



INTERPRETING THE PAST TO PROTECT THE FUTURE

*BRASS/El Pilar Program
1997 Field Report*

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BACKGROUND TO FIELDWORK AT EL PILAR

The vision for the work at El Pilar is to integrate research and development components into a single multidisciplinary program. Archaeological research drives the program, as the El Pilar Archaeological Reserve for Maya Flora and Fauna surrounds an important ancient Maya center. Resource management and conservation are global concerns but local and regional economic development plays an essential role. Further, stewardship is a basic community issue, and with local participation, the future of El Pilar is guaranteed. Government has initiated the establishment of the reserve and now local community involvement has been promoted in adjacent communities (Fig. 1). With the private tourism sector, the regional ecotourism market has grown and there is increased interest in the new El Pilar destination. These community development links are critical to the long-term conservation goals of the program.

Investigations of forest structure, economic plants, wildlife adaptations, and the interactions of cultural domains of humans and the natural domains of the Maya forest are the bases for interpreting the long-term adaptive strategies of the ancient Maya. Such interpretations form the basis of the forest garden polycultivation design that must have been an important source of subsistence for inhabitants of the ancient Maya forest and which has potential to provide alternative subsistence strategies for contemporary inhabitants as well.

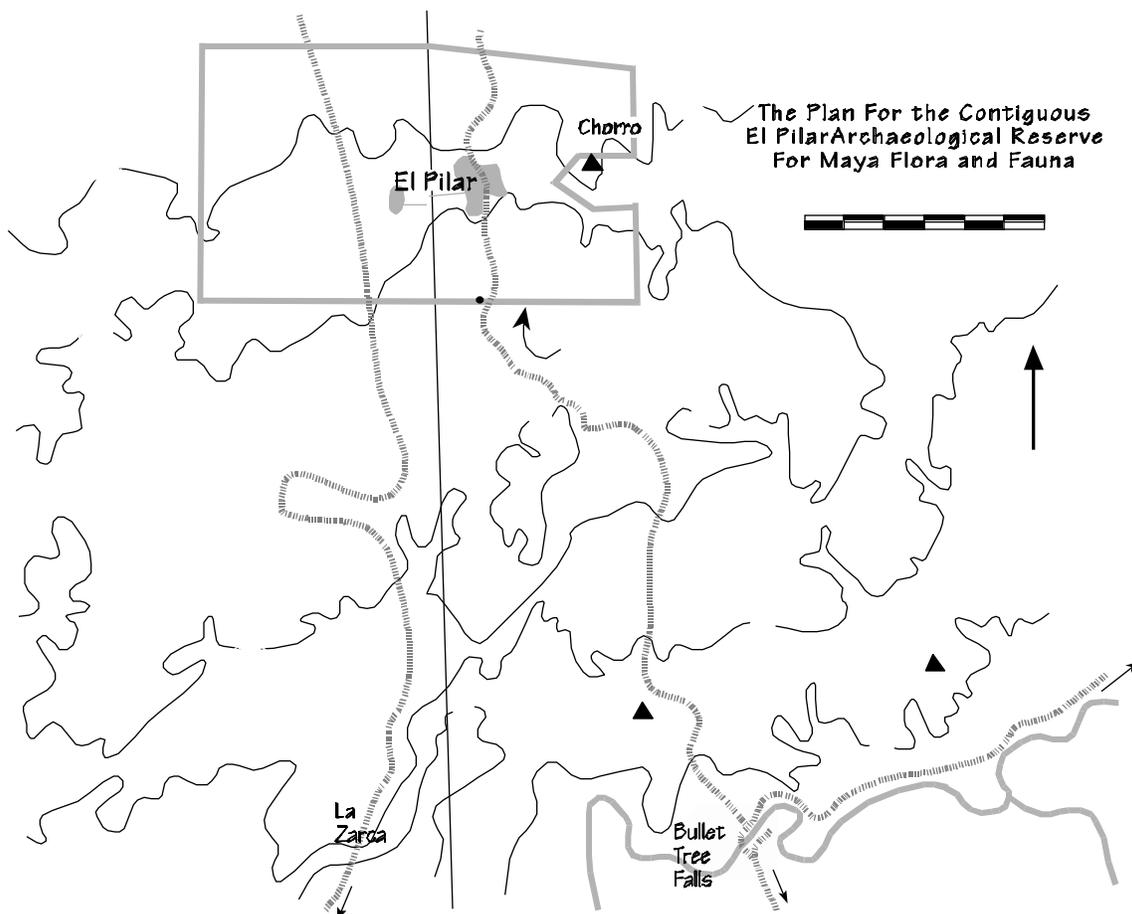


Figure 1: El Pilar Location

Overall Objectives

- 1) To understand the ancient Maya center of El Pilar in its regional context.
- 2) To collect data on the chronology and development of El Pilar.
- 3) To interpret the role El Pilar played in the Belize River Area.
- 4) To promote a clear research, conservation, and maintenance design.
- 5) To present the archaeology of El Pilar in a clear and accessible manner.

As the cornerstone of the program, the archaeology at El Pilar links the multidisciplinary research and development components. Economic improvement and issues of management and administration are tied to the tourism aspects of the reserve which focuses on research of the ancient Maya. Governmental support for reserve management, while seeking revenues from tourism, is also related to resource conservation concerns among the international community. The relationships between the varied components of the program are mediated through a cultural ecological approach to issues of sustainability as interpreted from the past, understood in the present, to protect for the future.

The archaeology of El Pilar is propelled by a general research design aimed at understanding the dynamic evolution of complex societies and civilizations. El Pilar is the largest known center in the upper Belize River area and clearly played a major role in local political evolution and regional organization of the ancient Maya civilization. Current understanding of Maya development suggests that centers emerged to organize and integrate growing local populations. Interpretations of the political organization presents a view of growing independent hierarchies from the Preclassic through the Early Classic periods. Emergent hierarchies focused on a center or cluster of centers as they grew. These centers coordinated resources locally and interacted across areas within the region. Over the course of the Classic Period, regionally formed, yet shifting, alliances evolved over time and across space. Major questions of the degree of inter- vs. independence among centers in the Late Classic Period are yet to be fully resolved. El Pilar fits into this economic and political landscape and the research will address these problems.

Long Term Goals

- 1) Survey and investigate the archaeological remains at El Pilar.
- 2) Increase the visibility of El Pilar.
- 3) Advocate community participation in Belize and Guatemala.
- 4) Develop guidelines and standards for archaeological conservation of the Maya forest.
- 5) Develop a formal training program for promoting traditional Maya masonry.
- 6) Seek funding for the visitors center, facilities, and amenities.
- 7) Seek funds for research facilities at the site.
- 8) Maintain a catalog of all publications of El Pilar research.
- 9) Identify an El Pilar archaeological motif for community arts and crafts.
- 10) Promote a contiguous park protecting cultural/natural resources of El Pilar.

Architectural conservation at El Pilar is designed to ensure the best protection and maintenance of the important monuments that shaped the site's prehistory. To this end, it is a prime concern that all excavations take place with conservation aims explicitly in the plan. The program's education agenda will ensure that research is presented and published in a clear and accessible manner not only within the anticipated scholarly venues, but also for all

interested visitors. It is important that the findings from El Pilar be used to educate the public as well as scholars.

Conservation of monuments at El Pilar is an investment in the future of the world's heritage, consequently, it is important to involve and train local people in strategies that foster their investment in El Pilar. Further, the design of appropriate conservation techniques must consider research into qualities of construction and state of building conservation. Given these parameters, and weighing environmental conditions, each individual building will be evaluated on its own terms. Examples of architectural exposures, thus, will be varied across the site. This would not only help preserve the integrity of El Pilar, but establish completely new critical standards for other archaeological projects in the Maya forest region, making El Pilar exemplary in this field.

It is imperative to promote a method and maintain a style of conservation that will insure the archaeological integrity of the monumental and residential structures at El Pilar, create a sensitive ambiance that considers the future of the monuments as well as the comfort of visitors, and presents an accurate view of the archaeology. Excavations are conducted with research questions in mind and conservation proceeds on the basis of the local conditions, recognizing that environmental stability is essential for long-term building conservation.

Exposures of the architecture and the stabilization and consolidation efforts depend on specific surroundings. Investigations and interpretation of ancient architecture are founded on research and the conservation style that encourages the imagination rather than use it. Following the ethics of the Venice Charter of the International Charter for the Conservation and Restoration of Monuments and Sites (ICOMOS), there will be no reconstruction. Careful excavation of exposures will be conserved with the most effective strategies, using appropriate techniques. Portions of structures will be left unexposed to maintain stability, to provide for a low maintenance regime, and to allow for future archaeological and conservation innovations. The conservation style is aimed to be one where exploration and discovery is developed and enhanced, in keeping with the view of the 18th century explorers of the Maya world. Luxuriant closed canopy zones along managed trails will combine with framed open areas to reveal exposures of beautiful monuments beneath the forest. In collaboration with the Department of Archaeology of Belize and conservationists in Mesoamerica, the Program will pioneer a revisionist style for presentation of monuments. This will place El Pilar in the avant garde, standing unique among the destinations of Mundo Maya, by creating a novel attraction that enhances a visitors experience as well as knowledge.

OBJECTIVES FOR THE 1997 SEASON

Introduction

The objectives of the 1997 season involved three main operations: excavations of the example Maya house, consolidation at Plaza Jobo, and rescue at Plaza Lec (Fig. 2). These essential activities were executed with the long-term research goals clearly in mind.

Excavations at the Maya house hold within the experimental polycultural garden, know as Tzunu'un (272-025), continued with the purpose of understanding the construction and occupation history of the ancient household and with the aim of consolidating the house site as a means to promote the understanding the residential sector of El Pilar. Four of the five structures surrounding the well-defined plaza courtyard were excavated, exposing the last major facets of construction and occupation. These structures each represent distinct construction styles, developments, and sequences yet were all simultaneously occupied in the Late Classic Period. The artifactual data support the essential residential function of the group.

In addition to the Tzunu'un house excavations, two example areas of the monuments of El Pilar were included in the season's work. Limited exposures of Plaza Jobo of the H'mena acropolis were stabilized and consolidated to demonstrate how complex architecture can be revealed under the forest canopy. Plaza Jobo is surrounded by a labyrinth of interconnected rooms and formal interior benches and now 3 rooms have been made accessible to the public. In the course of the consolidation, parts of an intricate mosaic was encountered that had once graced the exterior wall facade of the plaza courtyard of Jobo. The efforts of consolidation completed at Plaza Jobo in the 1997 season began to define the style for El Pilar.

The temple on Plaza Lec was the other target of conservation efforts. This temple, known as Xamanaj (EP25), had a corbel-vault in peril of collapse and had brought El Pilar to the attention of World Monuments Fund, listing El Pilar on its 100 endangered sites for 1996. The back room of three contiguous rooms was the only roofed architecture remaining of the impressive Xamanaj Temple and was in critical need of stabilization. We were able to stabilize the architecture, consolidate the principal portions of the vault, and bring the building out of danger of collapse, achieving one of the urgent conservation requisites outlined at the first Mesa Redonda El Pilar in Mexico City.

All the conservation work at El Pilar was developed in the context of a training program for local workers. This aspect of the program was managed by Conservation Director Rudy Larios and his assistant, Enrique Monterroso. Larios and Monterroso were able to develop a training system and identify skills that created a good working archaeological consolidation team. This marks the initiation of the Program's efforts to involve local villagers in the development of the site. The results were remarkable and demonstrate the majesty of the monuments of El Pilar.

El Pilar: Research and Conservation Philosophy

Belize's new El Pilar Archaeological Reserve for Maya Flora and Fauna, contains at its center the nucleus of a once-great ancient Maya city (Appendix I). In five years of ground breaking study, the mapping of El Pilar has proven it to be the largest Maya site in the Belize River area with an unique repository of natural resources that can be developed for educational and scientific purposes. The BRASS/El Pilar Program, an international multidisciplinary program, was founded with this mind.

Archaeologically, the Program promotes a philosophy of minimal impact. The mass exposure of archaeological resources and the reduction of the natural forest cover are inherently destructive and irreversible. Maintenance of large-scale archaeological exposures consumes time, talent, and money which is ultimately burdensome on resources available for long-term management. Recognizing the importance of the ecotourist economy to the development of communities of the Mundo Maya, the BRASS/El Pilar Program has determined a strategy to incorporate welfare concerns. In excavation, we work in the context of the surrounding rainforest and strive to be selective of the architectural monuments that will be left exposed. This selective process is based on research and excavation which will result in examples of different buildings with functions ranging from residential to ceremonial. These examples will be visually striking while at the same time remaining targeted for appropriate long-term protection and maintenance. By keeping the archaeological exposures focused, the project aims to promote an experience of archaeological discovery not encountered in any other Maya destination.

Visitors to El Pilar walk winding trails beneath a varied canopy and, in rounding a corner, encounter a plaster stairway here, a large vaulted structure there, and an open

labyrinth of rooms beyond. In addition to the consideration of long-term conservation and maintenance of the precious archaeological resources, this philosophy lends itself well to small group instruction and education. Such a design emphasizes the more personal experience of exploration which is contrasted to large open expanses filled with many concurrent visiting groups. Finally, the support and shade of the forest canopy creates a stable environment for the ancient monuments and a more comfortable way for visitors to enjoy the site.

To begin to characterize this philosophy, the 1997 season aimed at both excavation and consolidation. Excavation began at El Pilar on May 5 and continued until June 22, 1997 and the consolidation began on May 14 and continued until July 10. Field activities at El Pilar were managed by the Field Director, D. Clark Wernecke. The residential unit excavations at Tzunu'un were supervised by the Asst. Field Director, Melissa Grzybowski. Conservation efforts were under the direction of the Conservation Director Rudy Larios and Enrique Monterroso. The culmination of the season's work provides a basis for appreciating the BRASS/El Pilar program philosophy. These successes of the 1997 season at El Pilar resulted in great strides towards our objectives at El Pilar, demonstrating its importance among the centers of the Mundo Maya.

EXCAVATIONS IN 1997

Excavation Methodology

The archaeological field procedures of the BRASS/El Pilar Program have been consistently developed and standardized for comparability throughout the course of the project from the survey and test excavations of the 1980's, the broad-scale residential excavations from 1990-92, and now to the detailed examination of El Pilar. Excavations were conducted by stratigraphic levels, using a modified version of the Harris matrix adapted for the program. Collections were all screened through mesh to maintain volumetric controls for both contexts of construction fill and middens. Half-inch screen was routinely employed for collapse and general fill deposits. Activity areas, suspected midden areas, and special features were treated specifically with smaller mesh screens or completely collected for laboratory sorting and flotation. All collections were processed in the field laboratory and cataloged in a lot number system by major artifact classes (ceramic, lithics, shell etc.). These data were input and stored in computer data files for analyses.

Field excavations followed natural cultural stratigraphic levels and records were maintained by cultural strata. Excavations proceeded with hand tools (shovel, pick, pick-a-hoe, trowel, and scoops), except where areas demanded a finer touch (Fig Field kit). All ceramics and lithics larger than 2 cm were collected in the field from screens for later analysis. All bone, obsidian, shell, and other unusual artifacts were kept as well as any organic samples in quantities sufficient for C14 dating. Strata were identified visually and defined in terms of soil type (i.e., sandy loam, etc. from the PCA, Portland Cement Association, Soil Primer), dry soil color (with a Munsell Soil Color Chart), and the size generally of limestone and chert, type, and percentage of inclusions (range from boulders, cobbles, gravel and pebbles).

In preparation for consolidation, excavation of collapse and/or earth disturbed by looters was sometimes necessary. This was handled in a different fashion from the formal excavations. Natural stratigraphic levels were followed and the excavations were accomplished with the traditional hand tools. The excavated materials from these disturbed

contexts, however, were visually reviewed for artifacts rather than mesh screened. The collections were processed in the lab, recording the distinction of collection technique.

Tzunu'un : An Example Maya House at El Pilar

The excavations conducted during the 1997 field season at Tzunu'un (272-025) were a continuation of the research plan initiated in 1996 designed to understand the nature of households at El Pilar. The Tzunu'un group was originally mapped in 1984 during the regional BRASS survey and was selected among four randomly sampled residential units of units of the testing phase. This residential unit is one of two designated at El Pilar for full-scale excavation and will complete an excavation sample of 10 residential units that will help characterize households in the Belize River Area.

The 1996 excavations at Tzunu'un focused on identifying activity areas around the group and defining the dimensions of the two larger mounds of the Tzunu'un group, Str. 1 and Str. 2. The objectives of the 1997 season were to begin to the arduous task to expose the structures of the courtyard plaza to interpret the construction history, identify function, and determine the overall plan. To accomplish this, the main goal was to identify the form and features of the structures of the Tzunu'un group. By determining how each of the structures was constructed and utilized, we will be able to begin to illustrate residential patterns of the El Pilar area. Excavations began with the largest and most complex structure, Str. 1, originally delimited in 1996. In addition, three other structures were exposed. These include Str. 3, Str. 4 and Str. 5. Excavation of Str. 2 was reserved for another season (Fig. Composite excavation).

The Structures of Tzunu'un

The Main Structure - Structure 1: The southern limits of the Tzunu'un courtyard plaza is prominently defined by Str. 1. This structure was found to have been a limestone block masonry building (Fig. 3, note Appendix II for Excavation Key). The building had at least five rooms defined in its latest incarnation, two in the north and three in the south separated by a central supporting spine wall. The general preservation of the walls of Str. 1 is good and will be able to be consolidated as an example of the more complex architecture of ancient Maya households. In the 1996 season, the four exterior walls of Str. 1 were delimited then backfilled to conserve the architecture. In May of 1997, at the onset of the season the outer walls of Str. 1 were re-excavated, exposed, and the full excavation of the interior commenced.

While excavations were underway, a consolidation crew worked on stabilizing damage done by looters in the southwestern portion of the building. The stabilization proceeded under the supervision of Rudy Larios. A large looter's hole had penetrated through the southwest corner walls, and into a layer of clean cobble fill located below a rear plaster floor [(FL)1-11]. The conservators used a mixture of limestone and chert cobbles, limestone marl, and hydrated lime to fill in the hole and support the undermined floor of the building. This exercise stabilized the ancient structure at the same time initiated the training program with building consolidation at El Pilar.

The excavation of Str. 1 began on the front and southeastern side of the mound. The jambs of the main entrance were identified and excavation around the south wall commenced. Upon clearing the door jamb, we exposed the front wall [(WL)1-24]. Excavations followed the interior of this wall, on the eastern side of the jamb, identifying an intact

plaster floor [(FL)1-34]. There were two main stratigraphic levels that were found within the structure: humus [1-01] and collapse [1-10]. As Str 1 was excavated following the walls and defining floors as they were encountered.

Approximately 80 cm east of the inside of the eastern jamb within the front and north wall [(WL)1-24], a small limestone block wall [(WL)1-33] was encountered. This wall retained a layer of clean limestone cobble fill [1-35], evidently part of a destroyed bench. As this fill was removed an earlier limestone and plaster bench was identified [(FL)1-37]. This bench incorporated the southern half of the front room of Str. 1, enclosed between three walls [(WL)1-30, (WL)1-40, and (WL)1-33]. Encountered in fair condition, the northwestern corner of the bench was damaged and the plaster of that portion was poorly preserved.

As the area to the south of the plaster bench [(FL) 1-37] was cleaned a fragmentary human skeleton in very poor condition was revealed [(BU)1-38]. The limestone-marl matrix surrounding the skeleton left the bones in very fragile state of preservation and the locus of the bones was difficult to define. Because the skeletal remains were scattered in an indistinguishable fashion, the deposit was determined to be secondary in nature. There were no clear artifacts associated with the deposit and no determination of the age or sex was attempted due to the condition of the remains. Below the level of the bench [(FL)1-37] there was another well preserved plaster floor [(FL)1-47].

Immediately opposite the eastern bench and floor, west of the main front doorway of the entry room, was another plaster bench, [(FL)1-32]. This bench, in excellent condition, filled the entire width of the northern room of Str. 1. It is bounded on the west side by a wall [(WL)1-44]. A small doorway was identified in this wall leading further west to a small northwestern room of Str. 1.

This small northwestern room was bounded by walls on three sides: on the north [(WL)1-24], on the east [(WL)1-44] and on the south [(WL)1-25]. The north and west wall [(WL)1-27] has almost completely collapsed and, aside from the rubble zone of on the western side of the building, there are only three blocks left in line. A feature of this room is a sealed doorway located in the southern wall that once allowed entrance into the southwestern room behind the central spine wall [(WL) 1-25]. Excavation into the southwest room revealed a limestone plaster bench [(FL)1-21], 20 cm higher than the room floor [(FL)1-11].

Once the floor of the main entry room of Str. 1 had been cleared humus and collapse a doorway was located in the spine wall accessing the southern back rooms of Str. 1 up a single, 50cm step up. This step leads into a room with a plastered floor [(FL)1-17] which extends to the west where it was destroyed by looters. On the east side of this room, there was a plaster bench [(FL)1-41] in good condition. This bench was bounded by three walls [(WL)1-31, (WL)1-40, and (WL)1-43], the last wall of which is contiguous with another small room on the southeast of Str. 1

The southeast room was delimited on the south by wall [(WL)1-40] and west by wall [(WL)1-43], and surrounds a limestone plaster floor [(FL)1-46]. This floor was protected in the south, adjacent to the central spine wall [(WL)1-40], but was completely collapsed on the southern edge of the room. Curiously, no obvious doorways were identified in the existing walls and given the ephemeral quality of the south wall [(WL)1-31] and east wall [(WL)1-30], it is difficult to verify how this room was accessed. An examination of the foundations and floor suggests that a doorway may have been located directly to the south.

In summary, Str. 1 of the Tzunu'un group was a complex and imposing building defined by a structure two tiers wide and divided into five rooms. Situated on the south

edge of a plaza, its base is about one meter above the plaza level. Excavation revealed that the building evolved with incremental interior modifications to attain its final floor plan (Fig. 5). The artifacts recovered from Str. 1 included obsidian prismatic blades, a decorated spindle whorl, utilitarian and decorated ceramic sherds, parts of manos and metates, chert bifaces, as well as chert flakes and other lithic debris. The array is in keeping with materials associated with residential architecture.



Figure 5: Str. 1 Schematic Plan



Structures of the North and West: Three structures on the north and west — Str. 3, Str. 4 and Str. 5 — were originally recognized on the plaza level and likely supported perishable superstructures. Str. 3 and Str. 4 are located on the northern side and Str. 5 is located on the west side of the courtyard. All three structures were excavated by superimposing a 2 x 2 meter grid over each mound area for three dimensional control of excavation exposures, artifact placement, and feature concentrations. The humus layer was removed from all of the surfaces of each structure to reveal the collapse of the last phase of construction. Once the exposures were recorded and mapped, walls were traced and floors identified. Each structure revealed its own distinct style. Thus, while all three structures must have been contemporaneous at some points in the Late Classic Period, each construction style was unique formally and undoubtedly functionally. The analysis of the artifacts will help to define the functions of these structures.

Structure 3: Directly north of the imposing Str 1 is Str. 3, a low construction defining the plaza edge and distinguishable as a c. 60 cm mound above the plaza level (Fig. 6). Excavations began with the removal of the humus layer [3-01]. Directly underlying the humus layer were the remains of a plaster floor [(FL)3-02]. This floor was in good condition, considering its proximity to the surface. To the south, however, the floor preservation

deteriorated as it approached a limestone block wall [(WL)3-03] that demarked the front of the structure. Outside and contiguous to this south wall [(WL) 3-03] was another plaster floor [(FL)3-04]. This floor was encountered in relatively poor condition, was at a lower level than the interior floor, and may represent the courtyard plaza surface.

Excavations of the 2 x 2 meter grid proceeded from west to east. In the center of Str. 3, a deposit of nine human teeth [(BU)3-05] was located beneath several large unshaped limestone rocks. It is not known if the deposit represents one individual or several; there was little evidence of wear on all the teeth and no artifacts associated with the deposit. To the east below the deteriorated interior floor surface [(FL) 3-02] a compressed limestone cobble and gravel fill [3-07] was revealed and interpreted as a subfloor. This fill [3-07] disintegrates into a rough, uneven edge on the far east and north side of the structure.

On the north edge of Str. 3, underlying the humus and fill layer, was another well preserved plaster floor [(FL) 3-09]. This floor [(FL) 3-09] represents an earlier construction phase, as it is 65 cm below the surface floor [(FL) 3-04]. This floor may be part of an earlier structure or related to an early phase of the plaza construction. The excavated remains of Str. 3, with the intact interior plaster floor, supports an interpretation of a perishable superstructure enclosing a living area.

All of the artifacts recovered from Str. 3 are consistent with its use in residential activities. Collections include utilitarian ceramic sherds, mano and metate parts, several fragments of obsidian prismatic blades, chert and other debris. There were also three pieces of sculpted plaster encountered in the humus layer on the north side of Str. 3; two pieces had traces of red paint. While it is unlikely that a perishable structure would have

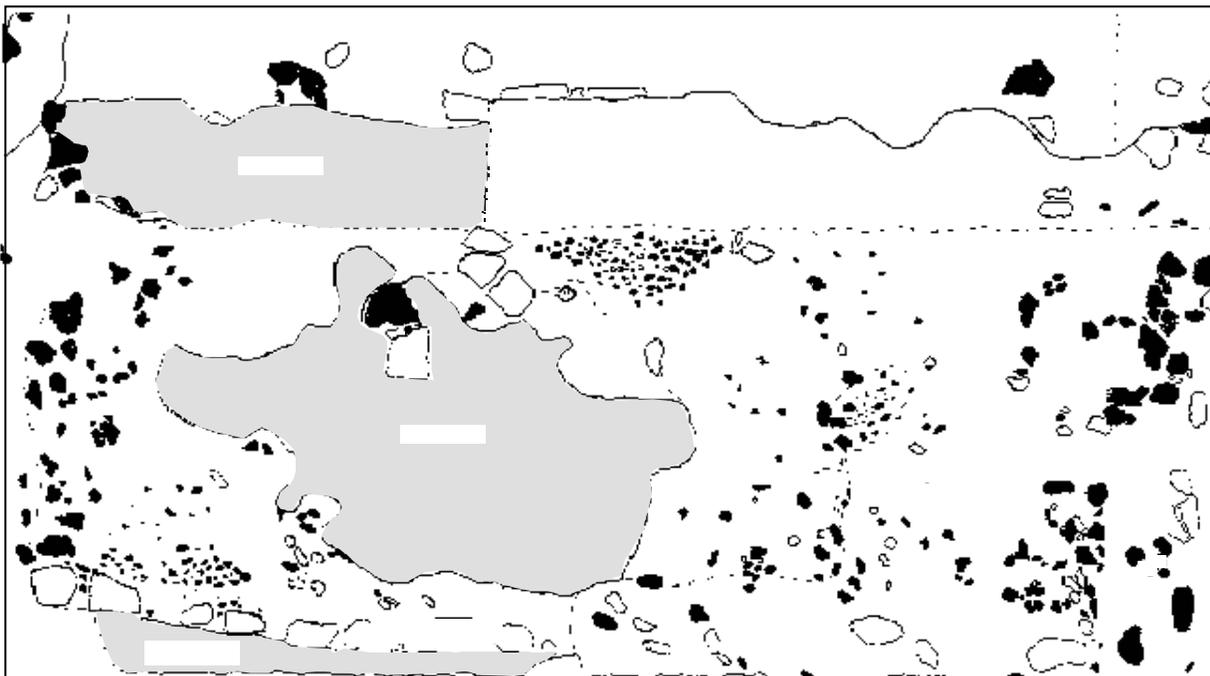


Figure 6: Str. 3 Excavation Plan



been decorated with painted stucco, this is a possibility. On the other hand, the stucco pieces may have been part of another structure in this compound, such as the more imposing Str. 1 or the neighboring and unexcavated Str. 2.

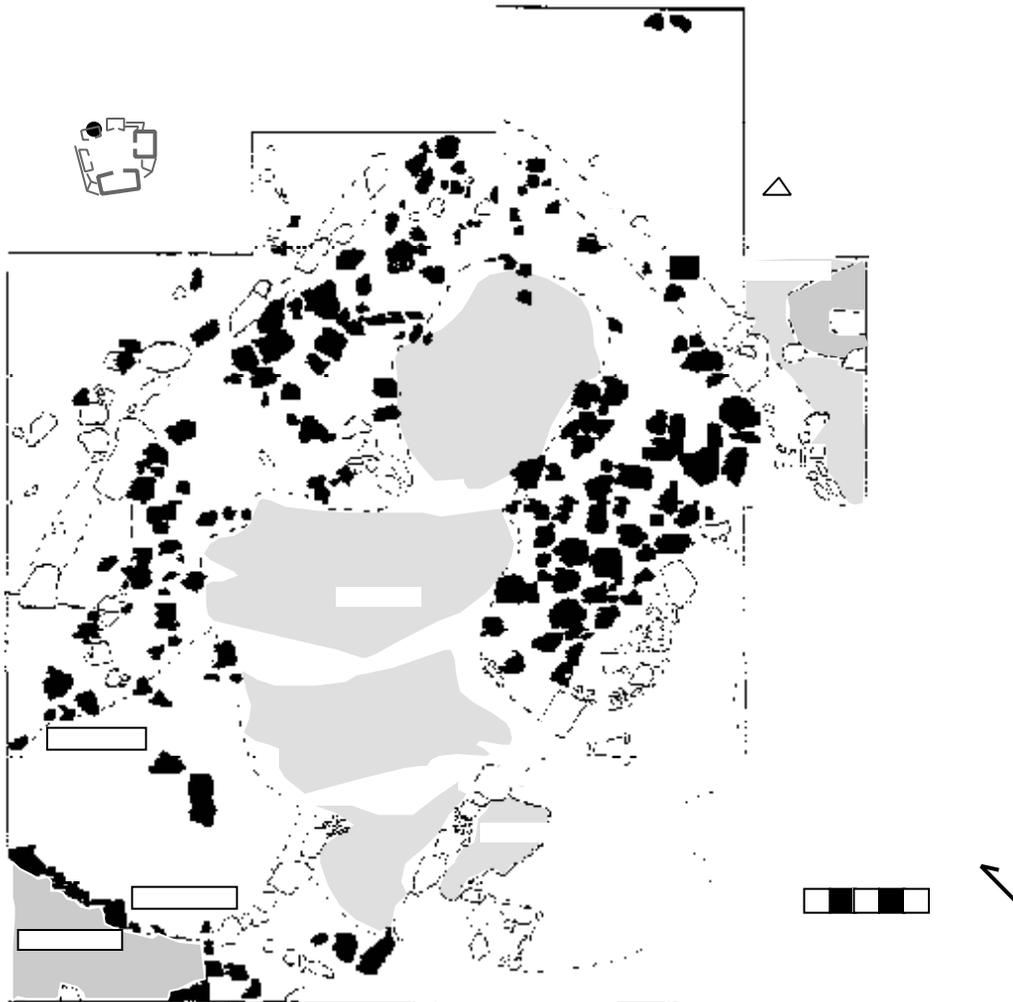


Figure 7: Str. 4 Excavation Plan

Structure 4: Continuing around the raised courtyard to the west is Str 4. This structure is a distinct mound situated on the northwestern corner of the plaza (Fig. 7). As the excavations removed the humus layer [4-01], the first noticeable feature was the unusual distribution of chert cobbles and boulders. The presence of this chert feature was deemed relevant to the construction and was left in situ. It became apparent that these chert boulders were located in the interior and eastern portion of the building and represented a diagnostic aspect of Str. 4.

Excavation in the western side of the mound revealed a portion of a deteriorated plaster floor [(FL)4-02]. The floor was in poor condition and only small parts of it remained intact. Exposures also uncovered the structure's walls. The south wall [(WL)4-03], east wall [(WL)4-07], and north wall [(WL)4-08] were made of uniformly shaped limestone blocks that probably served as a foundation for perishable walls. The large trees growing on the western side of the mound may, in part, account for the scant evidence of the west wall of this building.

In the southeastern corner and outside the bounds of the defined structure walls, a plaster floor [(FL)4-05] was encountered. This is most likely related to a version of the plaza courtyard. It is, however, 24 cm below the level of the plaza floor [(FL)3-04] discovered in front Str. 3, and 42 cm above the north and rear floor of Str. 3 [(FL) 3-09]. This indicates a sequence of at least four construction phases in this area of the Tzunu'un group.

The artifacts recovered from Str. 4 consisted of a large quantity of utilitarian ceramic sherds and lithic debitage. Several pieces of groundstone (mano fragments, metate pieces, and a bark beater) and a modified chert boulder with an incised line around the middle were also recovered. Few obsidian artifacts were found. This assemblage represents a more basic collection than those of Str. 1 and Str. 3.

Structure 5: Originally identified as a low rubble mound, Str. 5 was situated on the westernmost extent of the plaza, forming the western boundary of the residential compound (Fig. 8). The humus [5-01] was stripped off sections of the north half of the mound only, leaving the southern portion unexcavated and in profile.

In the very beginning of the investigation, a burial [(BU)5-02] was located near the center of the mound, immediately below the humus. Excavation of the burial revealed an adult skeleton (possibly female) positioned face up, but flexed with the head to the south. This interment was located adjacent to the east and inside of a wall [(WL)5-06]. The soil matrix around the individual included a large number of ceramic sherds and lithic debitage and was retained for later flotation analysis.

The skeletal preservation was poor, consisting mainly of portions of long bones, several teeth, fragments of mandible, and small bits of the cranium (Fig. 9). Burial goods included one complete miniature jar, 287 small marine olive shells with irregularly drilled

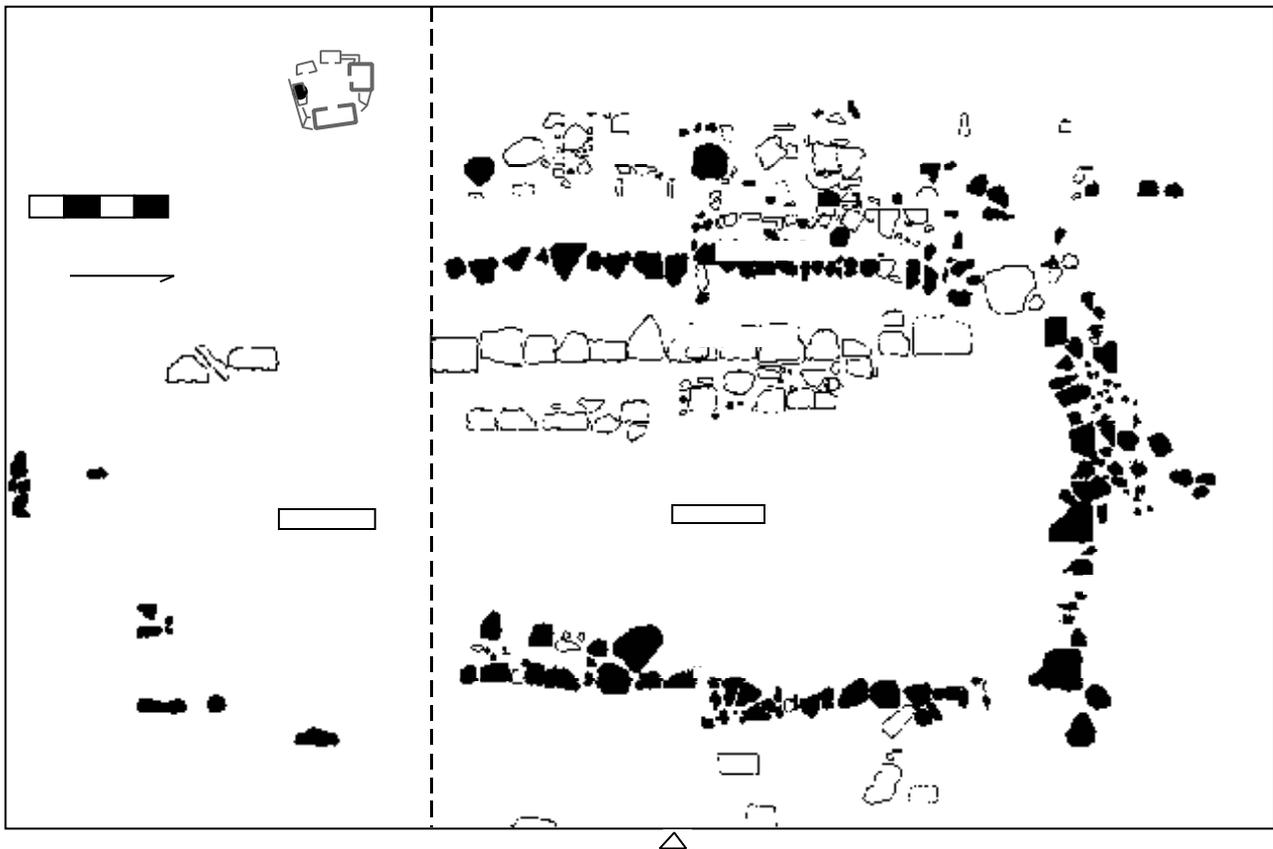


Figure 8: Str. 5 Excavation Plan

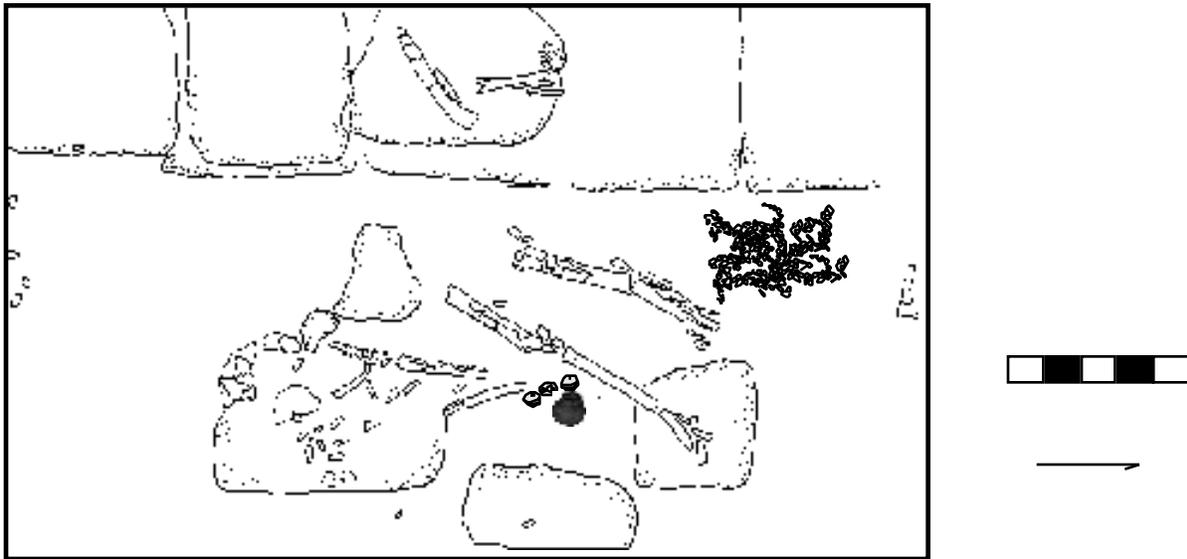


Figure 9: Str. 5 Burial Plan

holes, and three decorated limestone spindle whorls (Fig. 10). The shells were located on the northwestern side of the skeleton and were possibly attached to a garment or cloth, while the jar and spindle whorls were deposited on the northeastern side.

After this burial was removed, we were able to delimit the extent of the northern portion of Str. 5. As with Str. 3 and Str. 4, stone foundations were encountered that defined the structure boundaries and suggest the existence of a perishable superstructure. The east and north limits of the building were marked by chert cobble walls [(WL)5-05 and (WL)5-08] that ran north-south and east-west, respectively. The western limit was defined by a north-south limestone block wall [(WL)5-06]. A thick (c. 50cm) limestone/chert gravel fill with very little soil [5-04] was defined as a subfloor between the east wall [(WL)5-05] and the west wall [(WL)5-06]. This fill contained a very high quantity of size sorted ceramic sherds and chert debitage. Several pieces of obsidian prismatic blades were also recovered from this fill. On the far west side of Str. 5, an outer north-south chert cobble wall [(WL) 5-07] was encountered that appears to be a retaining or platform wall for the building and plaza.

The overall formal quality of the construction of Str. 5 with the walls, the evidence of the tamped floor fill, and the interment all suggest the domestic nature of this structure. The artifacts encountered in Str. 5 are consistent with general domestic use and includes ceramic sherds, lithic debitage, pieces of ground stone.



Figure 10: Str. 5 Artifacts Associated with Burial

Plaza Jobo — Exposing a Labyrinth of Structures

Plaza Jobo is a relatively small enclosed plaza located in the southwest corner of the H'mena, the highest elevation of civic-ceremonial monuments at El Pilar. Excavations in the northwest corner of Plaza Jobo in 1996, in and around structure EP22W, revealed well-preserved constructions along the west end of the plaza, defined as EP53, as well as a substantial plaster floor that runs continuously across the 3 exposed rooms of two numbered structures (EP22 and EP53) enclosing the northwest corner of the plaza (Fig. 11).

Excavations at Plaza Jobo were guided by the issues of conservation. One of the concerns of the conservators working on the architecture exposed in Plaza Jobo in 1996 was in regards to drainage. Open for public viewing, the plaster floor would cause rainfall to accumulate within the west structure (EP53), subjecting it to damage. The most expedient method of handling this problem was to determine how the ancient Maya drained the



Figure 11: Room Plan in North West Section of Plaza Jobo

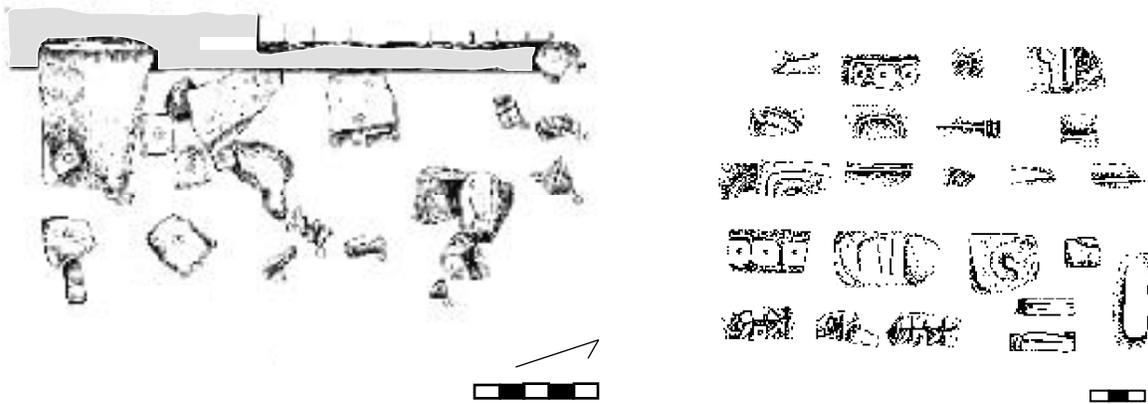


Figure 12: Limestone Sculpture Mosaic form Plaza Jobo Plan and Pieces (INAH)

plaza and assess the possibility of reconstructing the system. With this in mind a trench, 1 x 8 meters, was excavated along the east-west axis of Plaza Jobo beginning in front of EP53, adjacent to a supporting pier [(WL)22-13] of the structure. The purpose of this excavation was to expose a large section of the plaza floor and determine the direction of drainage. The ultimate object was to follow any identified slope to the Maya “storm drains.”

The excavation successfully exposed a large section of plaza floor, although the plaster surface was badly deteriorated toward the center of the plaza. From this exposure, it was clear that the slope of the plaza was to the north, towards Plaza Manax and probably beyond, off the H'mena complex to the north. The slope of the plaza suggests that the drainage flows through a suspected pass-through in structure EP22. Rehabilitating this drain system will involve substantial effort and will need to be carefully evaluated with alternatives.

The other excavations in Plaza Jobo revealed qualities that clearly relate to the overall style of architecture at El Pilar. Excavation in front of EP53 uncovered a quantity of stone sculpture, evidently from a mosaic facade that fell off the walls exposed to the courtyard of Plaza Jobo. Elements of a repeating geometrical design, curving frets, a portion of a possible monster mouth, and a damaged sculpted human head were found (Fig.12a, 12b).

Present excavations have recovered more than 50 mosaic pieces associated with the piers. Full excavation of the plaza will provide a more comprehensive recovery of the remaining pieces and could lead to the restoration of this mosaic of Plaza Jobo. These mosaic carvings are complex in the central lowland Maya area; nothing of this nature is known from Tikal and, while the El Pilar mosaics are carved of local limestone, they are reminiscent of facades at Copan (Larios P.C.). Judging from the elements and their position in the collapse, there may be a mosaic composing a monster mask on the two piers [(WL)22-16 and (WL)22-13] that form the front wall of EP53, and human heads may have been in the mouths of the monsters. The recovery of one sculpture of the head supports this proposition. Interestingly, this head is a tenoned limestone sculpture of a Maya face damaged, yet similar to the one found in 1994 in the looters' trench debris on the west side of pyramid EP20 above and to the west of EP53. This may have been a reoccurring architectural theme of the H'mena.

Plaza Lec — The Majesty of the Xamanaj Temple

The Xamanaj Temple (EP25) was first identified in 1984 as the northernmost monument at El Pilar. In 1994, initial examination began with 1) a profile the existing axial looters trench, 2) two small excavation units (EP25NWQ, EP25SWQ) identifying the northwest and southwest corners, as well as 3) a unit located just to the south of the looters' trench (EP25CTR) on the mound itself. These excavations revealed the well-preserved architecture of the Xamanaj Temple. By 1994 it was evident that this important northernmost monument of El Pilar had only portions of walls and a very unstable standing corbel-vaulted room, originally intact when first mapped in 1984. This room was in imminent danger of collapse due to the damage inflicted on the structure by the looters.

During the 1995 season, the vaulted room of EP25 was carefully examined by Assistant Director Miguel Orrego and Conservation Director Rudy Larios. Based on the precarious condition of building, scaffolding supports were built to brace the standing structural elements of the vault and a thatch roof placed as interim protection for the ancient building. A plan for the stabilizing the arch of structure EP25 was drawn up and was determined to be an important objective at the 1997 Mexico City Mesa Redonda. Thus, the vault

itself was the focus of this year's rescue mission, one that included excavation related to the conservation efforts.

Excavation began with the clearing of the axial looters' trench (Fig. 13). This excavation exposed an excellent plaster floor on the platform of the structure as well as two well-preserved plaster steps between the two front rooms located west of the vaulted room. A 7 x 11 meter trench extension was designed to examine the condition of the front steps of the structure and their contact with Plaza Lec. The excavation quickly revealed the plaster and the gravel ballast of Plaza Lec as well as what has been determined to be the stone and lime cement base for part of the EP25 steps. A small 1 x 1 meter probe to the south of the looters' trench at the location of the interior steps uncovered the door jamb between the front and middle rooms of the temple. The facade includes a substantial battered basal wall [(WL)25-21] adjacent to the interior step.

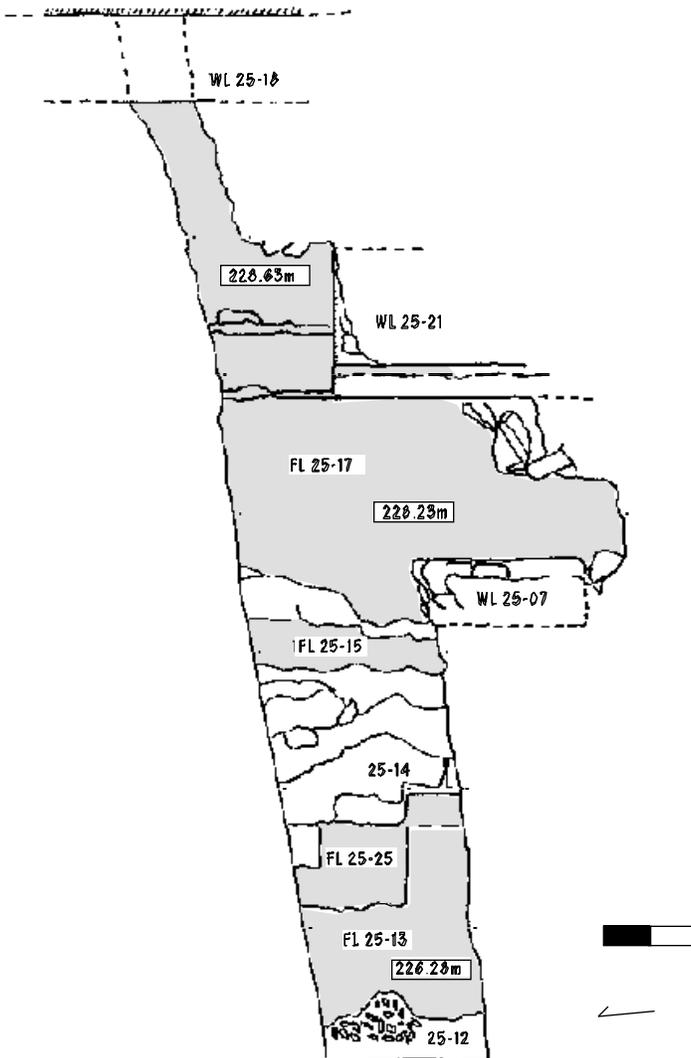


Figure 13: Xamanaj Temple Excavation Plan

Further excavation to the west, down the stairs, connected this probe with the earlier excavation EP25CTR and a possible jamb of the door in the front wall of EP25.

From these excavations associated with the looters trench, EP25 was evidently originally constructed as a two-room vaulted structure facing west with a large outer wall and a battered basal molding [(WL)25-21]. At a later point in time, after a burning event on the platform which left a layer of ash and debris [25-24] within the original front door jamb (between the middle and front rooms), the steps were covered over by a layer of well-packed limestone marl [25-23]. This appears to convert the two steps of the interior building platform into a ramp.

The west wall [(WL)25-01], defining a third, outer or front room was part of an addition to the west and was built with stonework inferior to that of the original two-room structure. The collapse debris between the facade of the original structure [(WL)25-21] and this final west wall [(WL)25-01] show that this space was once vaulted as well. The final west wall was built on the edge of the temple platform which has badly deteriorated and much of its western face has collapsed down the front of the structure. The information gathered to date makes it difficult to say whether or not there was a central doorway in this west wall or if the gap is the result of the looters who simply smashed through the wall area with their trench. It is clear, however, that the latest composition of the temple had three rooms accessed by a stair on the west, facing on to Plaza Lec.

CONSOLIDATION IN 1997

Introduction

Structures left exposed by the El Pilar Program for ecotourism and educational purposes are professionally consolidated as required by law and international convention. The Program adheres to the international agreements regarding archaeological consolidation and promotes the statement that “consolidation stops where the imagination begins” as put forth in the ICOMOS Venice Charter Article 9. Consolidation relies on that which had been found; if the excavation documented two courses of facing stones in a wall, that is all that would be represented in the final consolidated wall face.

Consolidation work at El Pilar began under the direction of Rudy Larios and his assistant Enrique Monterroso. Rudy Larios is an eminent conservation archaeologist who has achieved world stature based on his decades of experience with archaeological monuments and conservation in the Maya area. He began at Tikal and his architectural background aided in charting his trajectory of innovative conservation strategies. Working with the Government of Guatemala, he directed the Proyecto Tikal for fifteen years. Joining the Copan project, with World Bank backing, his experience from Tikal was developed at the monuments of Copan. In recent years, he has completed work on the stucco conservation at Xunantunich. Now, drawing on his extensive experience in the Maya area, Rudy Larios is employing innovative techniques at El Pilar to create a new conservation standard for ancient Maya architecture.

Enrique Monterroso has worked in excavation and monument consolidation in both Guatemala and Honduras. His intimate knowledge of the building technologies and materials began in the mid-fifties at Tikal. He has worked with Rudy Larios on the Proyecto Tikal, at Mundo Perdido, several years at Copan, and at Abaj Takalik under Miguel Orrego. His hands-on experience and talent with people make him an excellent site trainer and the Belizean team benefit immensely from his ability to transfer knowledge and enthusiasm.

Among those trained in the ancient Maya construction techniques during the 1997 season were: Ciriaco Medina, Mario Rivas, Eddie Sanchez, Jairo Diaz and Jaime Lamb.

Consolidation Methodology

Standards: Consolidation work at El Pilar is designed and implemented as a standard methodology (Appendix III). After excavation is completed, detailed map plans, sections and drawings are compiled and a comprehensive set of photos are taken. In addition, Polaroid photos are used as work is in progress.

The preparation process requires the loose mortar be removed from all construction components. The tops of walls are excavated to the point at which the mortar or cement is found to be structurally sound. Original loose stones are carefully removed and numbered, and unconsolidated materials removed completely. The walls and other constructions are then rebuilt to the original excavated height with new mortar, stone by stone. Where walls are stable, softened mortar and loose chinking in wall surfaces are carefully scraped out and the blocks repointed by replacing the mortar between the facing stones. Stones which have disintegrated *in situ*, but are easily discernible, are removed and replaced with new stone cut to the same size and shape. The result is a stable product that provides a sense of the architecture without imparting imaginative elements that may not have been part of the original construction.

Materials: Four different mixtures of mortar are used in the consolidation process. Each mixture is composed to handle specific consolidation problems from structural stabilization to visibility. Also considered is protection of the stuccos on walls and floors.

The first is a mixture of hydrated lime and sifted limestone marl in one to three proportions with approximately 5% cement added. This mixture is used where structural strength is very important, as in corbelled stones, but where the mortar will be visible. The mixture is also used for capping off exposed walls and other horizontal surfaces.

The second mixture is one part of lime and three parts sifted marl, duplicating the mortar originally used by the Maya for the stone work. This mixture is used for the general repointing work and for the interior fill of walls. A diluted solution of this mixture can be injected in cracks.

A third mixture was composed of three parts window-screened limestone marl to one part hydrated lime. This mix was used as glue for peeling stucco on the walls and was also used to feather the edges of the exposed stucco fragments to protect them from the elements.

The fourth and last mortar mix used was of one part window-screened limestone marl, two parts of clean sand, to one part of hydrated lime. In a very liquid form, this mortar was used to fill cracks in the stucco.

Commercially hydrated lime and Portland Cement were purchased while the marl was screened on site from loads delivered courtesy of the Cayo Works Department. In all cases the consolidation crews attempted, whenever possible, to stay as close to the original Maya construction materials as possible. The use of Portland Cement, for example, was avoided except for those areas where wall strength and critical long-term maintenance was a concern. Local supplies of marl and stone were utilized in all the operations. Original stones were reused whenever feasible and old stones from the excavation rock cribs were used in preference to new ones.

The tools employed in the consolidation process were very simple and some were specifically designed by Rudy Larios. Small hooked scrapers are used to remove old lime and pointing trowels and special pointing tools were used to replace the mortar. Large mason trowels were essential to build up the interior of walls. Hatchets were employed to shape new stones and all limestone marl was screened utilizing a 1/4" mesh.

Figure 14: Plaster Bench of EP 22

Walls and Doors at Plaza Jobo



Figure 15: Plaza Jobo During Excavation

Structure EP22W, the northern most of the structures unearthed at Plaza Jobo, was the first to be tackled by the consolidation crew. This room is part of a range building that encloses the north side of Plaza Jobo. The structure was in relatively good overall condition, with all four walls standing to above the spring of the vault. A well-preserved L-shaped plaster bench [(FL)22-05] occupies much of the interior room (Fig. 14). The south wall of the structure had a central vaulted doorway which was left filled with collapse at the end of

Excavations at Plaza Jobo revealed extensive well-preserved sections of once vaulted rooms. These rooms were originally excavated in 1996 and covered by a protective roof until the proper equipment and personnel could be brought in for consolidation. At the beginning of the 1997 season, this temporary roof was removed and the process of consolidation began under the direct supervision of Rudy Larios. The goal was to leave the structures of Plaza Jobo open to visitors without jeopardizing their stability and integrity.

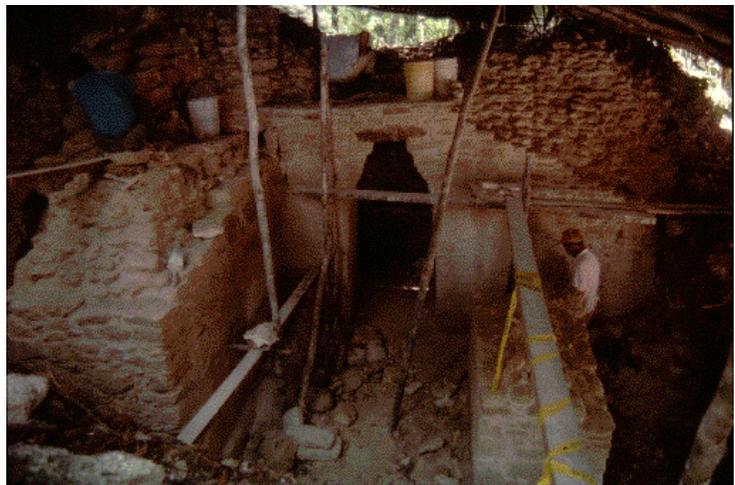


Figure 16: Plaza Jobo During Consolidation

the 1996 season to maintain the stones and vault in place (Fig. 15). The conservators carefully repointed these walls [(WL)22-08, (WL)22-04, (WL)22-09] before excavating the central doorway and rebuilding the doorway (Fig. 16).

This laborious process rescued one original capstone in situ. The degraded remains of the other two capstones were replaced with suitable matching stones. By the completion of the field season this door, closed for some thousand years, was once again open (Fig. 17).

On the west end of Plaza Jobo is EP53, a structure also un-earthed in the 1996 season. This structure is a two room, vaulted building with a large well-preserved bench [(FL)22-18] in the back.

The structure appears to have formed the lower platform of the pyramid EP20, which is situated behind it and to the west (Fig. 18).

The walls of this structure EP53, were not in very good shape and stood to less than two meters in height. The northern front pier [(WL)22-13] was repointed and the interior solidified with new lime cement. The center wall, [(WL)22-12]/[(WL)22-23] was taken down to a firm core and rebuilt to the height found at excavation. The entire face was repointed. The rear wall [(WL)22-19] was also repointed.

The north wall of the back room of EP53 [(WL)22-22] posed the greatest difficulties to the work in this area. This wall has a central vaulted doorway in very poor condition. The vault stones could be clearly seen in profile but slid from their original positions making the stabilization of this door difficult and slow. In addition, there was a tremendous buildup of collapse debris from

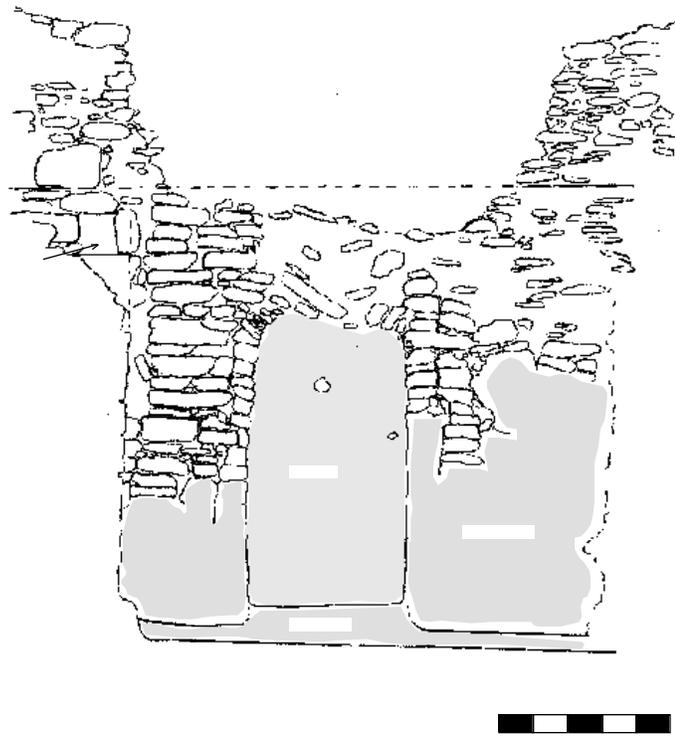


Figure 17: Wall Profile in Plaza Jobo

Figure 18: Interpretation of Plaza Jobo Rooms



the pyramid EP20 overhead that must be excavated down to the collapsed vault to effectively consolidate the walls of this area. The jambs of this door were found in good condition and it was possible, through careful excavation and removal, to initiate the consolidation of this vaulted door. This season's work only stabilized the opening. Further excavation will need to be done to consolidate the entire doorway and the wall.

It should be noted that both structures EP22W and EP53 retained a large amount of intact wall plaster. This plaster was carefully protected with a thin coat of new material, feathering the edges of the original plaster remains to prevent further water damage. The cord holder (a ceramic jar neck), found in the central doorway of structure EP53 leading into the back room, was returned to its socket and recemented in place.

An awning roof was built to protect the whole area above the back wall of EP53. This was designed to protect the overburden of EP20 from erosion during the rainy season. Future plans call for the excavation of the passage through the range building EP22 to facilitate visitor access, to improve drainage patterns away from Plaza Jobo, and to recover and conserve any remains of the mosaic facade decoration. This excavation would also establish better visitor access and facilitate long-term maintenance of the structures of Plaza Jobo.

Xamanaj Temple at Plaza Lec — The Corbel Arch

The consolidation of the Xamanaj Temple is based on the excavation of EP25 that revealed a three room corbel vaulted temple building representing the northern most extension of the monumental site core of El Pilar (Fig. 19). Facing the open Plaza Lec, the two front rooms have long since collapsed, but the third, rear room retained a large section of vaulted ceiling intact. Unfortunately, looters had entered this room through the center of a vault wall and had greatly weakened the structure as well as exposed a large portion of the building to the debilitating effects of the weather. While a part of this third vault had recently collapsed, a large portion remained precariously in place. The object was to stabilize this vault.

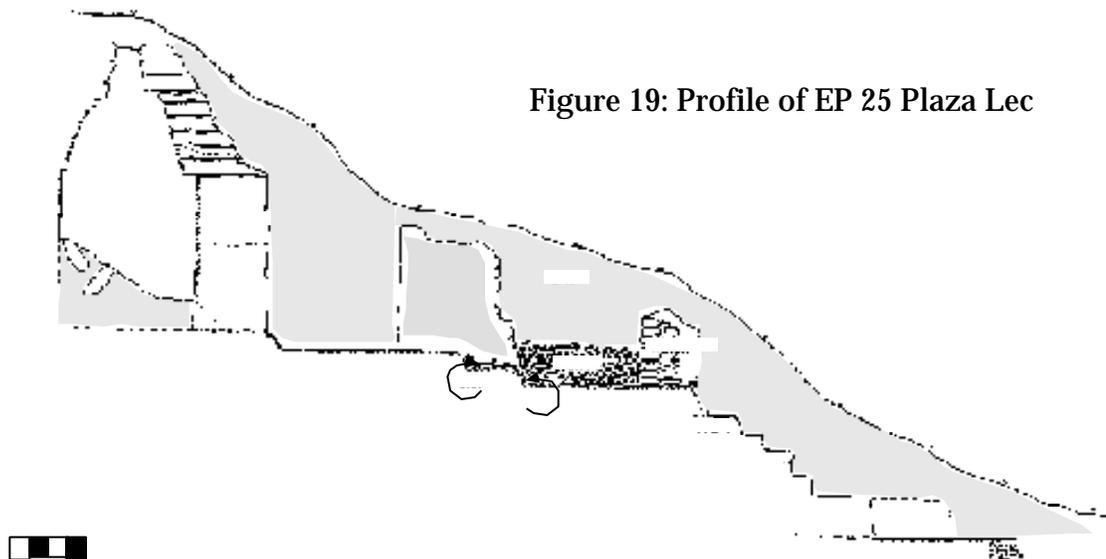


Figure 19: Profile of EP 25 Plaza Lec

A 4 x 3 meter area, just to the south of the looters trench and adjacent to the western wall of the rear room, was carefully cleared of humus to expose the remaining vault stones *in situ*. Most of the roof and upper core had deteriorated down to the vault core leaving vault stones and portions of the vault mass exposed on the sides. This exposure revealed a finished plaster construction sealing surface above the vault. Roof debris were cleared to the capstones so that a careful consolidation assessment could be made.

At this point a number of the capstones were carefully removed and set aside and a portion of the wall most affected by the looters was disassembled. Many of the stones, though found *in situ*, were badly damaged and suitably sized replacements were found as substitutes. The stones at the wall top that formed the spring of the arch, for instance, were found to be massive stones approximately 80 cm wide, 40 cm thick and almost 1.5 meters long. Each exposed vault spring stone revealed structural problems. Most were cracked down the middle from the enormous stresses placed on them by the vault mass and roof weight. To date we have not located a large supply of suitable new stone this size, consequently two stones were used in place of the original single one.

The walls were cleaned and pointed where necessary and, starting at the top, the stones forming the vault were carefully cemented in place. New vault beams were cemented into the old sockets to assist in the consolidation process and to help hold the new masonry in place. The work proceeded in an orderly fashion, beginning near the center of the building, adjacent to the looters holes and proceeding southward. The south end of the structure is open and easy to work with and the result was the stabilization of the vault collapse (Fig. 20).

The consolidation of the northern half of the vault of EP25 will pose difficulties. Not only are there large trees in this area, but the vault ceiling appears to have collapsed within the building while the roof and vault mass remained standing. This situation will necessitate very careful excavation from both above and below and will involve slower and more painstaking work than the southern half.

In addition to the full consolidation of the EP25 vault, the walls of the two western rooms will ultimately need to be revealed and stabilized. The end result will be two rooms with walls consolidated to their collapse height, up to two meters, and the rear room with the consolidated vault that would be open to the public. In the meantime, a thatch roof was placed over the work in progress to protect it from excess exposure, maintaining the stabilization. Once all the consolidation is complete, this northern temple will be a show-piece for El Pilar.



Figure 20: Consolidation at EP 25