a place like this. As much as the local people treasure and are devoted to their ancestry, re-educating them on the significance of the place constitutes an important upgrade for the site.

On our visit in the summer of 2009 to the site, we observed the behavior of visitors. El Tajin is in need of more custodians on-site that can effectively protect the structures from the tourists' impact. It is a vital heritage to protect, and no one should be climbing on the steps of the buildings or wandering around places that are still under study. The general public (local and international) needs to be informed of the numerous efforts that have been made for of almost a century on the site. In this

manner, their respect for the place will grow, and at the same time, they will become less likely to misuse the surroundings.

It is also fair to add that the place is very well kept in all of its aspects. We would recommend having more literature about El Tajin available to the public, as an alternative to utilizing the tour guide services. The site is visited by hundreds of people on a daily basis. The setting is exceptionally family-oriented. However, there is not enough material to interest the children who visit the place. This is probably the reason behind the misuse of the structures by this part of the population. If an interactive experience at the existing museum was implemented this behavior could be modified. The idea is to educate adults and children on the importance of El Tajin, prior to entering the premises. In this manner, the mindset could be dramatically adjusted. We had the opportunity to assist groups of people with candid questions about the site, and perceived first hand their change in outlook almost immediately.

According to what we have learned from previous members of El Tajin Project 1984-1992, the natural elements at El Tajin, and the acid rain are eroding the iconographic work of many of the structures. It is not as discernible today, but it could hopefully be prevented. In conclusion, further research on these types of issues on El Tajin, could benefit the life of this world heritage.

As a result of these observations, we conclude by proposing the following preservation strategies:

- An interactive museum for children and teenagers. This museum could be part of the existing museum.
- The implementation of an interpretive use of the site. This could be a way for the public to relate to the site in a more interactive manner. The use of didactic

material associated with the archaeological site, in at least two different languages could benefit this effort.

- Physical strategies. This could be achieved by implementing a simple use plan. The public would be allowed to enjoy the site, without trespassing on important areas, or misusing the permanent structures. This strategy will help to decrease the cultural tourism impact.
- Global awareness. This is based on global cooperation from institutions such as UNESCO, ICCROM and the WMF, so they could help instruct more people in these regions of the globe. In this manner, local government would also become more active in its efforts to protect this global patrimony

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BIOGRAPHICAL SKETCH

Ileana Izette Olmos, daughter of Enrique Olmos and Vilma Raquel Berrio, grew up in Panama city, Panama. The oldest of three, she graduated in December of 2007 with a Bachelor's degree of Fine Arts, with concentration in drawing and painting from University of North Florida in Jacksonville, Florida. Ileana grew up loving art and architecture. While still in Panama, she attended Architecture School through Panama University. Her love of and personal contact with ancient cultures made her pursue the career of Historic Preservation.

In the spring of 2008, she enrolled in the Master of Historic Preservation at the University of Florida's College of Design, Construction, and Planning. She is currently most interested in Pre-Columbian Art and Architecture, and expects to be involved in future projects around the world through global organizations. Her goal is to create awareness of ancient World Heritage monuments around the globe. Ileana has traveled extensively in Europe and in America, and expects to continue doing the same in Asia and Africa.