

ONE *KATUN* OF WAIT AT EL MIRADOR, PETÉN: EXPLORATION AND RE-EXCAVATION OF STRUCTURE 34 FROM THE LATE PRECLASSIC

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Keywords: Maya Archaeology, Guatemala, Petén, El Mirador, excavation, Preclassic architecture, restoration, consolidation

The archaeological site of El Mirador is located in northern Petén, within a basin defined by a karstic mountain range on three of its sides. It is surrounded by many areas of low-lying terrain or woody swamps that identify the area. The site is connected with other ones within the basin through a network of causeways that formed a system of interaction not widely known in the Preclassic period. Archaeological investigations conducted between 1978 and 1983, organized by the Catholic University of Washington and the Brigham Young University, established the strong presence of a Preclassic occupation. Part of these investigations included the excavation of Structure 34, located within the Tiger Complex of the West Group in El Mirador. To evaluate the results obtained in previous investigations, and to originate a program to develop tourism, as well as to initiate other consolidation and conservation programs, the Project El Mirador Basin undertook a systematic investigation of the site as a first stage during the season 2003. To corroborate the extension of the Preclassic occupation, one of the initial efforts of the season was to arrange exploration tests to determine the extension and chronology of unknown places in the site.

The archaeological excavations at El Mirador during the field season 2003 included test pits and the intensive excavation of several plazas and structures, represented by Operations 101, 102 and 103 (Figure 1). The excavation of Operation 101, supervised by Adriana Linares, determined that the complex of large buildings with a triadic pattern denominated the Tres Micos complex, located on the southeast corner of the Western Group, is also dated to the Late Preclassic period. The ceramic recovered from the stratigraphic levels of test pits has indicated an occupation exclusive of the Late Preclassic period (Figure 2a).

Operation 102, conducted at the complex of Las Cigarras, was in charge of Carlos Morales, achieving a depth of 7 m in the refill, and uncovering one stucco and two *sascab* floors, as well as several construction cells, which suggested a work control and some remarkable architectural construction programs exclusive of the Late

Preclassic period, as determined in previous investigations in other sectors of the site (Figure 2b).

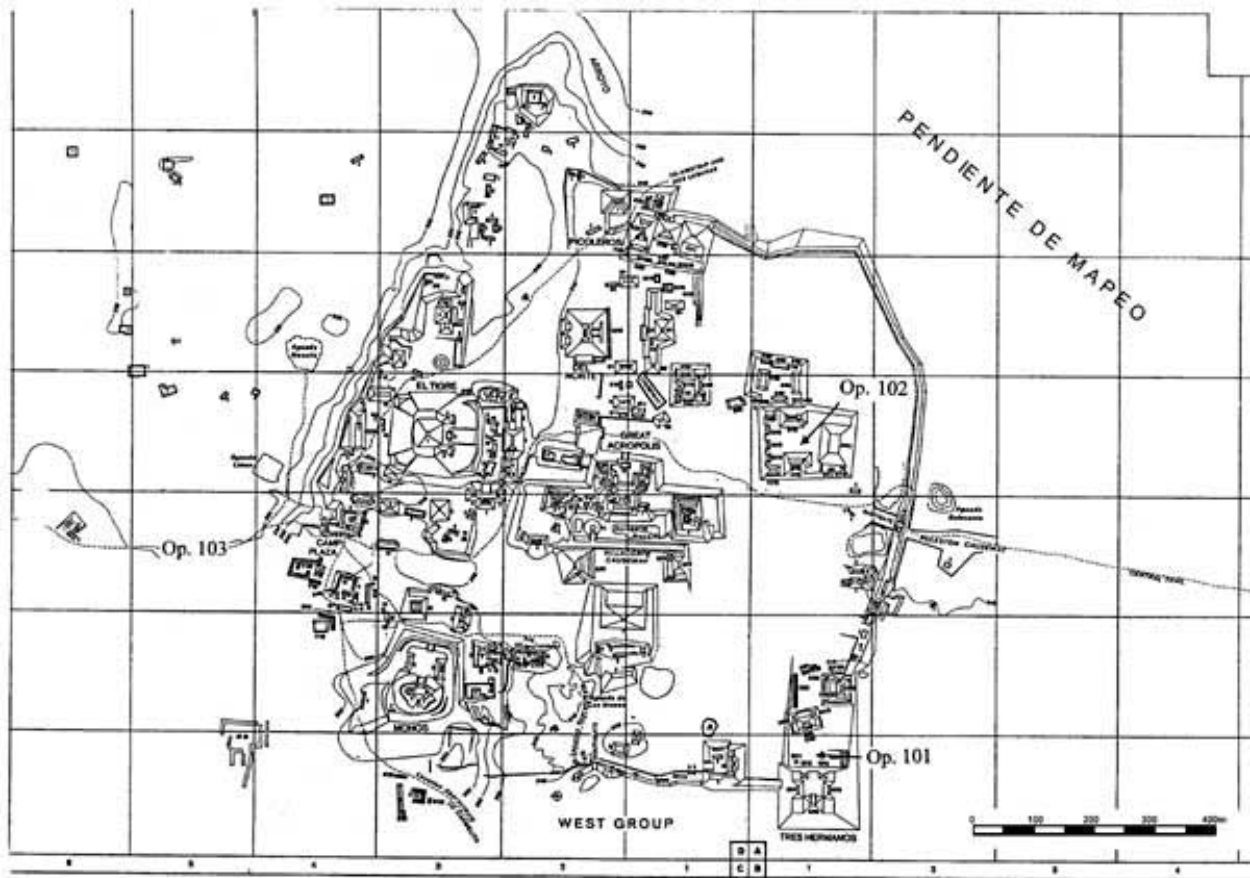


Figure 1. Map of El Mirador (Dahlin 1984), showing the areas where the explorations took place.

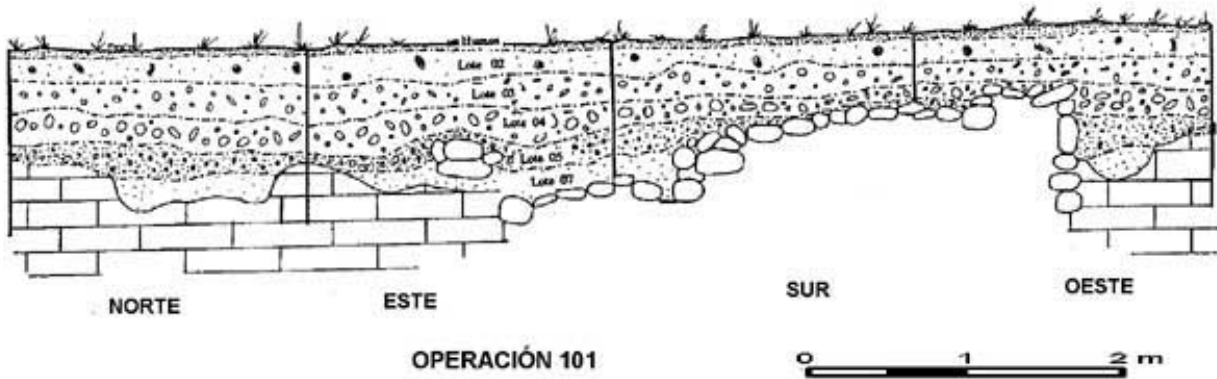


Figure 2a. Profile of Operations 101 and 102 (drawing by A. Linares and C. Morales).

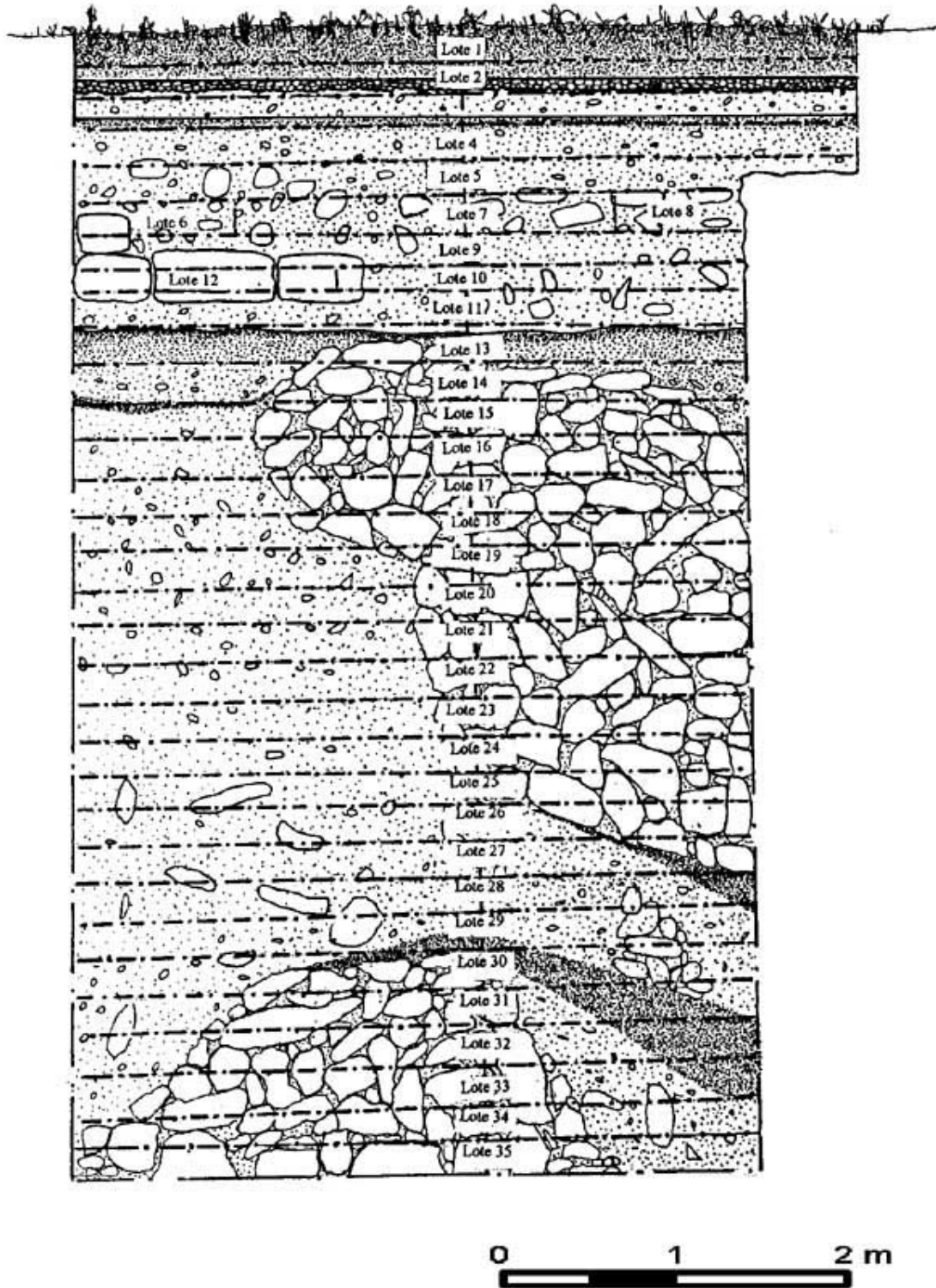


Figure 2b. Profiles of Operations 101 and 102 (drawing by A. Linares and C. Morales).



Figure 3a. Artifacts found in Operation 103 (drawings by Sharon Belkin).

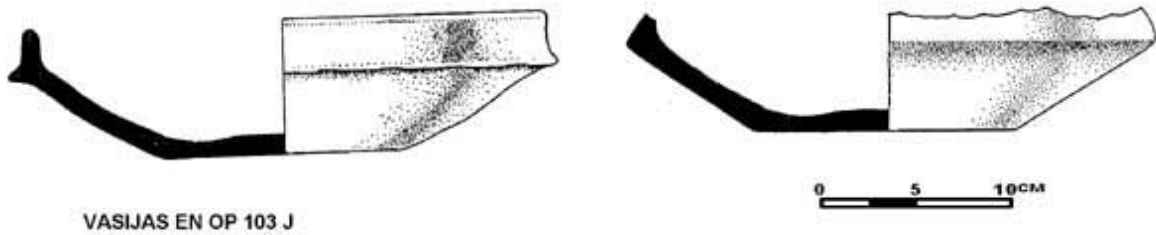


CUENCO MINIATURA (103 O.04.18)

Figure 3b. Artifacts found in Operation 103 (drawings by Sharon Belkin).

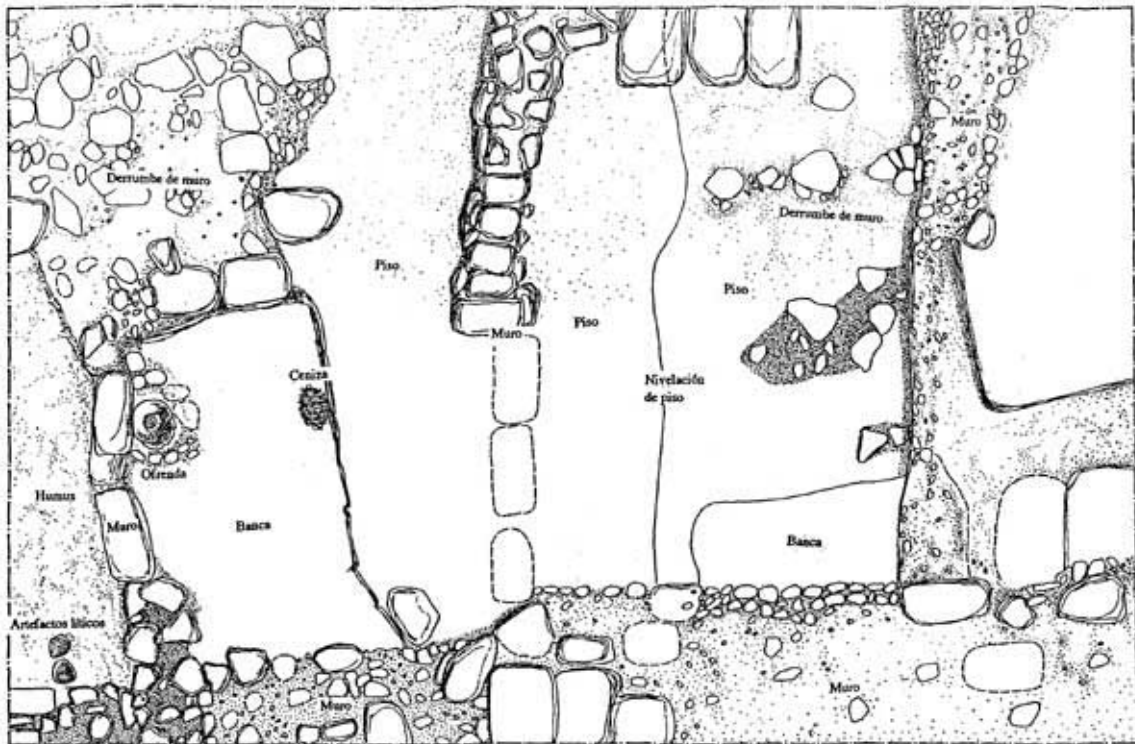
The excavations conducted in Operation 103, supervised by Antonieta Cajas, revealed the complexity of the site regarding its settlement pattern. This excavation took place at the west scarp of the Western Group of the site, within the camp area. The scarp is 30 m high and surrounds the west and north sides of the Western Group. A preliminary excavation led to the recovery of two scrolls in the shape of a J (Figure 3a),

suggesting architectural complexity in places where no surface evidence was visible. While expanding the excavations around the first pit, a sequence of constructions of the residential type was exposed, dating exclusively to the Late Preclassic period. The presence of walls and floors was marked by a heavy layer of ash on top of the floors and around the walls, suggesting a burning event on the roofs of those structures occurred around that timeframe. Besides, Operation 103 revealed a deposit (Figure 3c) composed of two bowls of the Late Preclassic Chicanel horizon, which were upside down, and stashed away beside the main stone wall.



VASIJAS EN OP 103 J

Figure 3c. Artifacts found in Operation 103 (drawings by Sharon Belkin).



OPERACIÓN 103

0 0.40 1 m

Figure 4. General plan of the excavation, showing the walls, the different floors and the leveling of the rooms' floors (drawing by A. Cajas, traced copy by E. Ortega).

Based on the excavations of Operation 103, we believe that most of the scarp was occupied by residences that were not visible, covered as they were by the heavy erosion that happened there (Figure 4). This evidence is consistent with Kevin Johnston's data from Itzan, which detected non-visible structures that represent a puzzle at the time of conducting demographic studies of Maya sites, particularly those that go very far back in time. However, the presence of residences in the scarp shows evidence of the social and demographic complexity during the Late Preclassic period at El Mirador.

STRUCTURE 34

Structure 34 is located in the southeast corner of the Tiger Pyramid (it belongs to the Tiger Complex), within the West Group of El Mirador. The name of the building was published by Ray Matheny (1987) as "Tiger Temple", but the confusion created because of the difference between the Tiger Pyramid and the "Tiger Temple" made it necessary to keep the denomination of "Structure 34", as named and described by Ian Graham in 1967.

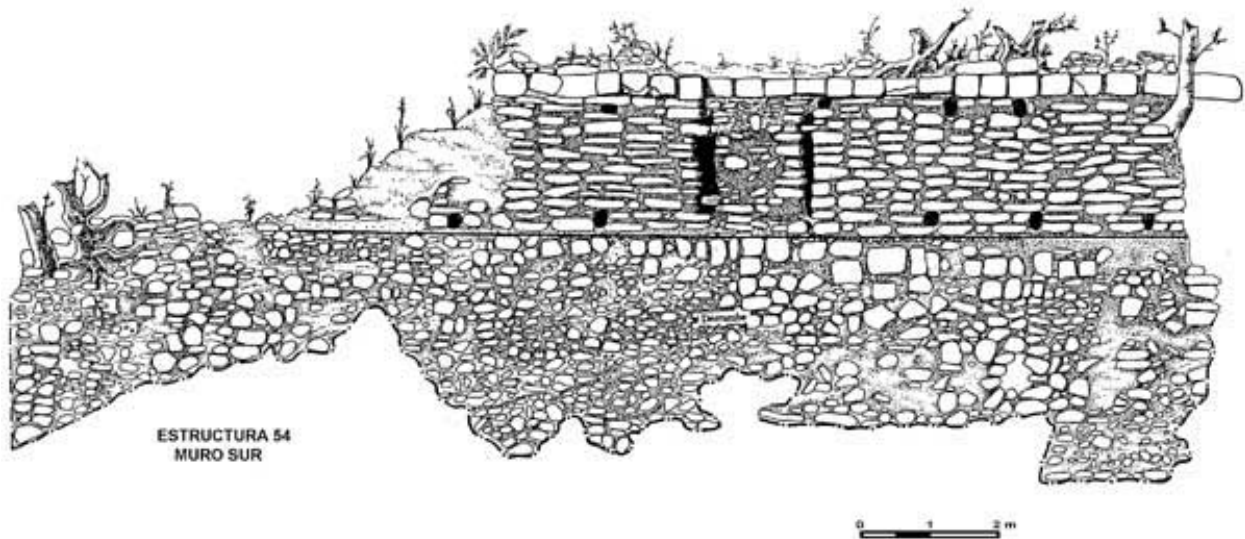


Figure 5. South wall of Structure 34, before consolidation (drawing by A. Cajas and A. Linares, traced copy by E. Ortega).

Structure 34 is a 17 m high building, and the primary structure of a construction featuring the style known as triadic pattern (Hansen 1990: 171-172); it is flanked by two smaller buildings on a common platform (Structures 33 and 35), arranged one in front of the other. Ian Graham, the archaeologist, was the first to notice the wall visible from the south side of the building (Graham 1967:45), which was preserved most probably because of the large stones of the cornice built on top (Figure 5). The dimensions of

these cornice stones are 1.05 m long, 0.40 m tall, and 0.40 m wide, and show a slight dripping carved in the lower face of the stone.

As to the major architecture, and following a *hiatus* that lasted 20 to 23 year as of the preceding research, excavations were initiated and intensive consolidation measures were taken at Structure 34 at El Mirador. A previous project at the site had been sponsored by the Catholic University and the Brigham Young University between 1979 and 1982, headed by Bruce Dahlin and Ray Matheny, who initiated the investigations of the structure.

The northeast and southeast corners of the structure showed huge blocks on top of them, just like Graham had noticed in 1967. The 1979 investigations reported that the block of the southeast corner was broken in its middle section, and that the other half with the carved dripping, was located on the south base of the structure. Moreover, in May 2003, we noticed that the wall that supported the southeast corner stone had collapsed, leaving one portion of the block in the air and in danger of falling down. Therefore, an emergency salvage intervention was required to rescue the existing wall through the consolidation of the stone and the mortar to prepare the building for exhibition, in the long run.

STRUCTURE 34: NEW DATA



Figure 6. Drawing of the sloping wall as seen from the east (drawing by A. Linares, traced copy by E. Ortega).

New substantial discoveries saw the light during the 2003 field season in Structure 34, when the restorer Enrique Monterroso hit a previously unknown substructure (Figure 6). It was located under the chambers floors of Structure 34, and was visible from the west side of the structure only (Op. 34 U). The building exhibited a stucco floor and a strong sloping wall to the south. The modification of walls from the upper chambers saw at least three different stages, although only two were evident in the south wall. The north side wall, particularly the one on the west side, revealed three identical subsequent modifications.

The southwest wall of the structure seems to have been intentionally removed in ancient times. The north wall of the chambers in Structure 34 had a cornice similar to the one of the south wall, although it seems that most of the stones had to be removed to build elsewhere. Structure 34 had at least two variable occupations, one with the construction and modification of the existing structure, and exclusively associated with the Late Preclassic occupation. The other occupation involved the placement of a stone layer of 0.40 to 0.50 m on the floor of the main platform of the structure. This occupation is also associated with another one that occurred around the end of the Late Preclassic and the beginning of the Protoclastic periods.

Several pits were placed on the floor of the main platform of Structure 34, on the east and west sides of the building; some of them reached a depth of 1.76 m. One artifact from Operation 34 S included evidence of early scripts, dated to the end of the Late Preclassic or the beginning of the Protoclastic period. The east and west corners of the upper chambers in Structure 34 presented a 1 m inset, therefore, the corner blocks might have been associated with a stage of construction that preceded the construction of the outer chambers.

The platforms located nearby the central stairway were built on the tread of the third step of the central stairway, thus allowing for a more direct access to the iconographic panels.

OPERATION 34Q: EXCAVATION OF THE NORTHWEST WALL

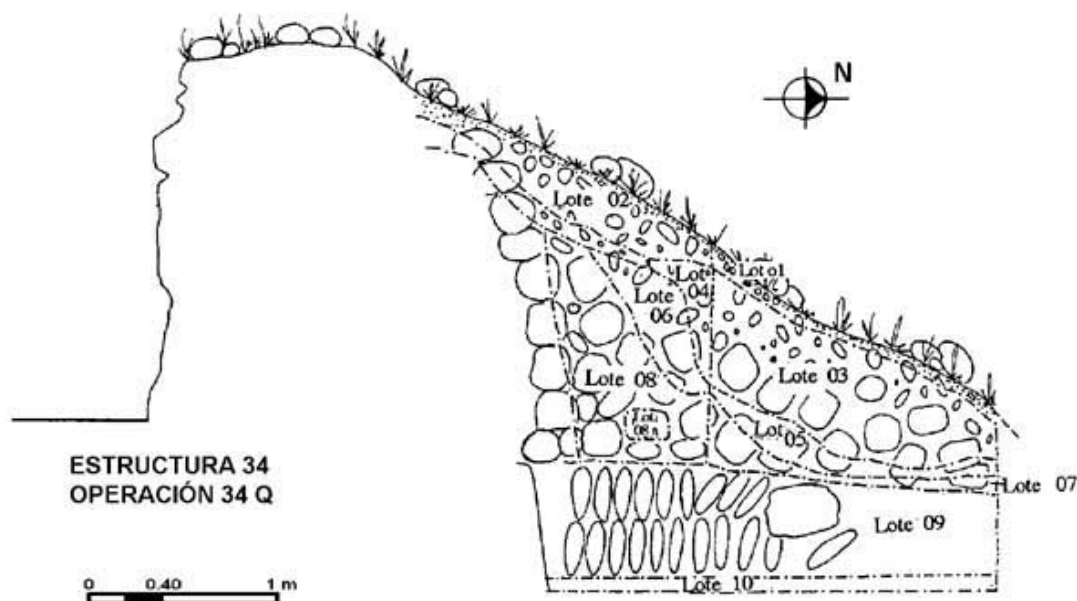


Figure 7. Operation 34 Q, showing the operation lots, as well as the collapse of the wall on top of the stucco floor (drawing by A. Linares).

Operation 34 Q was placed at the outer northwest side of the north wall of Structure 34's chambers, which had not been previously investigated. The collapse found in this operation (Figure 7) probably corresponds to a vault, as the springing is visible inside the chambers; this, however, has not made possible to determine what type of vault was used in Structure 34, as the springing continues upwards, vertically. The presence and location of the cornice in the collapsed wall of operation 34 Q, the only one found at the northwest façade of the chambers, is confusing because it was supposed not to exist. Hansen (1984, 1990) had proposed that the building was composed of a roof of beams and mortar, but not necessarily of a vault. It can be asserted that such stone is a cornice because its dimensions are similar to those mentioned by Hansen when he referred to the cornice blocks in Structure 34. However, we were unable to establish what kind of cornice the northwest façade of the chambers had, because its sides were found broken and heavily eroded.

Among other objects, rims of jars and bowls were collected, as well as bases and one hollow conical support with a rattle (unslipped), which dates either to the Terminal Late Preclassic period or the beginning of the Protoclassic.

The wall discovered in Operation 34 has the same façade –dimensions-wise- to that discovered in Operation 26 K of the excavations conducted from 1979 to 1982. Likewise, the east side of the chambers may also be compared with the inset south corner, as in the west façade of the chambers (Op. 34 Q) the well preserved corner projected itself out. The floor was found under the collapsed wall (Figure 7), showing a stucco layer applied on top of it to level the older floor. No colorant was found.

OPERATION 34 R: EXCAVATION OF THE WEST PLATFORM

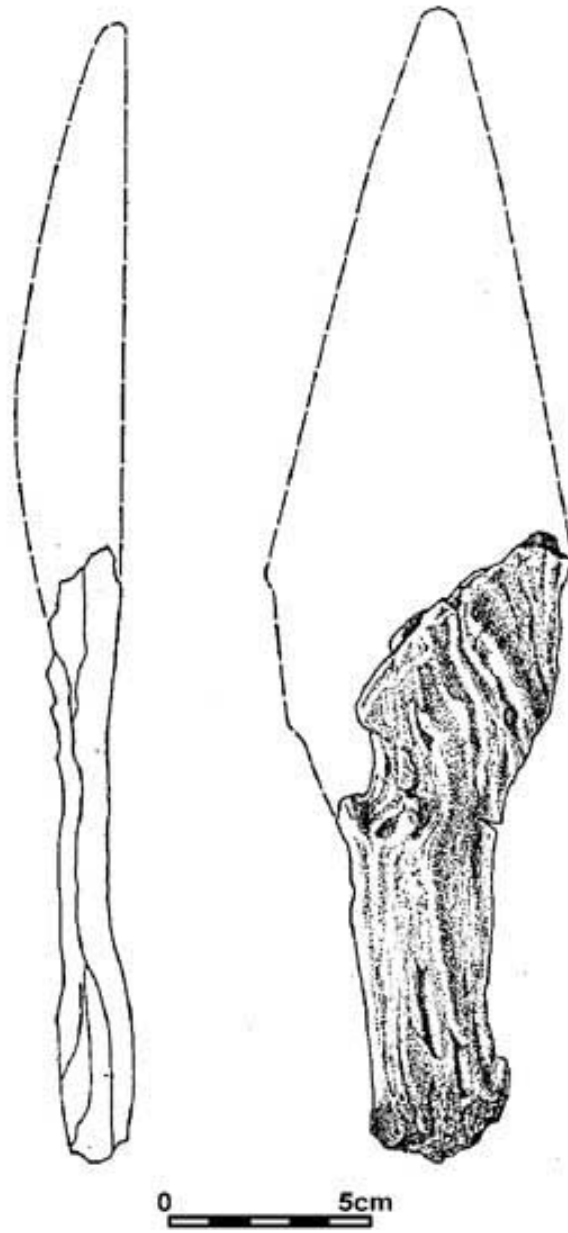
Operation 34 R consisted of a number of excavations conducted on the main platform of Structure 34, in front of the mask and the panels of the west façade. The excavations consisted in two rows of five 2 x 2 m quadrants to reveal the floor at the front of the west platform. The excavation, like all others conducted on top of the platform of Structure 34, revealed a layer of leveled stones which apparently represented an occupation that differed from the original function of the building. The layer of arranged stones seems to have been a part of the foundation of a floor that is no longer there, associated with the ceramic level of the final Late Preclassic phases. There is no other known case so far from the Mirador Basin of a Late Preclassic floor with blocks and stones similar to the foundations this one features. In association with this layer there was a midden containing almost complete bowls of the Chicanel phase and of the Sierra Red type, together with unslipped pieces, as well as bone fragments, shell, flints and portions of modeled stucco.

The splinter of a Preclassic lance point made of very hard wood was recovered (Figure 8a), though its preservation was probably due to its being burnt. The piece is a replica of a Preclassic flint lance point, found on the platform's floor. Moreover, an intrusive pit was detected under the midden, cut on the two floors of the platform. This pit shows an elliptic shape and is approximately 1.42 m long, but contains no diagnostic feature of its presence.

The collapse of a small platform in the west façade was documented. The excavations revealed the collapse of the platform to the north, with 1 m of stones in the original position though on the collapsed side. This piece of information allowed us to define its original height.

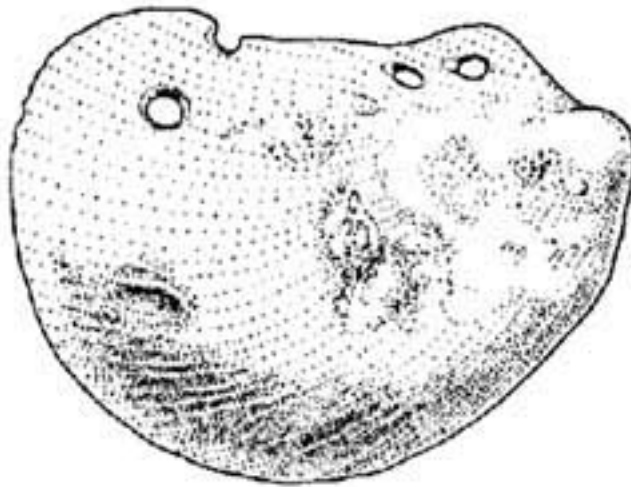
OPERATION 34 S: EAST SIDE OF MAIN PLATFORM, STRUCTURE 34

Operation 34 S involved a number of contiguous excavations conducted at the east side of the main platform of Structure 34. All in all, they amounted to 20 units measuring 2 x 2 m. The excavations exposed a second intrusive pit, like the one found in Operation 34 R. This intrusive pit was elliptically opened following a southwest-northeast direction, and had a length of 1.40 m. The refill inside consisted of loose stones, some in the shape of wall slabs. In ancient times, this pit was expansively excavated, in other words, its middle section was larger than the initial one, thus arguing against a posthole function, or poles.



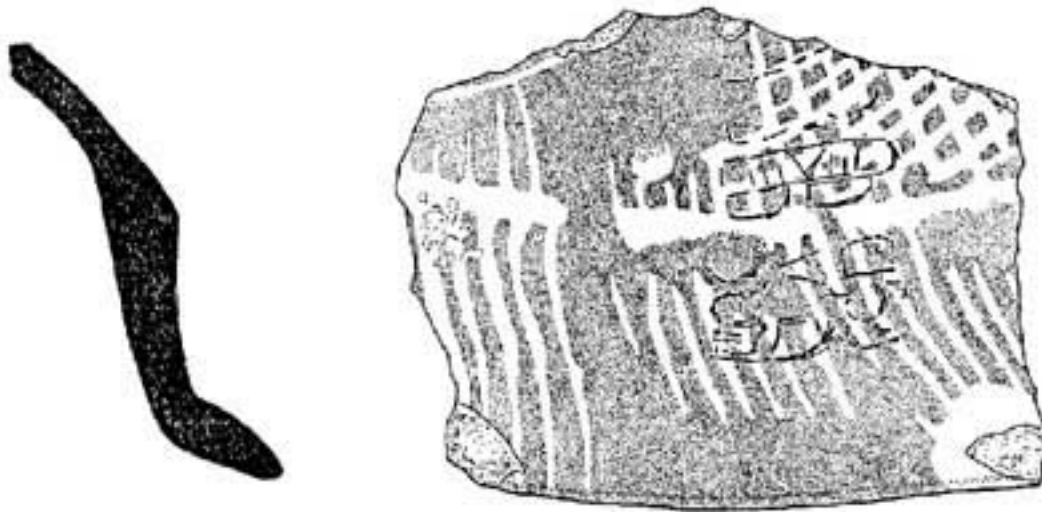
34R.43.81

Figure 8a. Artifacts found in Operations 34 R and 34 S.



OP.34S.24.35

Figure 8b. Artifacts found in Operations 34 R and 34 S.



OP. 34S.24.35

Figure 8c. Artifacts found in Operations 34 R and 34 S.

Among the artifacts found inside this pit there was a sharp *Spondylus* shell with three perforations in its upper edge (Fig. 8b). The presence of this shell is consistent with others found in contexts corresponding to the end of the Late Preclassic period. Of major significance was the finding of one sherd of the Sacluc Black-on-Orange type, near the aforementioned shell. This sherd (Figure 8c) includes two incised glyphs in the outer part of the sherd. Although the meaning of the text is uncertain, the first glyph seems to be the *k'an* symbol in its form of "heaven", while the second glyph is the profile of a being with a prominent nose and an earflare. Even though the meaning of this

glyph has not been fully understood so far, its localization and design may be pointing to a title, possibly that of *ahaw* (lord) or *winik* (man). However, there is no doubt that the text is one of the earliest ones ever found in the Maya lowlands, and together with the texts from San Bartolo, El Mirador, Nakbe, Pedernal and El Tintal, it makes it clear that the origin of Maya writing dates back at least to the Late Preclassic period. One additional finding was a charcoal sample from the pit, which may be of help to date the pit deposit and its construction.

OPERATION 34 T

Operation 34 T was located north of the central stairway of Structure 34, adjacent to the north edge of the main platform. The most interesting finding was a fragment of an alabaster vessel with a medial flange found on top of the floor, close to the north edge of the platform. This exceptional piece belonged to a bowl with 0.40 m in diameter. Therefore, it represents an exotic and valuable imported piece, because of the shortage of alabaster vessels and the craftsmanship involved in the manufacture of such a piece. Its dating corresponds to the Chicanel horizon.

OPERACION 34 U

The discovery of a sloping wall located in the southwest corner of Structure 34 (Figure 6) represents an interesting finding. Surprisingly, this architectural feature revealed a construction that preceded that of the chambers, but with no evidence of its presence in the tunnels and previous excavations conducted at Structure 34. This could possibly be related to the Terminal Middle Preclassic or the beginning of the Late Preclassic periods, which could eventually determine when Structure 34 was first occupied. There was no evidence of stairways corresponding to the sloping wall, suggesting that the structure underwent heavy modifications prior to the construction of the present building.

The north wall revealed three construction phases. We were concentrated on the recuperation of architectural features in an attempt to reconstruct the outer wall of the chambers, when one construction built prior to the second one already found was detected, which was probably the initial construction of the upper chambers.

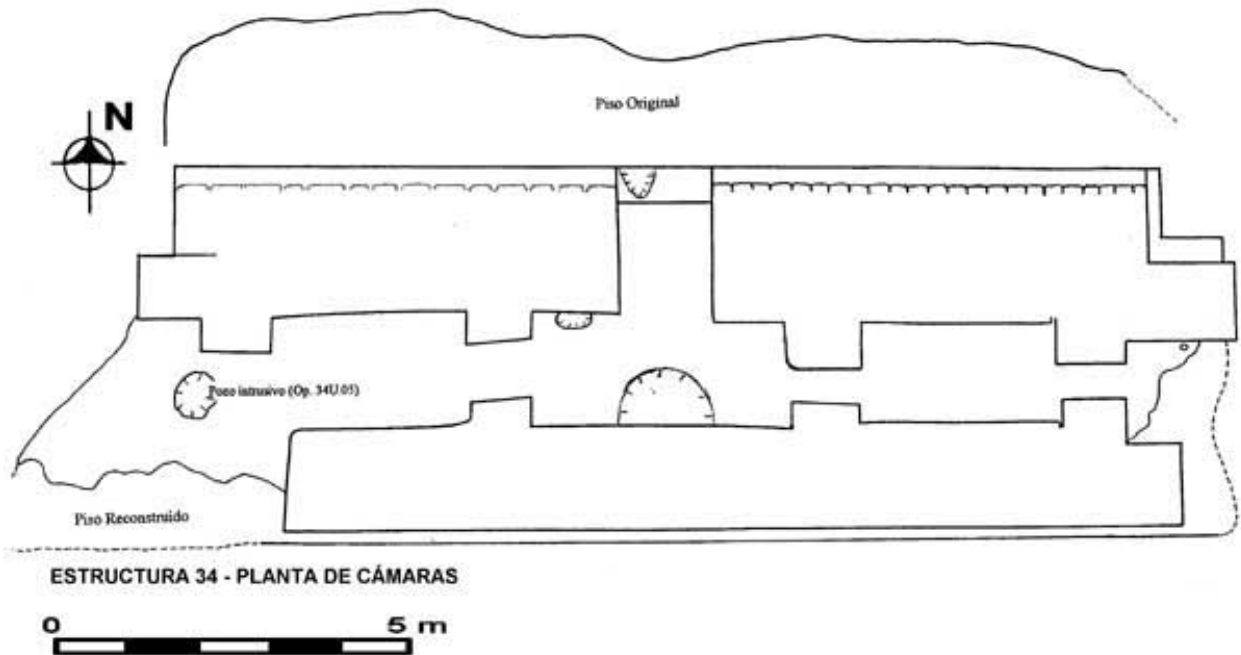


Figure 9. Final plan view of chambers. Structure 34 (drawing by A. Linares).

The five chambers of Structure 34 were intervened. A plan view was sketched to define the width of the walls, the dimensions of the chambers, as well as the restored and untouched area (Figure 9). The original stucco floor was perforated in several places in ancient times. The largest one was discovered in 1980 in the trench located at the foot of the south wall of the Central Chamber, which was full of charcoal. An additional pit found in 1980 was located in the jamb of the north wall of the Central Chamber. A floor that went unnoticed in previous excavations was located near the jamb of the north wall, at the end of the West chamber (Figure 9).

OPERATION 34 V: TUNNEL UNDER THE CENTRAL STAIRWAY OF STRUCTURE 34

Operation 34 V corresponded to the pit and the exploration of the tunnel found under the central stairway of Structure 34. The original excavation of the floor was conducted in 1980 and 1981 at the foot of the first stairway. The excavations revealed the two floors of the main platform, and the lower one showed a hard consistency and was painted red. In the 2003 season, the original excavation was opened once more, but no additional evidence of substructures in the upper refills of the platform was found.

OPERATION 34 W: TUNNEL EXTENSION OF OPERATION 26-O

Operation 34 W corresponded to the extension of the tunnel excavated in 1981, where the south wall of a substructure in the middle of the main platform was found. This substructure was revealed when we reached, from the rear, the large blocks that formed the interior wall. The blocks in this subwall were placed on their long exposed

axis, with the exception of the blocks that joined together the wall and the refill. The north wall of the structure was most probably removed, and no evidence of the substructure was observed from its north side. The object of Operation 34 W consisted in the exploration of the tunnel excavated in 1981, which showed that no collapse involving stone or mortar had taken place during the 23 years it remained sealed. During the preceding excavation, wooden beams were placed every 1 m in the tunnel for safety reasons. Although some of the beams were rotten, others were well preserved, showing that a tunnel may exist with no negative impacts from it. The substructure's south wall exhibited skillfully cut and polished blocks on the outer face, but no stucco in the area where the wall was penetrated to reach the south side of the substructure.

Proceeding eastwards with the excavation of the wall, it was noticed that the large stones involved presented a thin layer of stucco, which was cut by the prehispanic Mayas. The intentional destruction of the stucco is peculiar, and it might have included some design or art associated with the wall that was removed. The stucco found in the rest of the building was natural in color. In the south side of the substructure, the wall abutted a number of corners, insets, and stuccoed stairways, which is consistent with the Preclassic pattern. There was ceramic with a medial flange, a form usually common in the middle and later phases of the Preclassic period, and in concordance with sherds of medial flanges recovered in previous refill excavations conducted in Structure 34.

OPERATION 34 X: EXCAVATION OF ONE PORTION OF THE CENTRAL STAIRWAY

The excavation of Operation 34 X was located on one portion of the central stairway of Structure 34, an area not previously excavated. However, there was evidence of an ash layer in the upper strata, suggesting a period of burning.

OPERATION 34 Y: WEST FAÇADE OF THE MAIN PLATFORM

Operation 34 Y corresponded to the excavation of the west side of Structure 33. The purpose of this excavation was to understand the shape of Structure 34's main platform. This has been poorly preserved due to damages caused by tree roots and stone removals from subsequent occupations of the city.

OBSERVATIONS REGARDING CONSOLIDATION WORKS: MEASURES IMPLEMENTED

As a result of its careful covering 23 years ago, Structure 34 did not show any serious damage, in spite of the huge amount of small roots that penetrated in the earth and the upper levels of the platforms. The stucco panels showed no evidence of damage or harm. The mask on the east side of the façade presented a heavy concentration of thin roots that penetrated through a number of different places, loosening some portions of the existing stucco and in turn, leading to increased efforts in conservation actions to protect it.

The consolidation works on Structure 34 included a reintegration process of the original stones, anastylosis, replacement of old mortar with new, as well as the placement of new refills, the filling of root holes and the preparation of mixes. One *sascabera* was excavated 100 m southeast of Structure 34, where a large quantity of *sascab* was removed to be used in the mixes. Large wooden troughs were also made available to process quicklime, prepare the mixes and store water.

According to the plans of architectural consolidation, the entire floor of the upper chambers of Structure 34 was uncovered. Then, a thin layer of strained earth was applied, and on top of this thin layer of earth a geo-textile fabric was placed to differentiate between the aggregated stuccoes and the original stuccos and floors. On top of this geo-textile, an additional stucco floor was formed, polished, and covered with an organic liquid extracted from a tree called "Palo Caulote" or "*Pixoy*", found nearby the watering place at the camp. This natural component was intended to reduce the cracks when the stucco dried. Moreover, samples of this liquid were recovered for subsequent chemical analysis at the laboratories of the Getty Conservation Institute of Los Angeles, which showed there was evidence of resins or organic aggregates in the Preclassic stuccoes. To this day, the floor is in perfect state and the transit of tourists has not affected the original Preclassic stuccoes. This model indeed works, because the act of covering the original stuccoes with a thin layer of earth and then with the geo-textile allows for the possibility of exposing more Preclassic stuccoes, with a greater safety regarding their preservation and permanent consolidation. As a consequence of such good results, the addition of a stucco layer on top of the central steps and the floor of the main platform will be proposed, to avoid a negative impact on the Preclassic stuccoes.

PROTECTION ROOF

In view of the delicate condition of the Preclassic stuccoes, walls, panels and masks of Structure 34, it was necessary to design a roof fit to protect the architectural art while it was also intended to be environmentally friendly. When comparing the protection roofs with those of other sites in México, Guatemala, Honduras and El Salvador, the need to design a roof that would adequate better to the environment was noticed, preventing abrupt changes of temperature, allowing the passage of light, preventing ultraviolet rays of light, and making tourists focus on the Preclassic building and not on its protective structure.

A protection roof system was designed by engineer John Cybulski, from the Boeing aeronautical company at Los Angeles. The company Aceros Estructurales of Guatemala was selected to build the protecting structure for the site. One of the positive attributes of the roof is having been built with poly-carbonate sheets, as they allow light to pass through, but not the ultraviolet rays that could damage the masks and panels. Moreover, the vegetation, the trees, the clouds and the like may be appreciated, because the sheets are translucent. Also, the roof was designed with a 0.40 m separation between each panel of sheets and therefore the building may breathe without keeping the heat inside, or provoking abrupt temperature changes. Although the project periodically evaluates the visualization and the efficiency of the roof, the results

obtained so far are good and suggest that similar systems could be used to protect other buildings, architectural art, or weak monuments.

SUMMARY OF THE EXCAVATIONS: STRUCTURE 34

The excavations conducted in Structure 34 represent a new stage of research, consolidation and conservation in the Mirador Basin. Over 40 workers were hired, including masons, students, drawers, excavators, restorers, photographers, porters, gravel manufacturers, muleteers and people in charge of the poly-carbonate roof. Nine excavations were conducted at the structure, to complement earlier studies. The new excavations provided scientific data that helped to clarify details of the architectural construction, evidences of earlier structures, as well as the chronological sequence of Structure 34, the use and function of the structure, and also, valuable information on the cultural, social and economic level of the Preclassic Maya who inhabited the Mirador Basin, together with evidence of ancient texts.

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Figure 2b Profiles of Operations 101 and 102 (drawing by A. Linares and C. Morales)

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